



Deep Freezer

Operation Manual

Certificate of Quality

Checker:

Model:
EL-F-4H
EL-F-12H
EL-F-19H



AEGIS SCIENTIFIC

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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.
- The product is fit for low temperature storing goods。



Packing List

Name	EL-F-4H	EL-F-12H	EL-F-19H
Manual	1	1	1
Plastic bag	1	1	1
Lock	2	/	/
Pad lock	/	1	2
Ice scraper	1	1	1
Drawer	3	7	10
Handle kits	1	1	2
Brackets (for rear wall distance)	/	/	2

Global Warming Potential

Model	Rated voltage (VAC)	Rated frequency (Hz)	CO ₂ equivalent (Tonnes)
EL-F-4H	115~	60	0.001
EL-F-12H	115~	60	0.002
EL-F-19H	115~	60	0.003

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

GWP=global warming potential

Refrigerant type	GWP
R600a	20
R290	20

Specification

Name	Deep Freezer
Model	EL-F-19H
Exterior dimensions (W X D X H) (mm)	915×810×1860
Interior dimensions (W X D X H) (mm)	685×610×1228
Effective volume	490L
Door	Solid door
Insulation	CFC-Free foamed-in-place urethane
Compressor	High Quality Hermetically sealed compressor
Drawers	10
Refrigeration	Direct cooling
Exterior/Interior	Spraying steel plate / PS plate
Condenser/evaporator	Wire and tube type/Plate type
Temperature control	Microprocessor controlled
Refrigerant	R290 150g
Weight	164kg
Temperature range	-10℃~-30℃
Voltage	115V~/60Hz
Rated power/current	600W/5.4A
Noise Level	43dB(A)
Foaming Agent	CP/IP
Ambient temperature	10~32℃
Anti-shock Safety Classification	I
Power connection type	Y
Access port	1
Alarm	High/low temperature alarm, sensor error alarm

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

Haier Quality,

Your trust from beginning to end.

This product is suitable for storage of cryopreserved plasma, biological materials, vaccines, electronic device and special materials for low temperature study. The freezers are popular in blood stations, hospitals, quarantine stations, colleges and universities, scientific research institutes and laboratories of electronics and chemical companies.

Temperature Control

Temperature Control: Digital display of temperature, temperature display accuracy in 0.1℃ /1℃; adjustable range -10℃ to -25℃ (EL-F-19H series is -10℃~-30℃)

Safety System

- Multi-alarms (high and low temperature alarm,sensor error alarm, door ajar alarm(only applicable to EL-F-4H))
- Standard buzzer alarm and flashing indicator alarm.Remote alarm terminals also standard(only applicable to EL-F-4H/EL-F-19H)
- System safely grounded

Refrigeration System

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

User-friendly Design

- User – friendly design with microprocessor control for smart and carefree operation, adjustment not needed.
- High performance thermal insulation for excellent temperature protection.
- Door Safety Design.

Not all features are available on all freezer models. Please refer to the specification for specific features. Should there some differences between the actual unit and the specification, please accept our apology. The content of the manual is subject to change without further notice.

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Specification

Name	Deep Freezer
Model	EL-F-12H
Exterior dimensions (W X D X H) (mm)	700×705×1665
Interior dimensions (W X D X H) (mm)	480×465×1430
Effective volume	262L
Door	Solid door
Insulation	CFC-Free foamed-in-place urethane
Compressor	High Quality Hermetically sealed compressor
Drawers	7
Refrigeration	Direct cooling
Exterior/Interior	Spraying steel plate / PS plate
Condenser/Evaporator	Wire and tube type
Temperature control	Microprocessor controlled
Refrigerant	R600a 90g
Weight	88kg
Temperature range	-10℃~-25℃
Voltage	115V~/60Hz
Rated power/current	135W/2.6A
Noise Level	34dB(A)
Foaming Agent	CP/IP
Ambient temperature	10~32℃
Anti-shock Safety Classification	I
Power connection type	Y
Access port	1
Alarm	High/low temperature alarm, sensor error alarm


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

Name	Deep Freezer
Model	EL-F-4H
Exterior dimensions (W X D X H) (mm)	597×635×835
Interior dimensions (W X D X H) (mm)	435×410×635
Effective volume	92L
Door	Solid door
Insulation	CFC-Free foamed-in-place urethane
Compressor	High Quality Hermetically sealed compressor
Drawers	3
Refrigeration	Direct cooling
Exterior / Interior	Spraying steel plate / PS plate
Condenser / evaporator	Wire and tube type/Plate type
Temperature control	Microprocessor controlled
Refrigerant	R600a 52g
Weight	46kg
Temperature range	-10℃~-25℃
Voltage	115V~/60Hz
Rated power/current	125W/1.8A
Noise Level	28dB(A)
Foaming Agent	CP/IP
Température ambiante	10~32℃
Anti-shock Safety Classification	I
Power connection type	Y
Access port	1
Alarm	High/low temperature alarm, sensor error alarm,door ajar alarm, communication fault alarm

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

Dear Customers,
Thank you for choosing Aegis deep freezer. Please make sure that you have carefully read the manual and follow the instruction as outlined. This is to prevent personal injury and damage to products.

Safety Labels

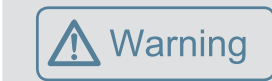
Symbol for
"Consult instructions for use"

NOTICE!
1.Freezer must be placed at least 20mm away from the wall to allow maximum air circulation.
2.Changing of Refrigerants should be done according to the Service Manual.


**LISTED**
40AH

**WARNING!**
ELECTRIC CABINET CONTAINS
CONTROL PANEL CONTACTOR ETC.


Safety Precautions


Warning


Ignoring this warning may result in death or serious injury

Caution

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

Actions or operations which are prohibited

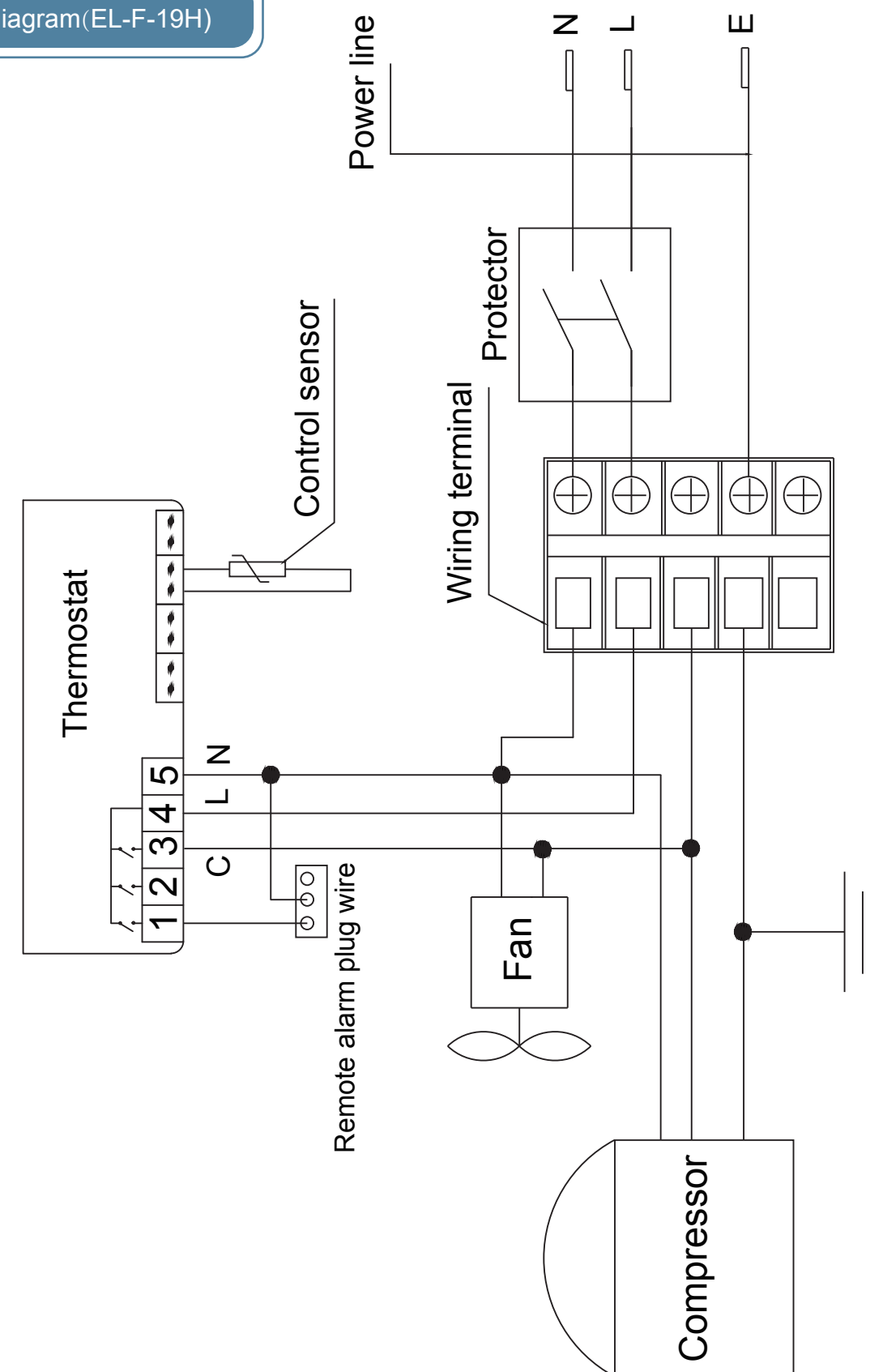
Actions or operations which must be followed

Warning

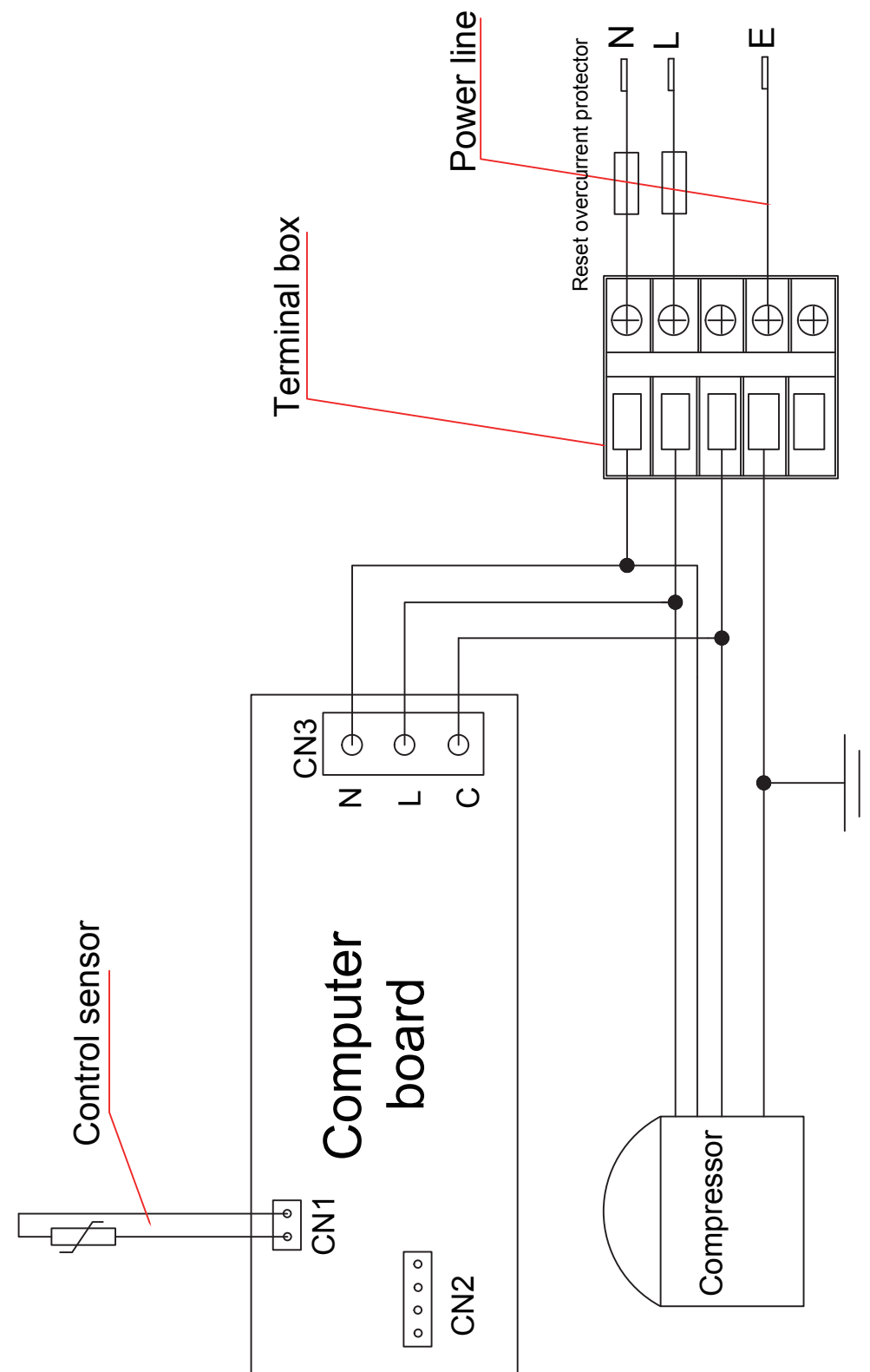
- When there is a leak of flammable gas, shutoff the feed valve of the gas. Open windows for ventilation and exhaust. Do not plug in your freezer or unplug your freezer as spark in these processes can cause an explosion or fire.
- We recommend the unit be installed and maintained by a professional to avoid any electrical hazard.
- Place the freezer on solid and flat ground to avoid tipping the unit over to cause personal injury.
- Only connect the freezer unit with a dedicated power outlet specified by the nameplate of the unit. This is to avoid fire or electric shock.
- If the supply voltage is lower or higher than the rated voltage, an automatic voltage regulator of at least 2,000W should be installed with the freezer.
- If the power cord needs to be lengthen, the cross section area of the extension line's conductor should be at least 2 mm² and the length of the extension cord should be limited to 3m. This is to prevent electric fire or shock.

- ❗ The power cord of the unit is equipped with a 10A three-prong power plug. Do not remove the ground pin of the power plug under any circumstances. Make sure the plug is securely plugged into the power outlet to prevent fire.
- ❗ The power socket must be equipped with a ground wire to prevent electric shock. If the socket fails to be grounded, the ground wire must be installed before the freezer is plugged in.
- ⊘ The freezer shall not conduct outdoor service. Electrical leakage or shock may be caused if wet by rainwater.
- ⊘ Do not place the freezer in humid places or places where the unit may get splashed on by water. This is to avoid electric shock due to deterioration of insulation.
- ⊘ In case the fire, do not pour water onto the freezer unit as a means to prevent electric shock or short circuit.
- ⊘ Do not place containers of water or heavy objects on the freezer. Falling objects may cause personal injury and overflown water may damage the insulation to cause electric shock and fire.
- ⊘ Do not ground the freezer through gas pipes, water supply pipes, telephone lines or lighting conductors. These types of connections can cause electric shock.
- ⊘ Do not touch electric parts such as power plugs or switches with wet hands to prevent electric shock.
- ❗ When pulling the plug out of the power socket, hold the power plug instead of power cable. Pulling the cable can cause a damage and personal injury.
- ❗ Unplug the freezer unit if it malfunctions to avoid fire or personal injury.
- ⊘ Dismantling, repairing and retrofitting a unit should only be performed by a professional to avoid personal injury.
- ❗ Disconnect the freezer when repairs or maintenance are performed on the freezer to prevent electric shock or personal injuries. Please cut off the power and unplug the unit.
- ❗ Do not inhale airborne particles inside and near the freezer during routine maintenance. This is to avoid health hazard.
- ❗ To avoid any potential danger to human health or environment, the freezer should be used in safe regions to store toxic, harmful or radioactive particles.
- ❗ If the freezer is to be decommissioned, unplug the power cord to avoid electric shock, current leakage, or fire caused by aged power lines.
- ❗ If the freezer is left unused in areas where supervision is unavailable for a long time, make sure children will not get close to the freezer and the door can not be completely closed.
- ❗ End of life disposal of a unit should only be performed by a professional. Remove the door to avoid accidents such as suffocation.
- ⊘ Do not store flammable, explosive or volatile articles inside the freezer and do not use flammable sprays nearby. This is to avoid an explosion or a fire.

Circuit diagram(EL-F-19H)



Circuit diagram(EL-F-12H)



Do not store corrosive articles such acid or alkali in the freezer. These chemicals can damage internal components or electrical parts.



Do not place packaging plastic bags within the reach of children to prevent suffocation accidents.



Do not climb to the top of the freezer or place plastic bags on top of the freezer. This is to prevent tip over of the freezer, which can cause personal injury.



Do not use any metal objects such as iron nails or wires into holes, gaps or vents for internal air circulation. This is to prevent personal injury due to contact of articles behind the holes.



Caution



Always check the settings in the controller after restarting a unit from a power outage or shut off. Change of settings may cause damage to the products stored.



If the power is shut off, let the unit sit for 5 minutes before it is powered up again to avoid damaging the compressor or the system.



Wear gloves when performing maintenance to prevent personal injury as a result of sharp edges or corners.



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



The angle of inclination shall not be greater than 45° when handling the freezer.



Be careful not to be tripped up by the freezer during handling, to prevent freezer damage or personal injuries.



Do not lift or handle equipment with door knob to prevent freezer damage or personal injuries.



Do not damage refrigerating circuit. Do not change any structure or components without permission.



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 is in operation.



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 discarded, 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 of by professional persons.

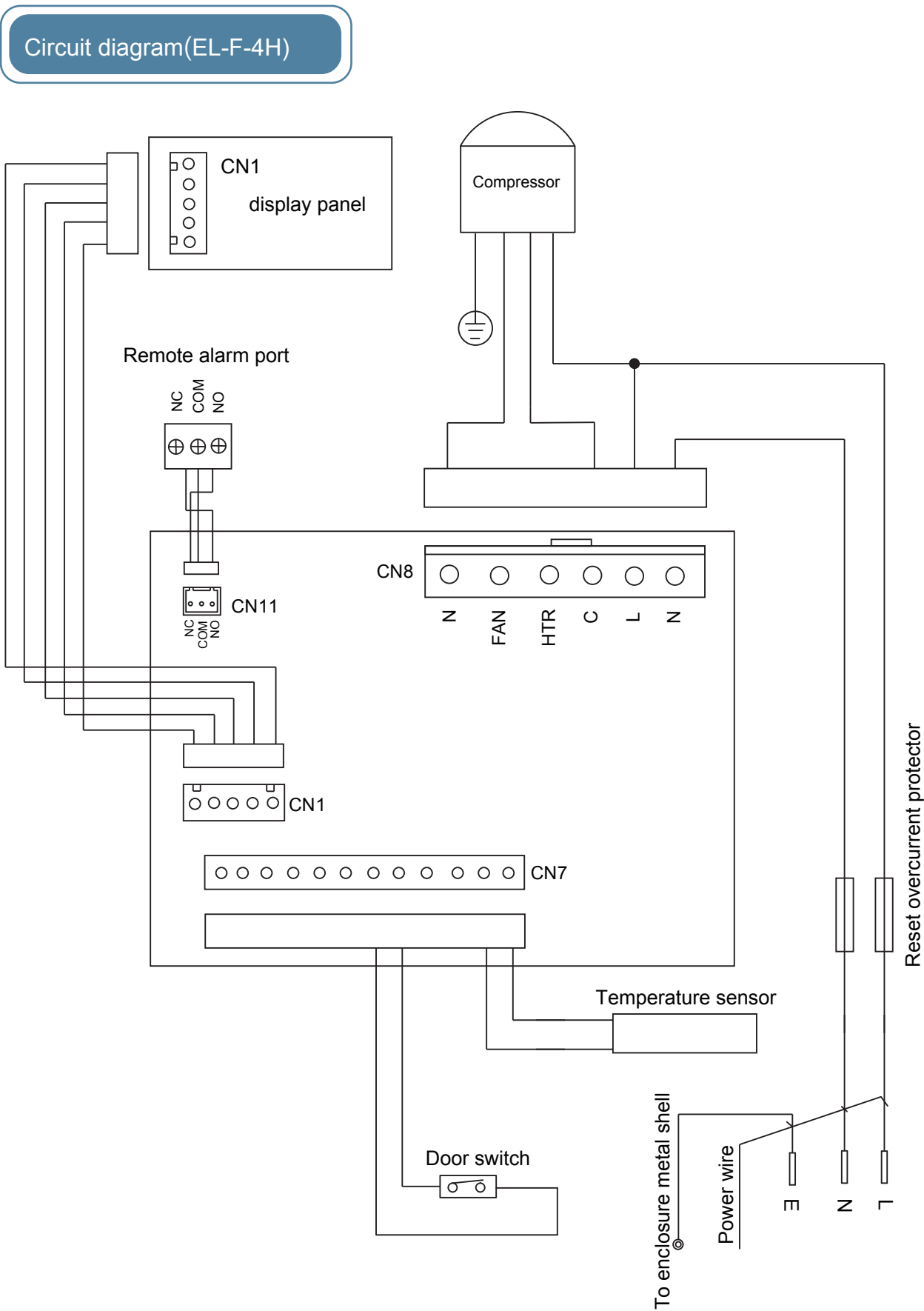


CP/IP foaming materials are flammable, need professional processing.

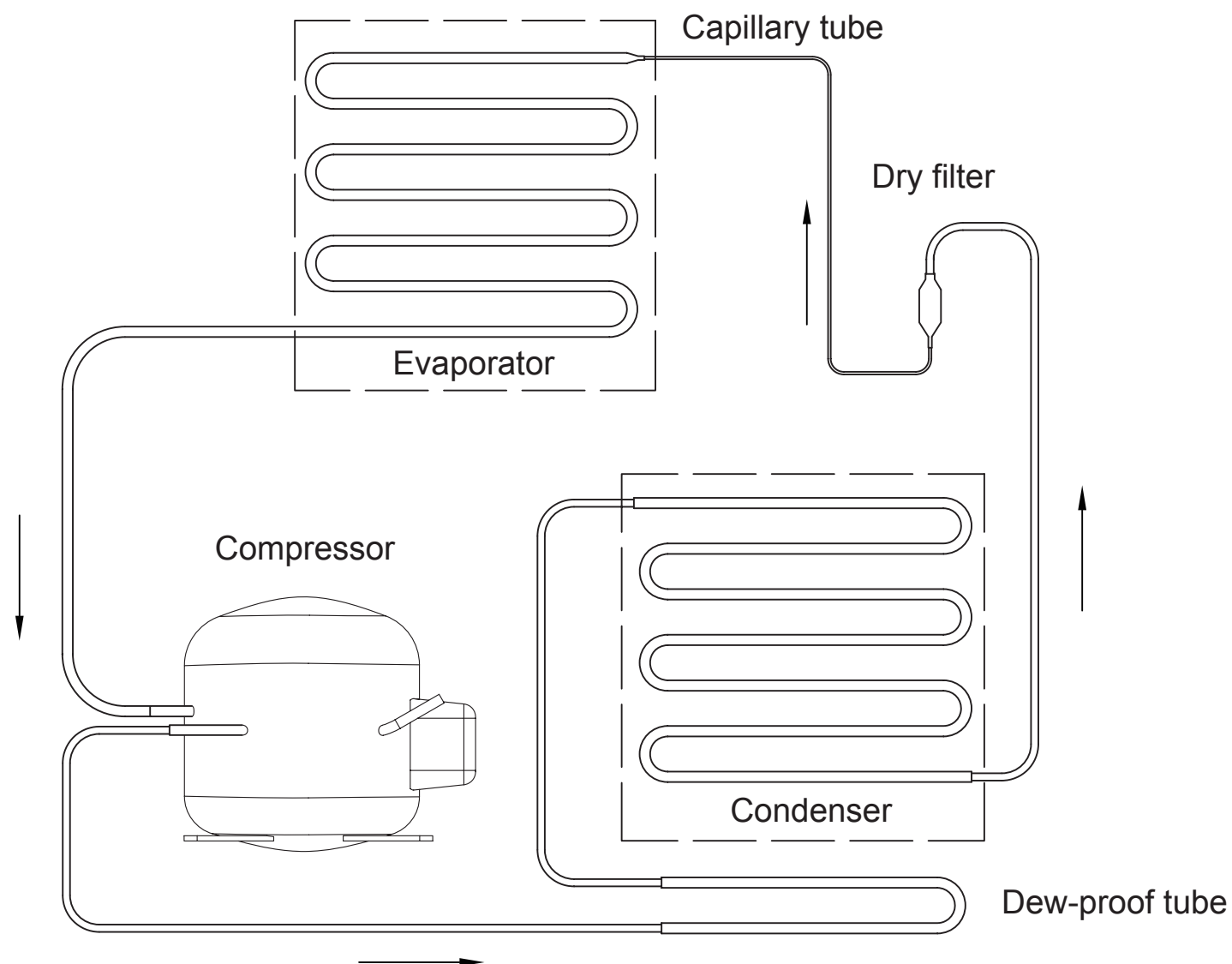
During the normal usage of the unit, please follow the following guidelines to achieve the optimal results.

- Storage and Removal of Stored Articles
 - a) Before loading any products into the freezer, please make sure the required storage temperature matches the freezer temperature.
 - b) Before loading any products into the freezer, make sure the freezer has reached the set temperature.
 - c) When loading a freezer, load in one batch at a time to allow the temperature recover to the set point. Do not fill the freezer more than 1/3 of its volume each time to prevent a potential overload of the unit.
 - d) When loading and retrieving products from a freezer, reduce the door opening times as much as possible. This is to make sure the freezer’s temperature remains stable and also to save energy.
- Pad lock of the freezer
 - The pad lock of the freezer shall be locked when the freezer is powered on,or it will cause cold air leakage and frosting which will affect the performance.
- Cleaning and Defrosting of the freezer
 - 1) The freezer can be cleaned with light soapy water. Never use brushes, acids, gasoline, soap powder, polishing powders or hot water to clean a unit as they will damage the unit. Never wipe the unit and components with volatile solvent such as gasoline.
 - 2) As a freezer works for some time, the interior will form a layer of frost. When the frost gets too thick, the refrigeration effect will be reduced. If the thickness of the frost reaches about 5 mm, use the provided frost-removal shovel to scrap the frost off the wall.
 - 3) Prior to a defrost operation; transfer the stored products to a safe place.
 - 4) During a defrost operation, do not use any sharp object such as knife, cold chisel or screwdriver to scrap the ice and frost. This method can damage the evaporator and the freezer.
- Test hole of the storage box:
 - The test hole installed in the wall of the storage box is a through-hole and is used to draw the measuring line out of the box at the time of testing. After drawing out the measuring line, be sure to use heat insulation material again to plug the test hole, otherwise the temperature in the box can not fall completely, and will lead to condensation or frosting around the outer side of the through-hole.

 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.



Refrigeration Schematic



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 freezer shall operate at an altitude 2,000 m.
- Input voltage: no greater than 10% of the rated voltage.

Caution

- If the ambient temperature is outside the specified range, the freezers can't operate normally. Only operate the units within the specified ambient temperature.
- Do not install the units outdoors. There can be an electrical shock if the unit gets wet by water.
- Do not install the units in oxygen-enriched environment.

Installation Site

The installation site shall meet following requirements for normal operation and best performance of freezer:

- Do not install the freezer in a narrow and confined space as heat may be trapped to increase ambient temperature. Additionally, the unit should not be installed in a space where the entry door way is low to prevent an easy maneuver of the unit for maintenance and operation.
- The floor for the installation site should be solid and flat. It should also be well ventilated and free from direct sunshine.
- The power outlet for the freezer must be a dedicated power outlet. The power plug must be plugged in to the outlet securely.
- Do not twist or jam the power cord.
- If the power cord needs to be extended, the cross section area of the conductor in the extended line should be no less than 3 squared millimeters and no longer than 3 meter.
- Inspect the operating voltage range before operation. If the voltage supply is unstable, install a voltage stabilizer of 2000 W or greater to ensure the supply voltage is within 10% of the rated voltage supply.
- The freezer must be grounded reliably.
- Check the integrity of the socket ground before power up. If it is not grounded appropriately, repair the wiring before installing the unit.
- If the socket is not provided with grounding wire, a new one shall be installed by professional engineers.

Warning

- Do not ground the freezer through gas lines, water lines, telephone lines, or lighting rods as these devices may cause electric shock and danger.
- The power plug and outlet should be located in a place where they can be accessed easily and immediately in case of an emergency. Air vents must be free of obstruction.
- The units used flammable refrigerant, the installation must be in a well-ventilated place. Do not repair the refrigeration system in the installation site, it must be repaired by professional in designated site.

Preparation before using the unit

1. Remove all packaging materials, including the base support

Remove all packaging materials including base support. Remove the tapes and other attachments on the freezer for transportation.



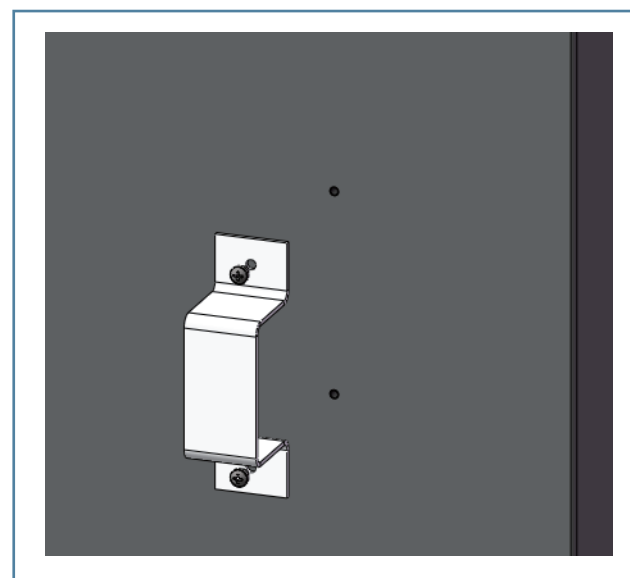
- For EL-F-19H of products, adds each fixed connecting plate between left and right sides and among base supports of freezer. Please disassemble the connecting plate first prior to the disassembly of base supports;
- Please select suitable package disassembly place. Wheels attached can be used to easily move the freezer with package disassembled to the suitable area; And users are suggested to move the freezer to nearby area desired prior to disassembly of package;
- For freezer with package non-disassembled, the forklift or package carrier can be used. When the forklift is used, if the freezer has blocking, please insert the forklift from the bottom of blocking at the front or back of freezer; if the freezer has no blocking, please gently incline the freezer (inclination no greater than 45°) and insert the forklift from flashing seam; and if the package carrier is used, please only pick up at the side of the freezer with blocking.

2. Inspect the accessories

Check the accessories inside the freezer against the packing list. Contact your after-sales service if any discrepancy is found.

3. Install the brackets

Remove bolts from the back of cabinet (EL-F-19H), and then fix the back bracket for rear wall distance with the removed bolts.



The following situations are normal with the freezers.

- When a unit is initially started, the refrigeration process might take some time. The compressor tends to be a bit louder.
- During the normal operation of the unit, there may be a sound of liquid flow. That is a normal sound of the refrigerant flow.
- The displayed temperature and the center temperature of the unit are not necessarily the same. Over time, they tend to approach each other.
- Behind the outer skin of the freezer, there are heat-dissipating tubes. When the unit operates, the surface of the outer skin of the unit might be warm to touch.

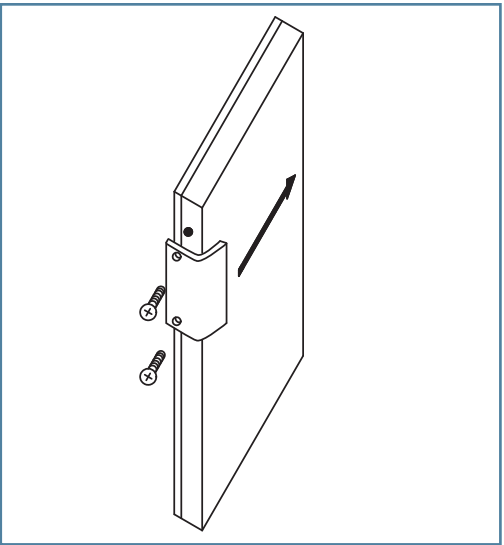


If you have any questions about the operation of the unit, please refer to the following first. If an issue persists, contact your after sales office.
Do not maintain and dismantle the freezer by yourself!

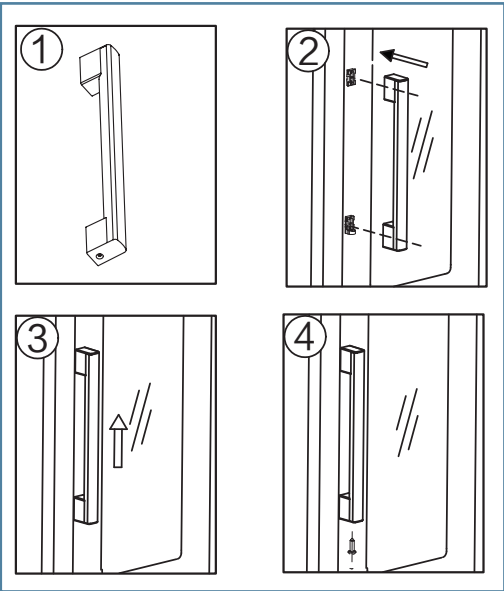
Fault	Troubleshooting
The freezer isn't working.	Check the power connection
	Check the voltage
	Check the temperature setting
Poor cooling	Check the ambient temperature.
	Check the status of the door to make sure it is closed properly.
	Check the strike plate
	Is the temperature setting correct or not?
	Is the freezer far away from direct sunshine?
	Is the freezer near a heat source?
	Are the portholes for testing sealed with insulation materials?
	Are there too many high-temperature articles put into the freezer at one time or not?
High noise	Is the freezer placed on a solid ground or not?
	Is the shell of the freezer exposed to any objects or not?
	Is the freezer leveled with the horizontal stand bar or not?
	Dose the freezer enter a low temperature running status (when the temperature of the freezer is higher due to too many loads, the freezer may make a noise sometimes and such noise will be smaller with the decrease of inner temperature of the freezer)?
	Check if the noise comes from the compressor (the noise of low-temperature equipment compressor is larger than that of household appliance compressor).
	Knocking noise (it may be triggered by the rapid cooling and shrinkage of the internal components inside the equipment and it shall be cooled gradually to avoid excess in decrease of temperature in a short time).

4. Install the Handle

- EL-F-12H
 - ①.Align the handle to the screw hole on the door;
 - ②.Use screw to fix the handle.



- EL-F-19H
 - 1) Place the handle with the hole in the lower position.
 - 2) Align the handle and pedestal on door.
 - 3) Move the handle up.
 - 4) Use the bolts provided to fix the handle



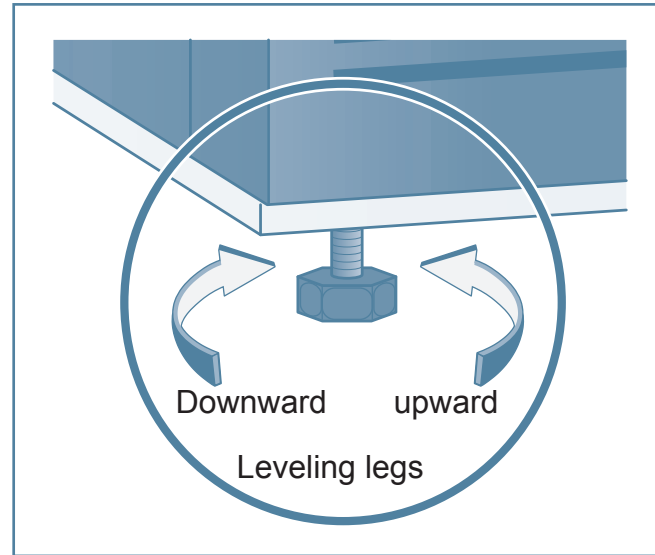
5. Choose an appropriate place for installation

To ensure a proper ventilation of the freezer heat, please install the freezer in a place to satisfy the following requirements.

- There should be a minimum of 30 cm space between the sides, the top of the unit and the surrounding walls and roof.
- The surface should be flat and solid.

6. Leveling of the unit

At the bottom of the upright freezer, there is a leveling leg that allows an adjustment of one of the corners of the unit to secure its placement. Turn the leveling leg accordingly to adjust the height.



7. Leave the unit stand before powering up

Do not turn on the unit immediately after it is situated on site. Keep the unit standing for 24 hours before powering up the unit.

⚠ Caution

- Do not use knife or screwdriver or similar tools with sharp edges to defrost.
- Perform a defrost process once every month. Do not exceed three months between two defrost cycles.

Discarding Disposal of Freezer

⚠ Warning

- If the freezer is left unused in areas where supervision is unavailable for a long time, make sure children will not get close to the freezer and the door can not be completely closed.
- Freezers should be decommissioned by professionals. Remove the door to prevent suffocation or other accidents.

Component Cleaning



- Turn off the power before any maintenance work is performed.
- Do not inhale any airborne particles around the unit while performing maintenance.

Freezer cleaning

- Clean the freezer once a month. Regular cleaning can keep the appearance of the freezer a brand new look.
- Wipe out the dust on shell, chamber and all the accessories of the freezer with a dry cloth. If the freezer is too dirty, remove the dirt with a clean cloth dipped with neutral detergent and wipe out the residues with a wet cloth. Then wipe with a dry cloth.
- Do not pour water on the shell or in the chamber of the freezer. Otherwise, it may damage the insulation of the electrical equipment and may lead to the occurrence of fault.
- Mechanical compressors are hermetically sealed. They do not need lubrication.
- Conduct defrosting or deicing for the inner wall once every month.

Defrosting for inner wall

The freezer needs to be defrosted periodically to ensure a maximum efficiency. Use the shovel provide to remove frost. Please follow the procedures below.

- Remove and transfer the stored products.
- Power down the unit.
- Open all doors fully to naturally thaw out the unit.
- Remove the ice and water from the unit. Open the drain hole to let out the water.
- Clean and dry the unit.
- Restart the unit. When the temperature is stable, place the products back in.

Initial Power up

Follow the rules below to start up a unit:

Keep the unit empty; connect the unit to a dedicated power socket that meets the power requirement of the freezer.



After power up, the audible alarm may sound and this is normal. Press the Alarm button to cancel the alarm on EL-F-4H/12H and any button on EL-F-19H.



Turn on the unit. Set the required operating temperature of the freezer. Do not place any load into the unit yet. Let the unit operate for 24 hours to reach a stable condition before loading any products into the unit.



Load in products into the unit gradually.



- This unit should be managed a dedicated professional person. Operating conditions should be checked and recorded using appropriate methods. When the freezer temperature is out of specification, take proper actions to protect the stored samples. No products should be stored in the unit unless the unit operates without issues.
- Make sure the required storage temperature matches the storage freezer temperature.
- Due to the refrigeration effect, the displayed temperature may be somewhat different from actual temperature and humidity. This is a normal process.
- The drawer at the top part of the freezer is warmer than the lower drawers. Sensitive materials should be placed in the lower drawers.



- Warm products should only be loaded into the units in batches to reduce the load to the cooling system. Overloading the system can cause the freezer temperature to rise and the compressor to work under undesirable stress, which can shorten the life of the system.
- Do not use a mechanical tool to remove frost.
- Do not damage the refrigeration lines.
- Do not use an electrical apparatus in the refrigerator without proper approval.

Operation after power outage

The freezers can retain their operation parameters when there is power outage. When the power recovers, they will continue to operate based on the saved parameters.



Warning

- When there is a loss of the power supply, the cooling system will stop. The temperature inside the freezer will start to warm up. If the power loss is prolonged, move the stored products to a safe place to avoid damage.
- Once there is a power outage, the system should only be repowered after a minimum of 5 minutes delay.
- If the freezer is to be out of service for a long time, please unplug the power cord from the power socket.
- If the freezer is to be placed without supervision, make sure it is not accessed by children. The door should not be close completely.

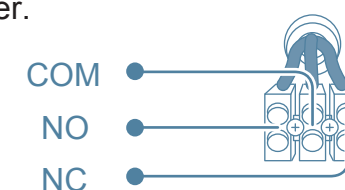
Automatic Alarm Resumption

- When the buzzer alarm is activated, press the “Alarm” button(any key for EL-F-19H freezer) to cancel the audible alarm.(The flashing alarm and remote alarm will not be stopped)
- If the alarm condition persists in 30 minutes, the audible alarm will resume (EL-F-4H/30L508) .

Remote Alarm Trminal (EL-F-4H/EL-F-19H)

EL-F-4H and EL-F-19H are equipped with remote alarm terminals:

- Remote alarm terminal is installed on the top electric cabinet of freezer. Alarm signal is sent by the terminal and the bearing capacity of the terminal is DC 30 V, 2 A.
- Contact output:
Remote alarm signal can be activated via the NC or NO terminals.



Caution

Customers are responsible for connecting the remote alarm device onto the terminals.

EL-F-12H

- When the temperature perceived by sensor exceeds $\pm 5^{\circ}\text{C}$ than the setting temperature or setting alarm temperature, the red light flashes and alarm is given with buzzing.
- When short circuit, open circuit or fault occurs on temperature sensing probe, “F1” will be on temperature value display area; the freezer switches to protection mode, and the compressor switched to the fixed cycle of power on for 20 min and power off for 5 min, the red light flashes and the alarm sound loses its efficacy.
Suggestion: shut off the power when it is judged that the temperature sensing probe goes wrong, and firstly check whether the connecting line of temperature sensing probe is flexible.
- when the temperature perceived by sensor is higher than 34°C , “HH’ is displayed, when the temperature perceived by sensor is lower than -45°C , “LL’ is displayed.

EL-F-19H

The fault cause can be queried according to the below table.

When the temperature perceived by sensor exceeds $\pm 10^{\circ}\text{C}$ than the setting temperature, the alarm fault code flashes and alarm is given with buzzing.

Alarm	Status	Fault Code	Indication	Buzzer
High temperature alarm	When the inner temperature is higher than the setting temperature of alarm (default to -15°C)	rH	rH code and inner temperature are on the display screen alternatively after time delay(default to 15min)	Make buzzing alarm after time delay(default to 15min)
Low temperature alarm	When the inner temperature is lower than the setting temperature of alarm (default to -35°C)	rL	rL code and inner temperature are on the display screen alternatively after time delay(default to 15min)	Make buzzing alarm after time delay(default to 15min)
Sensor is abnormal	Fault occurs on the main sensor in freezer	E1	E1 code is displayed	Buzzing alarm

Component Names

EL-F-4H



EL-F-12H



EL-F-4H

The fault cause can be queried according to the below table.

Alarm	Status	Fault Code	Indication	Buzzer
High temperature alarm	When the inner temperature is higher than the setting temperature of alarm(default to -20℃)	E00	Alarm indicator flashes after time delay(t1,default to 15min)	Make buzzing alarm after time delay(t1,default to 15min)
Low temperature alarm	When the inner temperature is lower than the setting temperature of alarm(default to -30℃)	E01	Alarm indicator flashes after time delay(t1,default to 15min)	Make buzzing alarm after time delay(t1,default to 15min)
Communication fault	The display board and the power board are unable to send and receive data for 5 times continuously	E03	Alarm indicator flashes and E03 code is displayed	Buzzing alarm
Sensor is abnormal	Fault occurs on the main sensor in freezer	E04	Alarm indicator flashes and E04 code is displayed	Buzzing alarm
Door ajar alarm	The door is opened or not closed tightly	E06	Alarm indicator flashes after time delay(dAt,default to 2min)	Make buzzing alarm after time delay(dAt,default to 2min)

For a beep alarm, press the “Alarm” key could cancel it.

⚠ Caution

- Press the “Alarm” key when any alarm sounds, corresponding fault alarm code will be shown. For more than one alarm is initiated, each code of alarm fault will be shown for 1s respectively.
- Query of the recent max. & min. actual temperature values inside the box
- Press "Alarm" key and “+”key simultaneously to query recent max. actual temperature value, release and return to display the temperature inside the box.
- Press "Alarm" key and “-”key simultaneously to query recent min. actual temperature value, release and return to display the temperature inside the box.

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- Temperature adjustment

After pressing "▲" and "▼" for 3 seconds, the setting temperature would begin to flash, and then press the "▼" once, the temperature would be reduced by 1℃ until -25℃, and for one more press, it will be back to -10℃; and then press the "▲" once, 1℃ would be added until -10℃, and for one more press, it will back to -25℃. it would exit from the setting status and then display the normal temperature if no operation is performed for 5 seconds.

- Temperature setting of hi-low temperature alarm

The default of hi-low temperature alarm is $\pm 5^{\circ}\text{C}$ of setting temperature, and the steps should be followed when setting it:

After pressing "Alarm" + "▲" for 3 seconds, AH (high temperature) would begin to flash, and then press the "▼" once, the temperature would be reduced by 1℃ until 1, and for one more press, it will be back to 10; and then press the "▲" once, 1℃ would be added until 10, and for one more press, it will back to 1; it would exit from the setting status and save the setting, and then display the normal temperature if no operation is performed for 5 seconds.

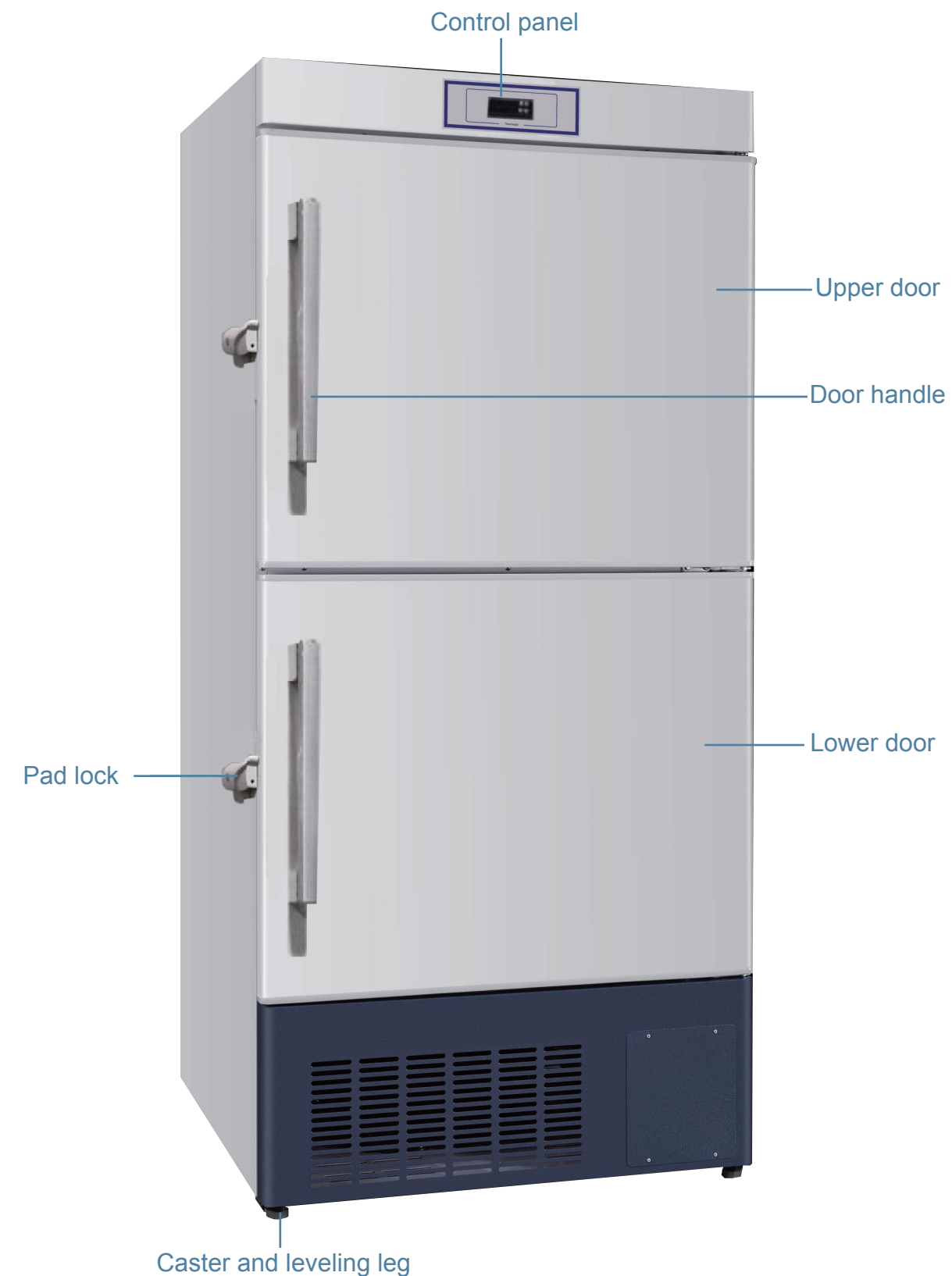
After pressing "Alarm" + "▼" for 3 seconds, AL (low temperature) would begin to flash, and then press the "▼" once, the temperature would be reduced by 1℃ until 1, and for one more press, it will be back to 10; and then press the "▲" once, 1℃ would be added until 10, and for one more press, it will back to 1; it would exit from the setting status and save the setting, and then display the normal temperature if no operation is performed for 5 seconds.

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- Temperature adjustment

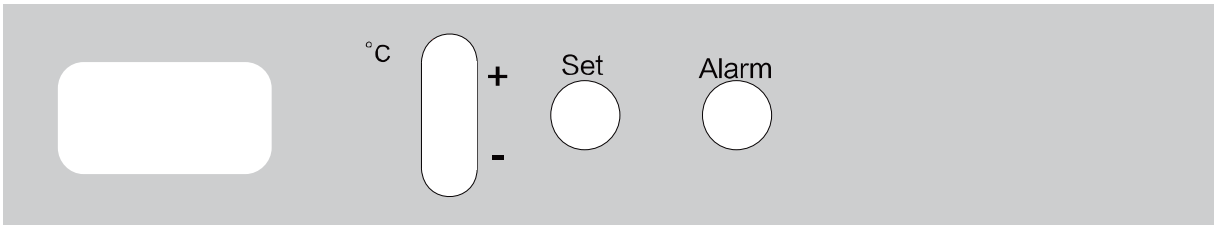
Press the "Set" key for 3s to enter the user menu; after the "St" is displayed, press the "Set" key again to display the parameter value of "St". In such case, you may modify the set value of the temperature by operating the "⬆" key or "⬇" key, and then press the "Set" key to save the value and then back.

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Control Panel

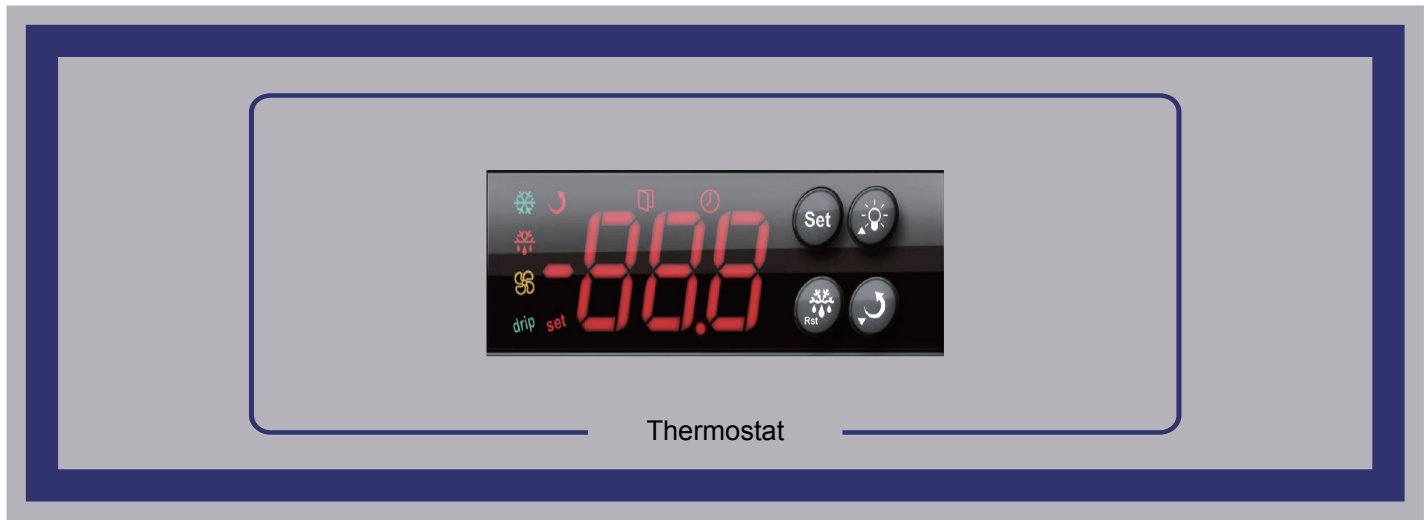
EL-F-4H



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EL-F-19H



EL-F-4H

• Temperature set

The preset box control temperature of the freezer before factory delivery is -25℃ .

To set up the temperature inside the box, press and hold “Set” button for 5 seconds display “Ts” then press “Set” button and the setting temperature begins to flash. The temperature will be increased or reduced by 1℃ upon each press of “+” button or “-” button. Press “Set” button after reaching the set value, the parameter will be changed and saved. Press “Alarm” button to exit the parameter setting and display the current inner temperature. After runing for a period of time, the freezer box temperature will reach the set temperature.

• More parameters set

Press and hold “Set” button for 5 seconds display “Ts” then press of “+” button or “-” button, display other parameters then press “Set” button and the parameter begins to flash. The value will be increased or reduced by press of “+” button or “-” button. Press “Set” button after reaching the set value, the parameter will be changed and saved. Press “Alarm” button to exit the parameter setting and display the current inner temperature.

Parameters code	Parameter meaning	Min.value	Max.value	Unit	Default value
Ts	Control temperature setting	-30	-10	℃	-25
ALH	High-temperature alarm value setting	Ts+1	Ts+6	℃	-20
ALL	Low-temperature alarm value setting	Ts-6	Ts-1	℃	-30
Fd	The interval time between buzzer cancellation and restart	10,20,30		Minute	30
dAt	Delay time of door ajar beep alarm	1	12	Minute	2
t1	Delay time of high/low temperature alarm	0	20	Minute	15
TT	Temp unit	0C (Celsius)	0F (Fahrenheit)	/	0C



Press the “Set” key to save the parameter when you adjust it.