

# Haier



## Deep Freezer

## Operation Manual

Certificate of Quality

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Checker:



Model:

- DW-25L92
- DW-25L262
- DW-25L300
- DW-40L92
- DW-40L262
- DW-40L278
- DW-40L278-ARQ
- DW-40L348
- DW-40L508
- DW-40L420F
- DW-40W100
- DW-40W255
- DW-40W380

Haier Medical and Laboratory Products Co., Ltd.  
Address: Haier Industrial Park, Economic Technology Development  
Zone. Qingdao 266510.P.R.China  
Web:www.haiermedical.com  
Version:1st,2017  
Dedicated code:0270501010  
V13026



- 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 。

## Global Warming Potential

Model	Rated voltage ( VAC )	Rated frequency ( Hz )	CO <sub>2</sub> equivalent (Tonnes)
DW-40L92	220~240	50	0.588
DW-40L92	220~240	60	0.588
DW-40L262	220~240	50	0.863
DW-40L262	115	60	0.784
DW-40L262	220~240	60	0.863
DW-40L508	208~230	60	0.961
DW-40W100	220~240	50	0.431
DW-40W100	115	60	0.392
DW-40W255	220~240	50	0.902
DW-40W380	220~240	50	0.772
	208~230	60	0.772

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

GWP=global warming potential

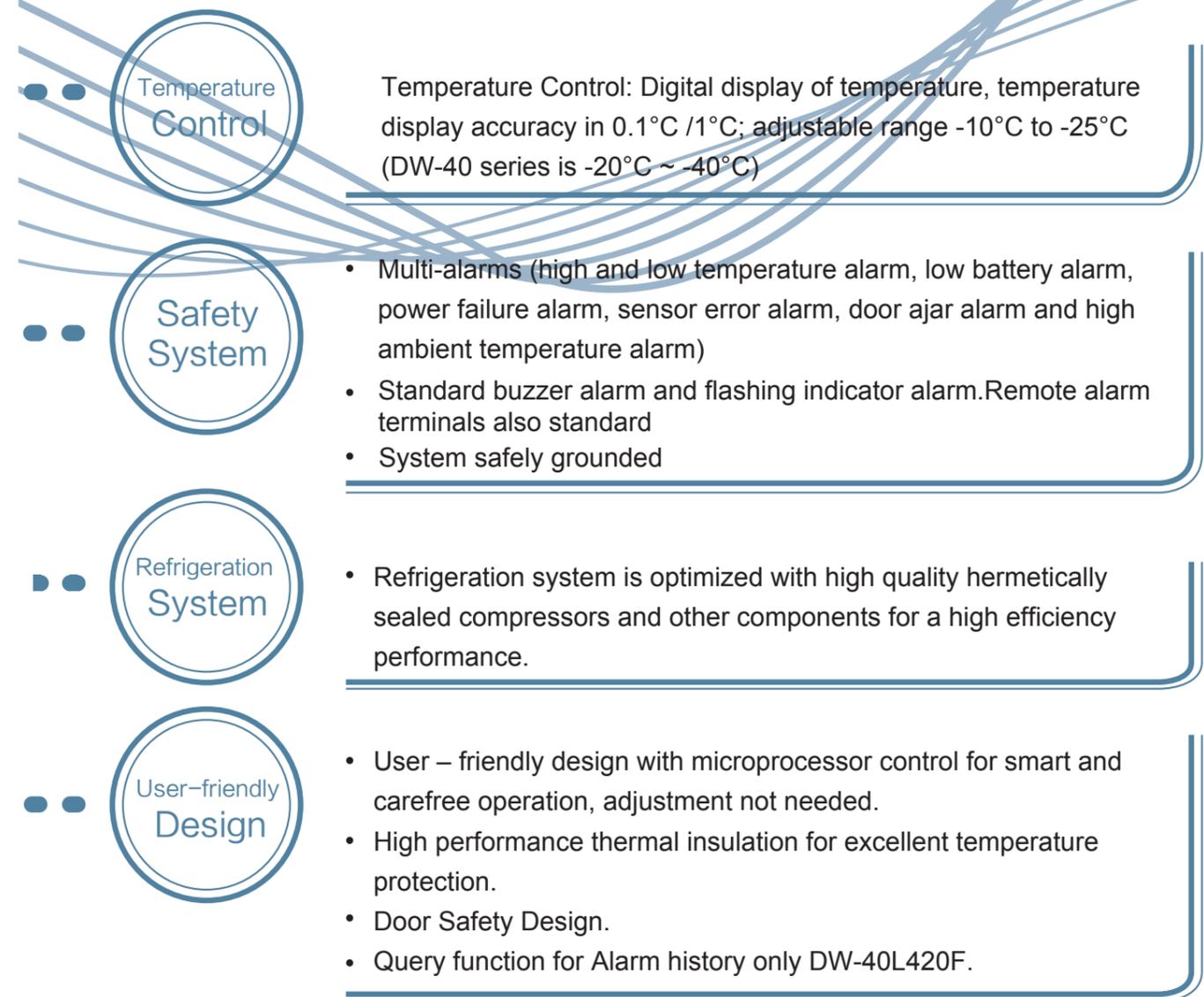
Refrigerant type	GWP
R404A	3922
R600a	20
R290	20
R23	14800



Name	DW-40W100	DW-40W255	DW-40W380	
Manual	1	1	1	
Plastic bag	1	1	1	
Key	2	2	2	
Ice scraper	1	1	1	
Storage baskets	1	2	6	

## 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.



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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**Packing List**

Name	DW-25L92	DW-25L262/300	DW-40L92	DW-40L262
Manual	1	1	1	1
Plastic bag	1	1	1	1
Pad lock	1	1	1	1
Ice scraper	1	1	1	1
Drawer	3	7	3	7
Handle kits	1	1	1	1
Brackets (for rear wall distance)	/	/	/	/
Name	DW-40L278	DW-40L348	DW-40L508	DW-40L420F
Manual	1	1	1	1
Plastic bag	1	1	1	1
Key	2	/	/	4
Ice scraper	1	1	1	1
Shelf / drawer	0/6	0/12	0/10	5/0
Pad lock / Handle kits	1/1	2/2	2/2	/
Brackets (for rear wall distance)	2	2	2	/
Storage basket	/	/	/	25

## Specification

Name	Deep Freezer			
Model	DW-40W100	DW-40W255	DW-40W380	
Exterior dimensions (W X D X H) (mm)	680×600×805	1243×633×838	1550×633×838	
Interior dimensions (W X D X H) (mm)	500×385×625	1040×430×605	1376×457×625	
Effective volume	100L	255L	380L	
Door	Solid door			
Insulation	CFC-Free foamed-in-place urethane			
Compressor	High Quality Hermetically sealed compressor			
Basket / loading of each	1 / max:10kg	2 / max:10kg	6 / max:10kg	
Refrigeration	Direct cooling			
Exterior / Interior	Spraying steel plate / aluminium plate with flax texture			
Condenser / evaporator	Wire and tube type / coil tube type			
Temperature control	Microprocessor controlled			
Refrigerant	R404a 110g	R404a 100g	R404a 230g	Mix refrigerant 162g
Weight	43kg	70kg	82kg	
Temperature range	-20℃~-40℃		-20℃~-40℃	
Voltage	220-240V~/50Hz	115V~/60Hz	220-240V~/50Hz	220-240V~/50Hz 208-230V~/60Hz
Rated power / current	260W/2.5A	255W/5.0A	410W/2.5A	550W/3.4A 550W/3.4A
Noise Level	35dB(A)		41dB(A)	45dB(A)
Foaming Agent	CP/IP		CP/IP	CP/IP
Climate Type	4		4	4
Electrical protection type	I		I	I
Power supply connection	Y		Y	Y
Access port	1		1	/
Alarm	High/low temperature alarm, sensor error alarm and power failure alarm			
Duration time of power outage alarm	18 hours (when battery is fully charged)			

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

Dear Customers,

Thank you for choosing Haier 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

The upper and lower limits of temperature shall be indicated adjacent to the upper and lower horizontal lines.	Symbol for "Manufacture"	No sitting	Grounding mark	CE 0197 Complied with the requirements of MDD 93/42/EEC annex V
Symbol for "Consult instructions for use"	Symbol for "Date of manufacture"			
EC REP European Authorized Representative	Haier Biomedical UK Email: <a href="mailto:uksales@haierbiomedical.com">uksales@haierbiomedical.com</a> TEL: +44(0) 1825 744 696			
When power to the unit is on, switch on the battery charger. When the unit is not in use switch power off and then switch off the battery charger..	Charge battery switch	<b>WARNING!</b> ELECTRIC CABINET CONTAINS CONTROL PANEL CONTACTOR ETC.		

### NOTICE!

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

### 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



- 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 4,000W should be installed with the refrigerator.
- ! If the power cord needs to be lengthen, the cross section area of the extension line's conductor should be at least 2 mm<sup>2</sup> 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 16A 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 units (DW-25L92/262, DW-40L92/262) without main power switch must be with the fused power plug.**
- ! 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 overflowed 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.

## Specification

Name	Deep Freezer
Model	DW-40L420F
Exterior dimensions (W X D X H)(mm)	950×890×1900
Interior dimensions (W X D X H) (mm)	685×610×1028
Effective volume	420L
Door	Solid door
Insulation	CFC-Free foamed-in-place urethane
Compressor	High Quality Hermetically sealed compressor
shelves / Baskets	5 / 25 the loading of each shelf: max 36kg
Refrigeration	Positive, forced-air circulation
Exterior / Interior	Spraying steel plate / stainless steel
Condenser / Evaporator	Wire and tube type
Temperature control	Microprocessor controlled
Refrigerant	R290 95g
Weight	195kg
Temperature range	-20℃~-40℃
Voltage	220-240V~/50Hz
Rated power / current	460W/4.0A
Defrost power / current	1000W/5.8A
Noise Level	46dB(A)
Foaming Agent	CP/IP
Climate Type	4
Anti-shock Safety Classification	I
Power connection type	Y
Access port	1
Alarm	High/low temperature alarm, sensor error alarm, power failure alarm, low battery alarm, door ajar alarm and historical alarm queries
Duration time of power outage alarm	48 hours (when battery is fully charged)
Rechargeable battery	DC 12 V rechargeable battery

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

## Specification

Name	Deep Freezer			
Model	DW-40L278/278-ARQ	DW-40L348	DW-40L508	
Exterior dimensions (W X D X H) (mm)	745×675×1810	765×810×1860	915×810×1860	
Interior dimensions (W X D X H) (mm)	520×435×1230	535×610×1228	685×610×1228	
Effective volume	278L	348L	490L	
Door	Solid door			
Insulation	CFC-Free foamed-in-place urethane			
Compressor	High Quality Hermetically sealed compressor			
Drawers	6	12	10	
Refrigeration	Direct cooling			
Exterior/Interior	Spraying steel plate / PS plate			
Condenser/evaporator	Wire and tube type			
Temperature control	Microprocessor controlled			
Refrigerant	R290 90g	R290 140g	R290 145g	R404a 245g
Weight	115kg	137kg	164kg	
Temperature range	-20℃~-40℃	-20℃~-40℃	-20℃~-40℃	
Voltage	220-240V~/50Hz	220-240V~/50Hz	220-240V~/50Hz	208-230V~/60Hz
Rated power / current	275W/3.1A	280W/2.9A	285W/2.9A	430W/2.9A
Noise Level	40dB(A)	41dB(A)	41dB(A)	45dB(A)
Foaming Agent	CP/IP	CP/IP	CP/IP	
Climate Type	4	4	4	
Anti-shock Safety Classification	I	I	I	
Power connection type	Y	Y	Y	
Access port	1	1	1	
Alarm	High/low temperature alarm, sensor error alarm, power failure alarm, low battery alarm, high ambient temperature alarm and door ajar alarm (only applicable to DW-40L278)			
Duration time of power outage alarm	48 hours (when battery is fully charged)			
Rechargeable battery	DC 12 V rechargeable battery			

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

-  Do not store corrosive articles such as 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.
-  The appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
-  If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
-  Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
-  If your cabinet is to be 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.

- Battery

A rechargeable battery is installed on certain models of freezers. The battery will power the alarm system should there be a loss of electric power to the freezer. However, customers should also pay attention to the following related to the battery.

a) DW-25L92/262/300 and DW-40L92/262 series of freezers are not equipped with a rechargeable battery. Therefore, these freezers do not have a power outage alarm.

b) DW-25W198/300/388/518 and DW-40W100/255/380 series of freezers are equipped with a rechargeable battery. The battery is not replaceable. It is automatically charged by the board. An operation of 24 hours charges the battery fully. Once there is a loss of electrical power to the unit, the battery can sustain the alarm system for 18 hours.

c) DW-40L278/348/508/420F series of models are equipped with one replaceable battery in the electrical compartment. There is also a battery charge switch. In normal operation, set the switch to “I” position to ensure the battery is charged and the battery is ready to operate the alarm system when there is a power outage. When the unit is in storage, unplug the power cord and turn the battery switch to “O” position.

- 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 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.

- Lock of the upright freezer

The lock of the upright freezer shall be locked when the freezer is powered on, or it will cause cold air leakage and frosting which will affect the performance

## Specification

Name	Deep Freezer			
Model	DW-25L262	DW-25L300	DW-40L262	
Exterior dimensions (W X D X H) (mm)	657×685×1665			
Interior dimensions (W X D X H) (mm)	480×465×1430			
Effective volume	262L	300L	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	R600a 90g	R404a 220g	R404a 200g
Weight	88kg	88kg	88kg	
Temperature range	-10℃~-25℃	-10℃~-25℃	-20℃~-40℃	
Voltage	220-240V~/50Hz	220-240V~/50Hz	220-240V~/50/60Hz	115V~/60Hz
Rated power / current	90W/0.7A	90W/0.7A	400W/4.8A	600W/7.5A
Noise Level	34dB(A)	34dB(A)	44dB(A)	
Foaming Agent	CP/IP			
Climate Type	4			
Anti-shock Safety Classification	I			
Power connection type	Y			
Access port	1			
Alarm	High/low temperature alarm, sensor error alarm			

Note: under the ambient temperature of 25°C, the minimum temperature inside the empty equipment of the product of DW-40L series could achieve -40°C; and under the ambient temperature of 32°C, the minimum temperature inside the empty equipment could achieve -35°C.

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

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

## Specification

Name	Deep Freezer	
Model	DW-25L92	DW-40L92
Exterior dimensions (W X D X H) (mm)	597×610×860	
Interior dimensions (W X D X H) (mm)	465×440×645	
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	
Temperature control	Microprocessor controlled	
Refrigerant	R600a 52g	R404a 150g
Weight	46kg	46kg
Temperature range	-10℃~-25℃	-20℃~-40℃
Voltage	220-240V~/50Hz	220-240V~/50Hz
Rated power / current	77W/0.35A	220W/2.1A
Noise Level	27dB(A)	40dB(A)
Foaming Agent	CP/IP	
Climate Type	4	
Anti-shock Safety Classification	I	
Power connection type	Y	
Access port	/	
Alarm	High/low temperature alarm, sensor error alarm	

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

- Cleaning and Defrosting of the freezer
  - 1) DW-40L freezers 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.



Meaning of crossed –out wheeled dustbin:  
 Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your 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.

## Installation environment

- Ambient temperature: 10°C to 30°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:

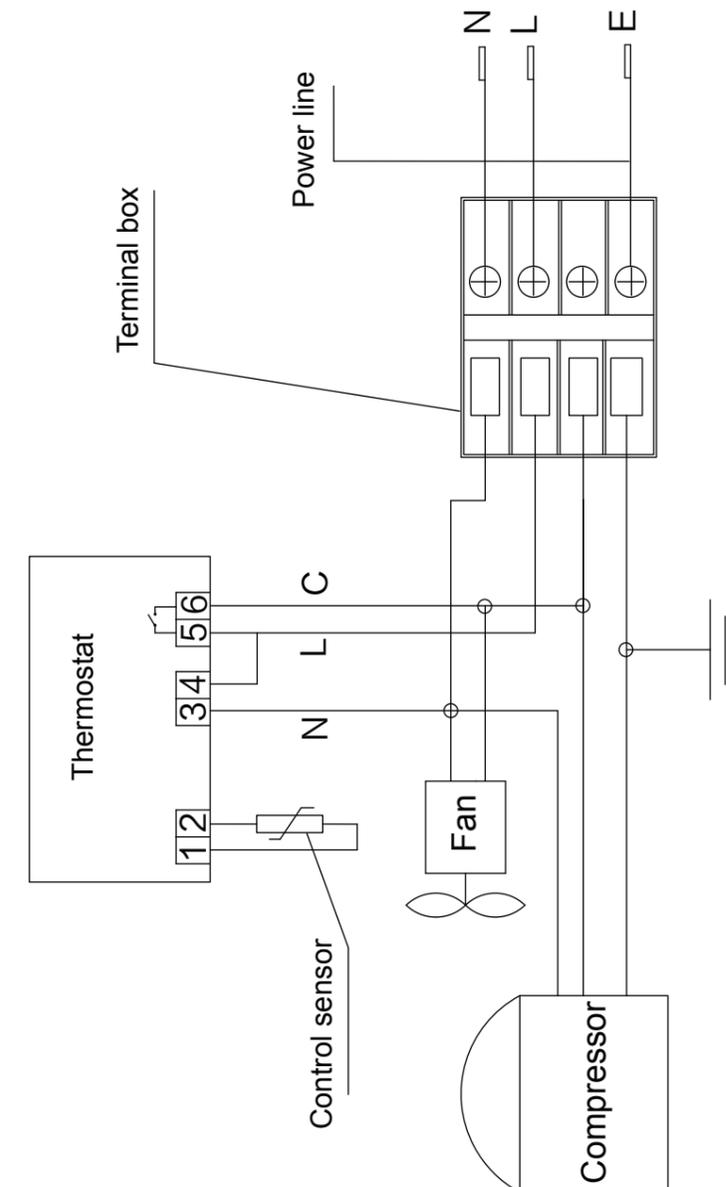
- Do not install the freezer in a narrow and confined space as heat may be trapped to increase ambient temperature. Additionally, the unit should not be installed in a space where the entry door way is low to prevent an easy maneuver of the unit for maintenance and operation.
- The floor for the installation 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 4000 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.



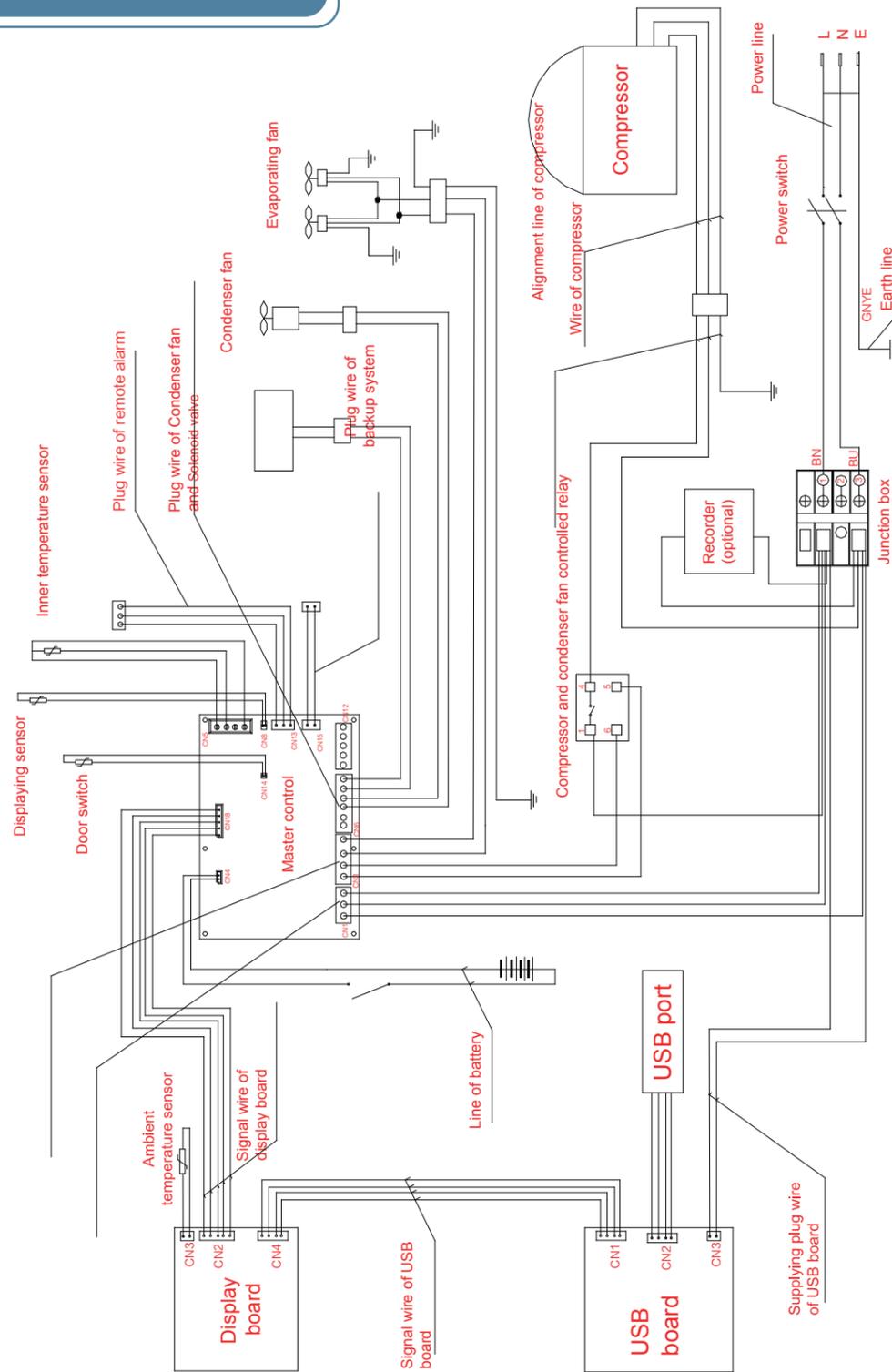
### Warning

- 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.**

Circuit diagram (chest type)



## Circuit diagram ( DW-40L420F )



## 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.

#### ⚠ Caution

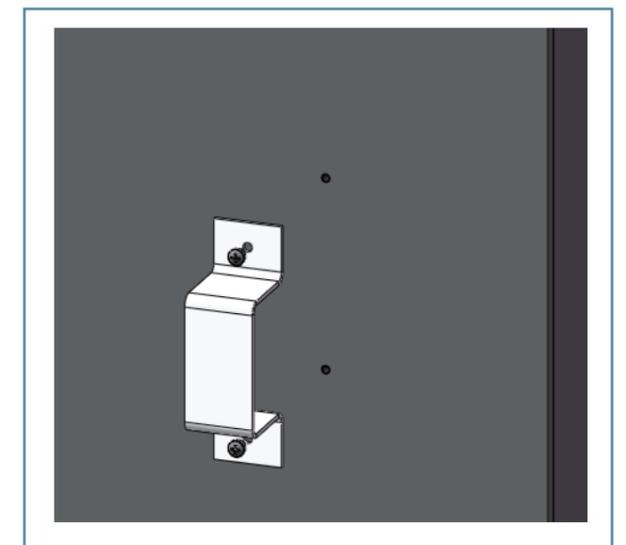
- For DW-40L278/348/508/420F series of products, add each fixed connecting plate between left and right sides and among base supports of freezer. Please disassemble the connecting plate first prior to the disassembly of base supports;
- Please select suitable package disassembly place. For DW-25L262/300 and DW-40L262/278/348/508/420F series of products, wheels attached can be used to easily move the freezer with package disassembled to the suitable area; while for DW-25L92, DW-40L92 and horizontal type series, there are no movable wheels at the bottom of freezer. 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 (DW-40L278/348/508), and then fix the back bracket for rear wall distance with the removed bolts.



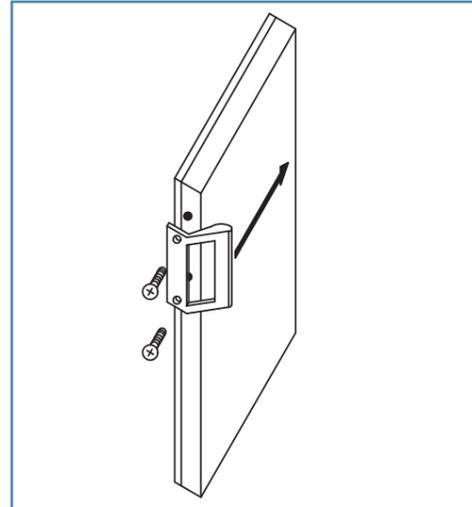
#### 4. Install Lateral Lock Catch

For DW-25L92 Series or DW-40L92 Series, please take out the suite of lock catch from the accessory and install the lock catch on the left side of the box according to “Lock Catch Installation Instruction leaflet”.

#### 5. Install the Handle

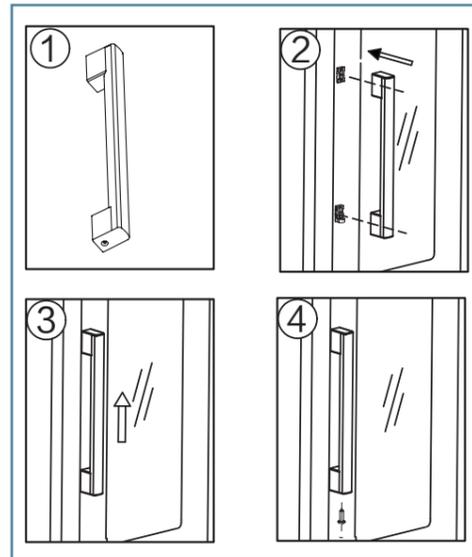
- DW-25L92/262/300、DW-40L92/262

- ①.Align the handle to the screw hole on the door;
- ②.Use screw to fix the handle.



- DW-40L278/348/508/420F

- 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

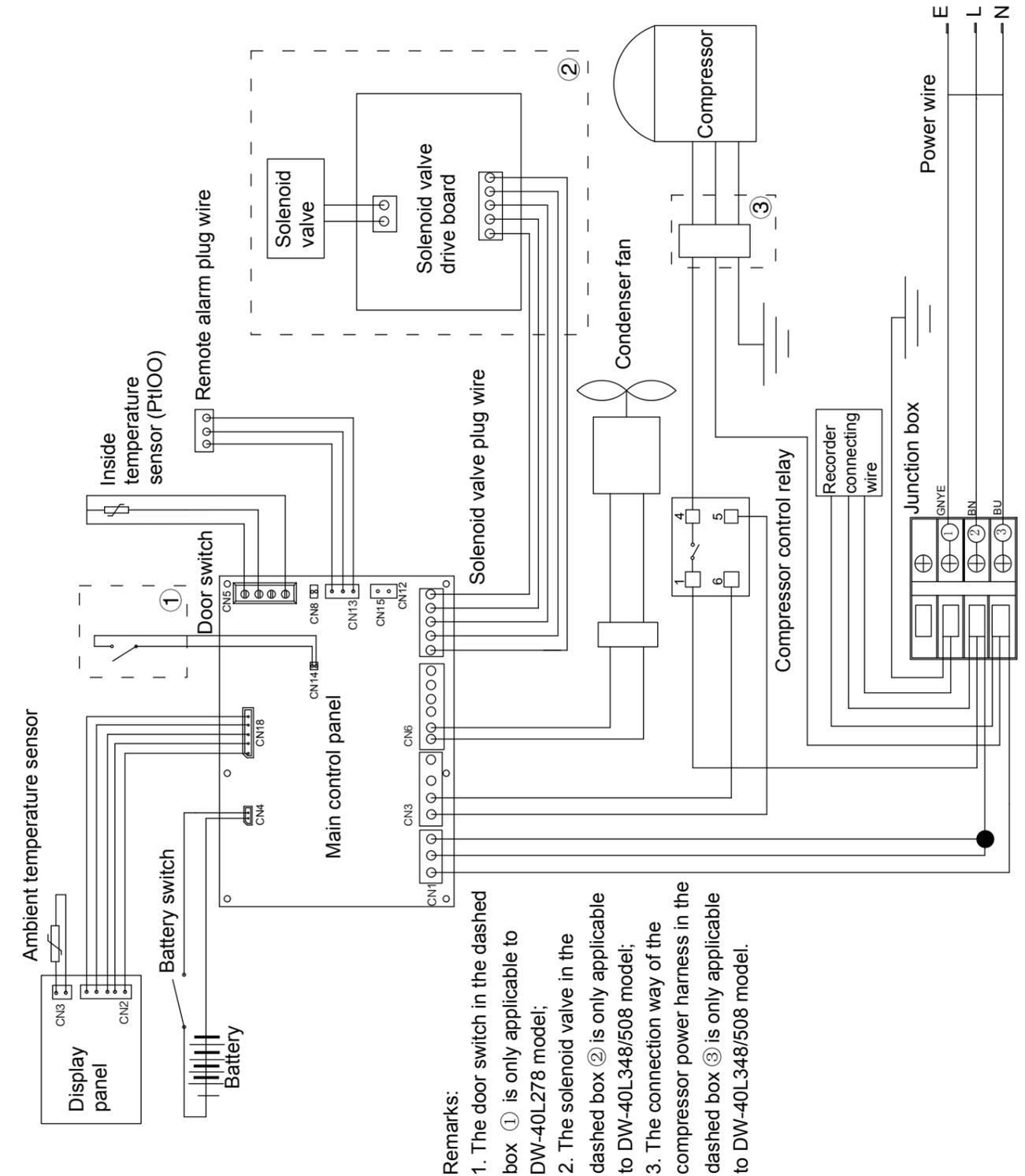


#### 6. Choose an appropriate place for installation

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

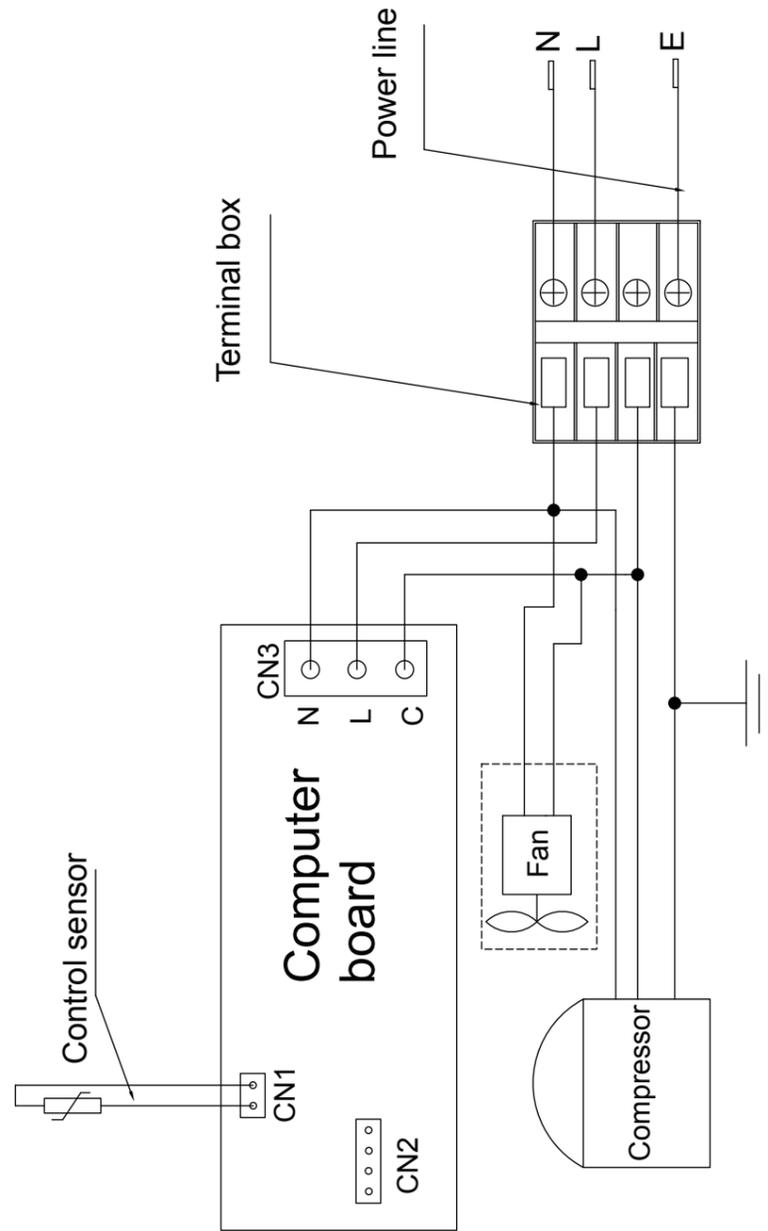
- There should be a minimum of 30 cm space between the sides, the top of the unit and the surrounding walls and roof.
- For chest models, there should be a minimum space of 30 cm surrounding the unit and there should be a 60 cm space above the unit to ensure the lid can be opened properly.
- The surface should be flat and solid.

Circuit diagram(DW-40L278/348/508)



Remarks:  
 1. The door switch in the dashed box ① is only applicable to DW-40L278 model;  
 2. The solenoid valve in the dashed box ② is only applicable to DW-40L348/508 model;  
 3. The connection way of the compressor power harness in the dashed box ③ is only applicable to DW-40L348/508 model.

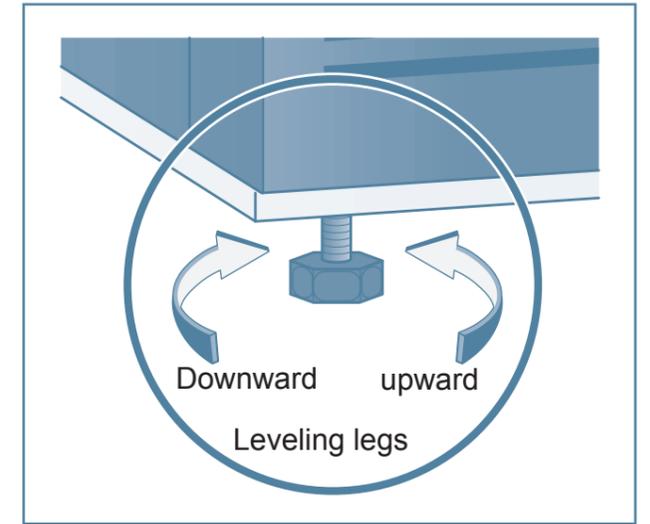
Circuit diagram(DW-25L92/262/300、DW-40L92/262)



Note: DW-25L series of products are not equipped with the fan in the frame with dotted lines.

7. 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.



8. 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.

## Initial Power up

Follow the rules below to start up a unit:

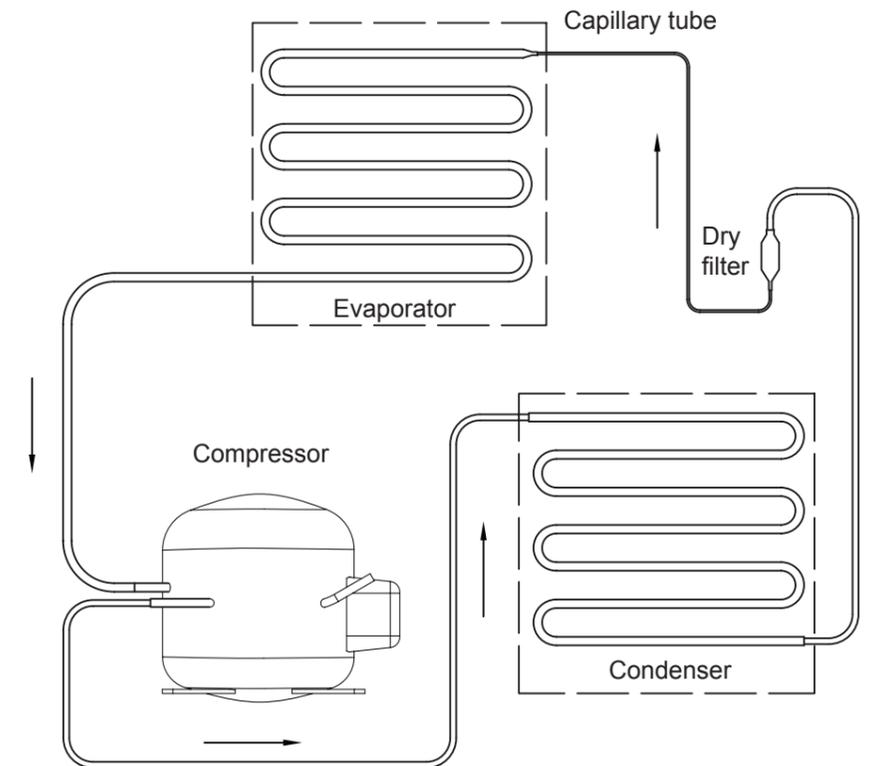
Keep the unit empty; connect the unit to a dedicated power socket that meets the power requirement of the freezer.

After power up, turn on the battery switch of the units to charge the battery. The audible alarm may sound and this is normal. Press the Silence button to cancel the alarm on DW-25L92/262/300 and DW-40L92/262, and any button on chest model.

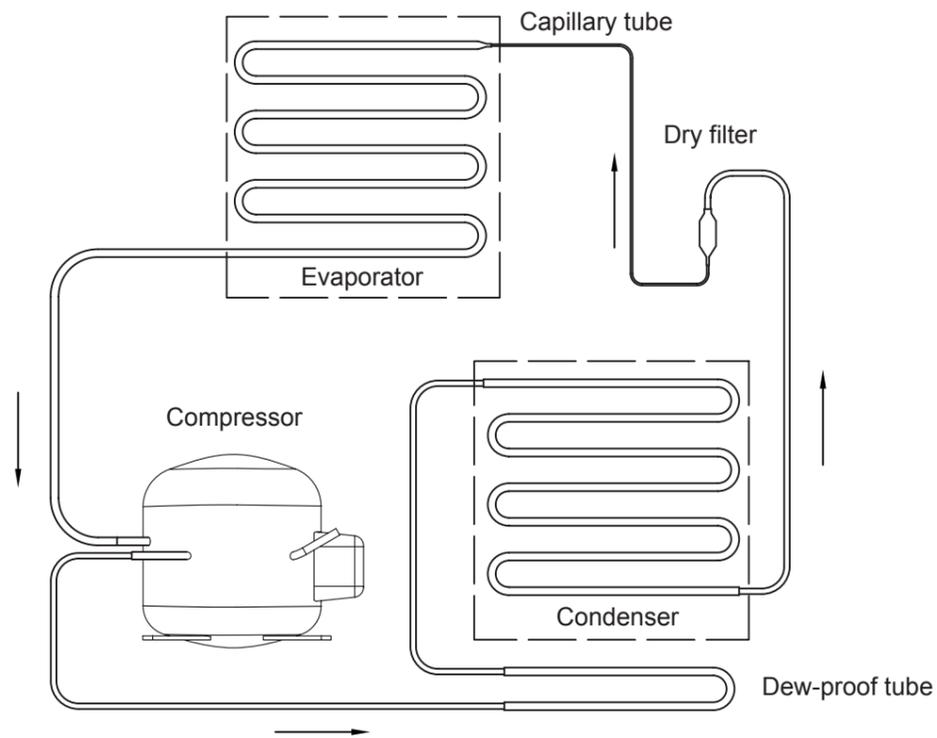
Turn on the unit. Set the required operating temperature of the freezer. Do not place any load into the unit yet. Let the unit operate for 24 hours to reach a stable condition before loading any products into the unit.

Load in products into the unit gradually.

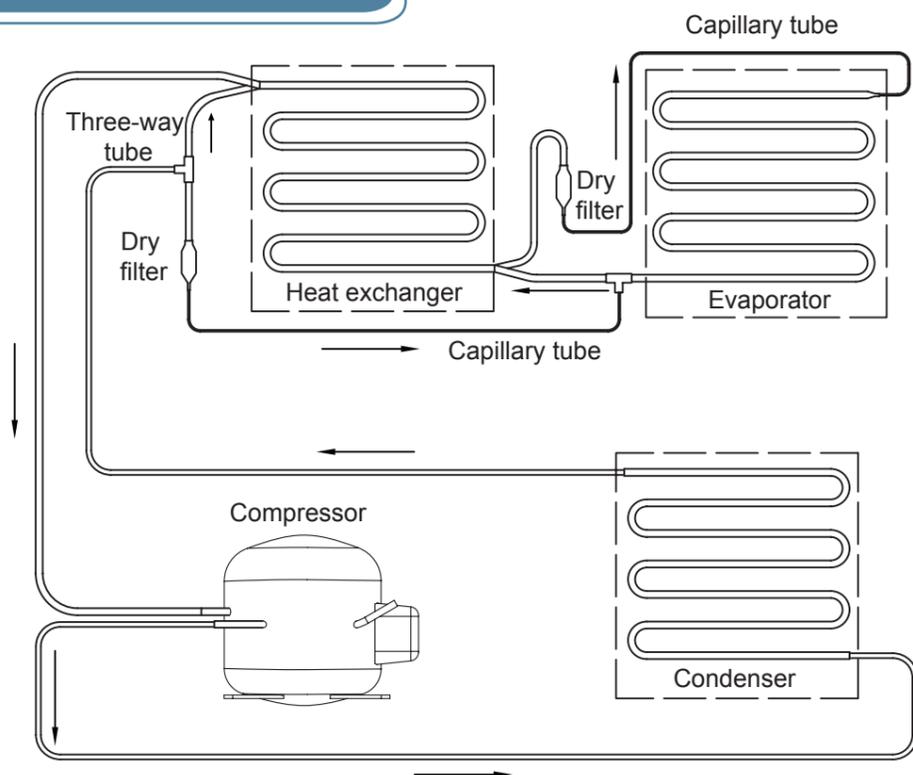
## Refrigeration Schematic (other chest type)



Refrigeration Schematic (other upright type)



Refrigeration Schematic (DW-40W380)



-  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 and turn off the battery switch.
- If the freezer is to be placed without supervision, make sure it is not accessed by children. The door should not be close completely.

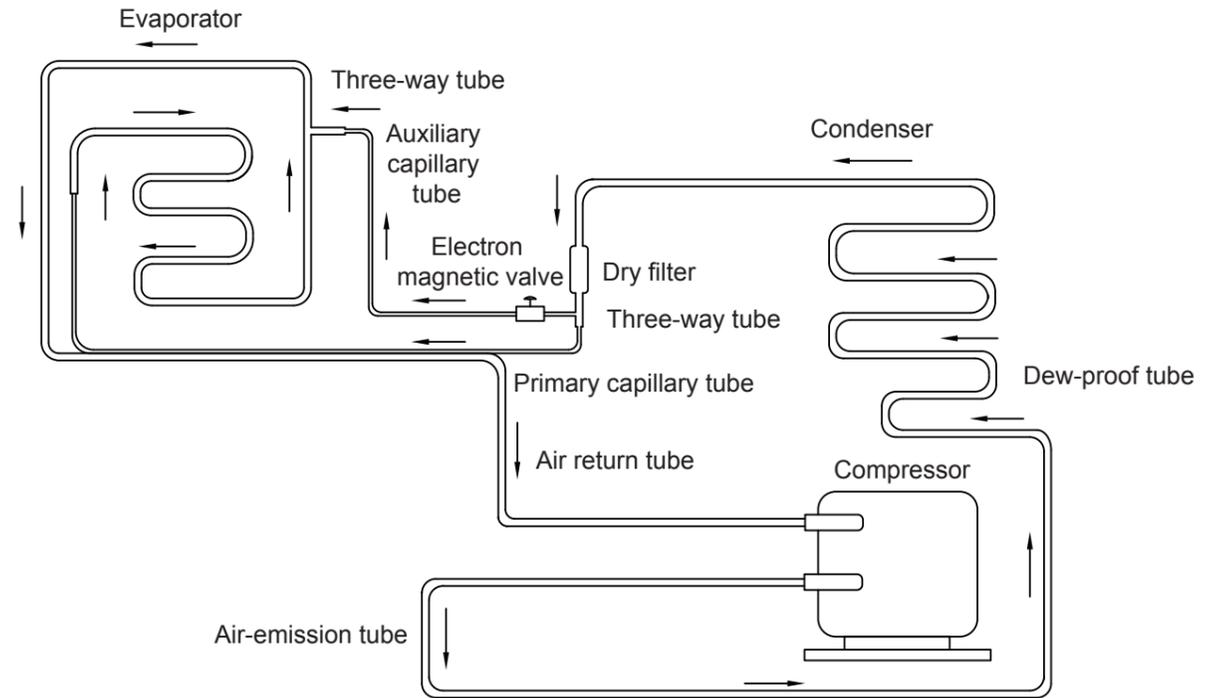
Component Names

DW-25L92/262/300、DW-40L92/262

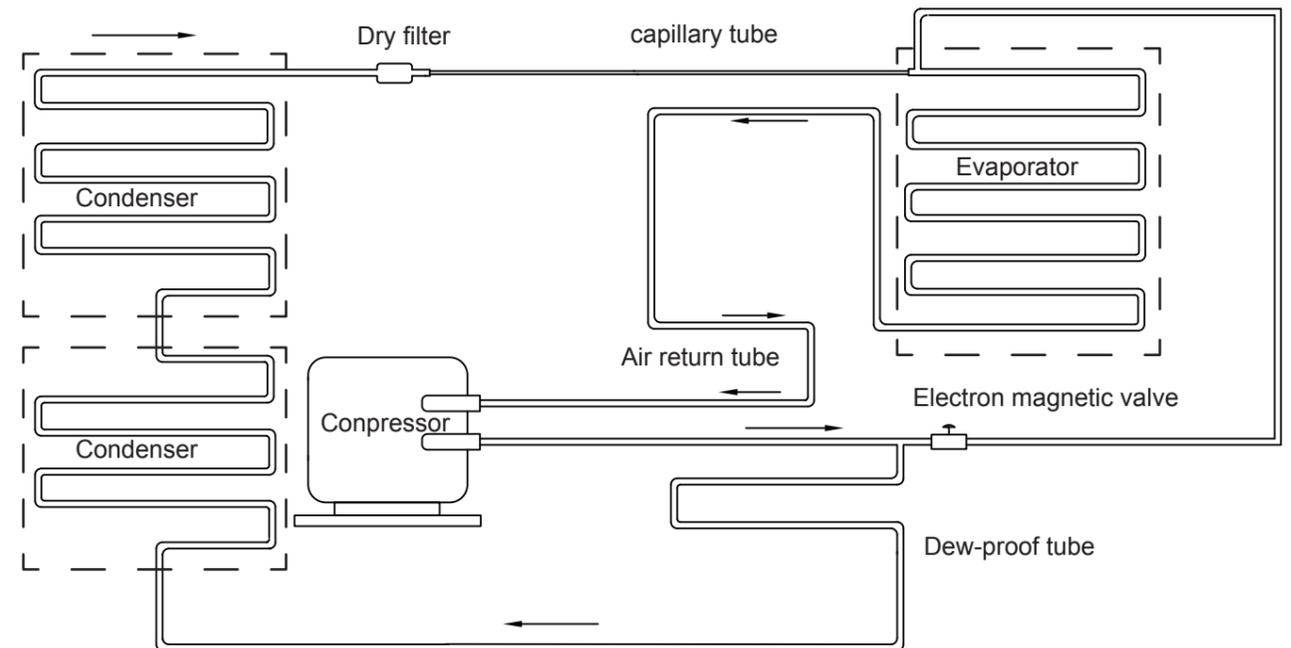


DW-25L92 and DW-40L92 models do not have any access hole for testing. Storage drawers are see-through type.

Refrigeration Schematic (DW-40L348/508)



Refrigeration Schematic (DW-40L420F)



**Caution**

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.

DW-40L278



**Caution**

Battery switch is above the product back.



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?
High noise	Are there too many high-temperature articles put into the freezer at one time or not?
	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).	



The drawers in the upper and lower cabins of DW-40L348 are the same, and those of DW-40L508 are different.

The freezer has one rechargeable battery, which is recyclable. When a rechargeable battery is being replaced, please dispose of it properly.

## Position of Battery

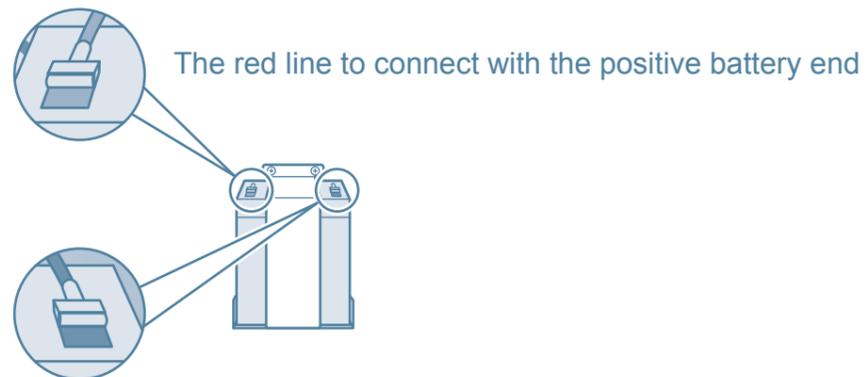
The battery in freezer is used for power outage alarm, which is placed in the electric cabinet.

**!** There are high voltage components inside the electrical compartment. Accessing the electrical areas should only be performed by a qualified technician.

## Removal of the battery

1. Shut off the power switch and unplug the power plug from the power socket.
2. Use screwdriver to remove the screw on the electric cabinet cap of the top of cabinet body;
3. Unplug the connection plug of battery;
4. Remove the fixed clamp of battery and take out the battery;
5. Recycle or disposal battery correctly according to the rules.

**⊘** When changing battery, the red line must be connected with the battery terminal positive, the black line must be connected with the battery terminal negative. This rule cannot be transposed, otherwise, it is easy to destroy the charging circuit of computer panel, this will causes the computer panel cannot charge the battery.



The red line to connect with the positive battery end

The black line to connect with the negative battery terminal

**⚠ Caution** Only DW-40L278/348/508/420F is equipped with power outage alarm battery.



DW-40W100/255/380



#### ⚠ Caution

- Do not use knife or screwdriver or similar tools with sharp edges to defrost.
- On DW-40L278/348/508/420F, Unlock the control panel. Push and hold the “Defrost” key for 5 seconds to initiate the defrost process. With exception of DW-40L420F which can resume to refrigeration mode automatically, Push and hold “Defrost” key for 5 seconds to terminate the defrost process and return the unit to cooling process.
- Perform a defrost process once every month. Do not exceed three months between two defrost cycles.

#### Battery Maintenance (DW-40L278/348/508/420F)

- When the freezer operates normally, check the battery status once every 15 days in accordance with the procedure on page 36. If the battery is low in power, turn on the battery charge switch to charge the battery for one week. IF the battery’s power is still low after one week, change the battery.
- The expected life for a battery is about 3 years. If the battery life has been in operation for more than 3 years, we recommend replacing the battery. Without the battery, the power outage alarm will not function.

#### 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.

#### Purchasing of Recording Paper and Standby Battery of Recorder

Temperature recorder is an optional device. The chart papers are custom-made. Additional chart papers can be purchased through Haier.

The 9 V DC battery for the recorder can be acquired anywhere so long it matches the requirement. Customers can also buy high quality replacement battery from Haier.

## Component Cleaning



Warning

- 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.

## Control Panel

DW-25L92/262/300、DW-40L92/262



DW-40L278/348/508



DW-40L420F



Caution

Chest models use an electronic temperature controller that is not shown here.

## DW-25L92/262/300、DW-40L92/262

- Temperature adjustment

Press “▲” and “▼” simultaneously for 3 seconds. The set temperature starts to flash. Press the “▼” key once to decrease the set value by 1℃ until the temperature reaches -40℃ (-25℃). Press the down the key again to return to -10℃. Press the “▲” key to change the value 1℃ at a time until the temperature reaches -10℃. Press it again to return the set value to -40℃ (-25℃). If no keys are pressed for 5 seconds, the value will be saved and the unit will return to temperature mode.

- Quick Freezing

Press the “SF” for 30 seconds. The symbol- “SF” above the button will be turned on and the buzzer will ring, which instructs the freezer into status of quick-freezing. Press the same button for another 5 seconds, the symbol- “SF” above the button will extinguish and the buzzer will ring to exit quick-freezing. Otherwise, the freezer will cancel quick-freezing after 3 hours.

**Caution** Cancel quick-freezing without delay after the freezer reaches the required temperature.

## DW-40L278/348/508

- Unlocking

When the “lock” indicator lamp is turned on, all the buttons are locked except “Digit Tran”. When parameters are to be set, unlocking shall be conducted first. The unlocking steps are as follows:

1. Press “Digit Tran” for about 5 seconds. “F0” will be displayed in the display zone and the “0” position will flash;
2. Press “Temp. Adjust” for a single time. “F1” will be displayed in the display zone;
3. Press “set” for a single time. The “lock” indicator lamp will extinguish and the key board will be unlocked.

- Setting Parameters by Users

Users can change parameters of the freezing chamber through control panel, such as setting value, alarm value and start-up delay.

1. Inquiry and Setting of Parameters

- ①. Press “set” in the unlocked status. “L0” will be displayed on the display screen and the “0” position will flash;
- ②. Press “Temp. Adjust” to adjust “L0” into L1, L2, L3, L4 and L5.
- ③. Press “set” again after reaching the assigned parameters. The setting value will be displayed on the display screen, and the unit value will flash. List of parameter codes is shown below:

## Automatic Alarm Resumption

- When the buzzer alarm is activated, press the “Silence” button (any key for horizontal 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.

**Caution** DW-25L92/262/300 and DW-40L92/262 do not have this feature.

## Remote Alarm Terminal (DW-40L278/348/508/420F)

DW-40L278/348/508/420F 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.

Parameter Code	Description
AL1	Highest temperature in the process of alarm last time
AL2	Lowest temperature in the process of alarm last time
AUL	Average temperature in the process of alarm last time
HAt	Duration of the alarm last time (unit: minute)

Select parameters through “Up” and “Down”, press “Alarm Record” to check parameter value, after check, press “Alarm Record” to return, other parameter codes can be selected for enquiry. After enquiry of parameter value, continue to press “Alarm Record” twice to return display of “HIS”. In case of no operation for 10 seconds at any interface of above enquiry, the parameter enquiry interface will be exited, and the current inner temperature is displayed.

If in over temperature alarm, check HIS parameter, then the parameter value of the current alarm is checked; if there is no current alarm of over temperature, then the parameter value of the last alarm is checked. History parameters of above-mentioned alarm need to be saved into memory within 30 minutes after completion of each over temperature alarm.

#### Chest type series

- When the temperature perceived by sensor is +5°C higher than the setting temperature(or higher than the high-temperature alarm value ), display “AH” and temperature alternatively . When the temperature perceived by sensor is -5°C lower than setting temperature(or lower than the low-temperature alarm value), “AL” and temperature will be displayed alternatively.
- When short circuit, open circuit, or incorrect connection occurs on temperature sensing probe, “ERR” will be displayed. When the temperature perceived by sensor is higher than 85°C, “EHi” is displayed, and “ELo” is displayed when the temperature is lower than -50°C. Meanwhile, the temperature control buzzer will make alarm, and corresponding alarm parameter (Err, Ehi, and Elo) and alarm marking will be displayed (temperature won't be displayed any more).



Caution

- 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.
- If internal code jumps out when user adjusts temperature controller, please wait for 1 min. Re-adjust when inner temperature is re-displayed to prevent freezer from fault for the change of control parameter.

Parameter Code	Meaning of the Parameter	Parameter Code	Meaning of the Parameter
L0	Setting of control temperature	L3	Inquiry of present voltage
L1	Setting of high-temperature alarm value	L4	Inquiry of present ambient temperature
L2	Setting of low-temperature alarm value	L5	Delay of door alarm

④.Press “Digit Tran” to change the flashing digit, and press “Temp.Adjust” to change the present value;

⑤. Press “set” after reaching the required temperature value. The parameter will be changed and saved.



Caution

- The default temperature is -36°C;
- Delay time of door alarm is only applicable to DW-40L278;
- Voltage and ambient temperature value can only be inquired, not be set;
- The setting scope of high & low-temperature alarm value is as follow:  
Highest set temperature +5°C ≥ high-temperature alarm value ≥ set temperature +5°C  
Lowest set temperature -5°C ≤ low-temperature alarm value ≤ set temperature -5°C
- The symbol “┆”before the numbers represents “+”.

#### 2. Setting of Start-up Delay Time

①. In the unlocked status, press “set” and “Temp.Adjust” at the same time for 5 seconds. The present delay time of the compressor will be displayed on the display screen;

②. Press “Temp.Adjust” to change the start-up delay time.

③. Press “set” after reaching the required value. The parameter will be changed and saved.

#### 3. Defrosting

Press “Defrost” for more than 5 seconds in the unlocked status. The operation of refrigerating system in the freezing chamber will be stopped, and “dF” will be displayed on the display screen. The system can not be reset in this status. Press “Defrost” for more than 5 seconds to exit defrosting mode in unlocked status. After exiting the mode, “dF” will not be displayed on the display screen any more.



Caution

As for adjustment of all the parameters, the system will save the present setting and exit parameter setting mode if there is no operation in 10 seconds;

DW-40L420F

• Temperature Regulation

Press “Set”, the display panel displays “Ts”; then press “Set” again, the panel displays current setting temperature value, which is defaulted to “-40.0”. Pressing “Up” or “Down” can increase or decrease the figure on the panel. After the required temperature value is entered, press and hold “Set” for more than 5 seconds to save the value and the panel displays current inner temperature. During the above setting process, in case of no operation for 10 seconds at any interfaces, the parameter setting will not be saved and the panel continues displaying current inner temperature.

• DIS Parameter Query

Simultaneously press “Up” and “Down”, the control panel displays “PS”; press “Set”, the control panel flashes and displays “00”. Enter correct password by pressing “Up” or “Down” (the default password is 06). Press “Set” to go to the interface of system parameter regulation. The “DIS” parameter is firstly displayed. Press “Set”, the first parameter “DIS1” will be displayed; then press “Set” to display the value of the parameter “DIS1”. Then again press “Set” to display “DIS1”. Check the values of “DIS2” and “DIS3” by pressing “Up” and “Down”. Return by pressing “Set” after checking.

Press “Set” again to display “DIS”. In any of the above query interfaces, in case of no operation for 10 seconds at any interfaces, exit the parameter query interface and display the current inner temperature.

DIS displaying parameters:

Parameter Code	Explanation
DIS1	Display current temperature of sensor inside the freezer (uncorrected)
DIS2	Display current temperature of displaying sensor
DIS3	Display current temperature of ambient temperature sensor

• Restore Factory Settings

Simultaneously press and hold “Set” + “Up” + “Down” for 10 seconds to restore factory settings.

Chest type series

• Electronic temperature controller

This series freezer is equipped with the electronic temperature controller on the control panel and the digital display screen can indicate the actual inner temperature after the freezer is powered.

Schematic Diagram of Electronic Temperature Controller:

Alarm	Status	Fault Code	Indication	Buzzer
High temperature alarm	When the inner temperature is higher than the setting temperature of alarm	E9	Alarm indicator flashes	For the first starting up, 5 h after default setting, start buzzing alarm function. When in normal operation, make the buzzing alarm after delay for 15 min.
Low temperature alarm	When the inner temperature is lower than the setting temperature of alarm	E10	Alarm indicator flashes	
Power outage alarm	The equipment is in power outage mode	/	Alarm indicator flashes, the black screen and inner temperature are on the display screen alternatively	Make buzzing alarm after delay for 30 s
Excessive ambient temperature	The ambient temperature is higher than 38 C	E14	Alarm indicator is always on	-----
Sensor is abnormal	Fault occurs on the main sensor in refrigerator	E6	Alarm indicator flashes and E6 code is displayed	Buzzing alarm
	Fault occurs on the combine temperature sensor	E0	Alarm indicator flashes	-----
Low battery	The battery is low or the battery switch is not turned on	E5	Alarm indicator is always on	-----
Door alarm	The door is opened or not closed tightly	E7	Alarm indicator flashes	Make buzzing alarm after time delay (default to 10min)



Caution

If there are more alarms, each alarm fault code will be displayed for 3 s.

DW-40L420F

When inner temperature is displayed normally, continue to press “Alarm Record” for 5 seconds, the panel displays "HIS" (alarm history enquiry), press “Alarm Record” again to enter the alarm history enquiry menu of over temperature, four parameters are included in this menu: AL1, AL2, AUL, HAt.

DW-25L92/262/300、DW-40L92/262

- When the temperature perceived by sensor exceeds  $\pm 5^{\circ}\text{C}$  than the setting 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  $34^{\circ}\text{C}$ , "HH" is displayed, when the temperature perceived by sensor is lower than  $-45^{\circ}\text{C}$ , "LL" is displayed.

DW-40L278/348/508

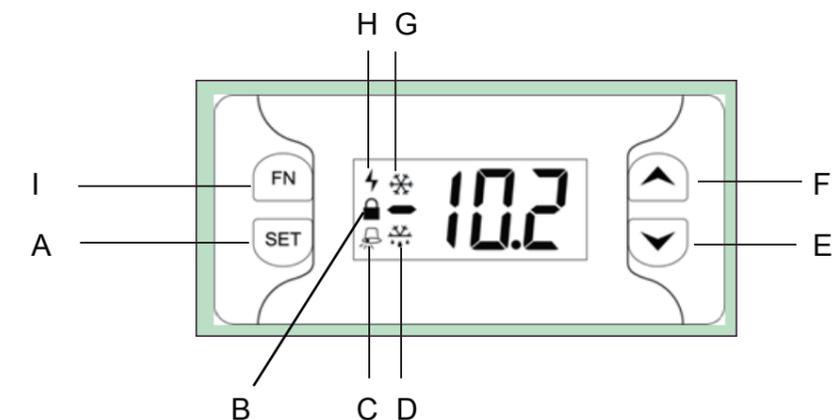
After power-on, the freezer will enter a starting-up status and the inner temperature will be on the display panel.

Working condition prompt of display panel:

- "Lock" indicator: when this indicator is on, it means all settings are locked to prevent faulty operation.
- "Alarm" indicator: when this indicator is on or flashes, it means fault occurs.

Key functions:

- Cancel buzzing: under the lock-out or unlocked status, when alarming, the alarm sound can be cancelled by pressing "Cancel buzzing" and resumed after 30 min, but the flashing alarm cannot be canceled.
- Alarm test: used to test the alarm system when it is in normal operation condition and has the function of testing low power of battery. Under the unlocked status, press this key then all indicators are on, the buzzer alarm and "8" will be displayed on all Nixie tubes. Under locking status, when alarm occurs, press this key then the corresponding fault alarm code will be displayed. The fault cause can be queried according to the below table.



A	Setting Button	F	Increase Button
B	Locking Mark	G	State of Refrigeration
C	Alarming Mark	H	Power Mark
D	Defrosting Mark	I	Functional Button
E	Decrease Button		



Caution

- In normal operating condition, it is not suggested adjusting the setting temperature. The adjustment of setting temperature may lead to the product high temperature (AH) or the low temperature alarm (AL). At that time, adjust the high and low temperature alarming values (AH and AL) simultaneously.
- Generally, the high and low temperature alarming values are set within  $\pm 5^{\circ}\text{C}$  of the setting temperature.

- Temperature Setting

The screen displays current inner temperature when the freezer is powered. To reset the temperature, e.g. the former setting temperature was  $-20^{\circ}\text{C}$  and now it needs to be reset to  $-25^{\circ}\text{C}$ : follow steps below in the S/N order:

S/N	Button Operation	Display
1		Display the inner temperature
2	Simultaneously press and hold buttons of "SET" and "FN" for 3 seconds and then unlock	🔒 on the screen disappears
3	Press and hold button SET for more than 3s	Display the setting value -20 and flash
4	Adjust through pressing the Decrease Button ▼ (▲ is the Increase Button)	Change the setting value to -25
5	Press and hold button SET for more than 3s to save the setting value	Stop flashing and display inner temperature

- Adjust Temperature Alarm Limits

To guarantee the security of articles in the freezer, the electronic temperature controller has the alarming function. When the inner temperature is higher than the upper alarm limit or lower than the lower alarm limit, the buzzer will alarm. Meanwhile, the alarm symbol and the current temperature will display alternatively on the screen (note: high temperature alarm - AH, low temperature alarm - AL). After unlocking the alarm, press any button to cancel buzzing (alarming icon will be continuously displayed on the screen). When the inner temperature is between the upper and lower alarm limits, the alarm disappears.

The screen of the freezer displays the current inner temperature when the freezer is powered. The set of the alarm limits for this temperature controller is based on AH and AL values, that is, the upper alarm temperature = AH setting value; the lower alarm temperature = AL setting value; e.g. the upper alarm limit is changed from -15°C to -10°C; the lower alarm limit is changed from -25°C to -30°C. Follow steps below:

S/N	Button Operation	Display
1		Display the inner temperature
2	After unlocking, simultaneously press and hold SET + ▲ for more than 3 seconds	Display AH
3	Press SET	-15
4	By pressing the Increase Button ▲	-10
5	Press SET to confirm the parameters	AH
6	Press the Increase Button ▲	Till displaying AL
7	Press SET	-25
8	By pressing the Decrease Button ▼	-30
9	Press SET to confirm the parameters	AL
10	Press and hold button SET for more than 3s to save the setting value	Display the inner temperature

display screen stably, the date (default to 01) in flashing mode will be on the right digits (the two digits from right to left) of display screen, for each press of "Temp.Adjust" key, the date will increase by one, recycling from 01 to 31, after completing the set, press "Set" key to save. Then "4P" will be on the left two digits (the two digits from left to right) of display screen stably, the hour (default to 01) in flashing mode will be on the right digits (the two digits from right to left) of display screen, for each press of "Temp.Adjust" key, the hour will increase by one, recycling from 00 to 23, after completing the set, press "Set" key to save. Then "5P" will be on the left two digits (the two digits from left to right) of display screen stably, the minute (default to 01) in flashing mode will be on the right digits (the two digits from right to left) of display screen, for each press of "Temp.Adjust" key, the minute will increase by one, recycling from 00 to 59, after completing the set, press "Set" key to save. If no operation within 10 s after completing these settings, the machine will save data and exit automatically. If press "Set", "Digit Tran" and "Temp.Adjust" for more than 5 s during set procedures, the machine will save data and exit immediately. And the inner temperature will be on display screen normally.

- Time setting of record data of U-disk ports(DW-40L420F):

Press "Down" for 5 seconds, two digits on the left of the display screen display "1P" (from left to right), two digits on the right of the display screen (from right to left) flash and display year (the default is 10), press "Up" one time and 1 year is increased, press "Down" one time and 1 year is decreased, the digits can be recurrently displayed from 10 to 30, after the setting, press "Set" to save. Then two digits on the left of the display screen (from left to right) steadily display "2P", two digits on the right of the display screen (from right to left) flash and display month (the default is 01), press "Up" one time and 1 month is increased, press "Down" one time and 1 month is decreased, the digits can be recurrently displayed from 01 to 12, after the setting, press "Set" to save. Then two digits on the left of the display screen (from left to right) steadily display "3P", two digits on the right of the display screen (from right to left) flash and display date (the default is 01), press "Up" one time and 1 day is increased, press "Down" one time and 1 day is decreased, the digits can be recurrently displayed from 01 to 31, after the setting, press "Set" to save. Then two digits on the left of the display screen (from left to right) steadily display "4P", two digits on the right of the display screen (from right to left) flash and display hour (the default is 01), press "Up" one time and 1 hour is increased, press "Down" one time and 1 hour is decreased, the digits can be recurrently displayed from 00 to 23, after the setting, press "Set" to save. Then two digits on the left of the display screen (from left to right) steadily display "5P", two digits on the right of the display screen (from right to left) flash and display minute (the default is 01), press "△" one time and 1 minute is increased, press "Down" one time and 1 minute is decreased, the digits can be recurrently displayed from 00 to 59, after the setting, press "Set" to save. If no operation for 10 seconds in the process of setting, setting is not saved and exited, and the current inner temperature is displayed. In the process of setting, press "Set" for 5 minutes, setting is saved and exited, and the current inner temperature is displayed.

## USB port

USB port can be supplied for DW-40L278/348/508/420F.

### • USB port Function

USB computer panel can save 10 years of test data with the collection time as 6 min per once, the data will be saved automatically after collected; when the computer panel is filled with data, the latest storage data will replace the earliest one automatically.

1. Storage mode of exported data: \*.CSV is adopted for the exported data. Each CSV file represents a month of data, named as “month/year .CSV”. The exported data of the year needs to be saved in the same folder named after the year.

2. Handling of exception in exporting data: adopt character fill to represent abnormal condition; use “NULL 1” to represent power outage fault; use “NULL 2” to represent the communication fault of USB panel and main control panel.

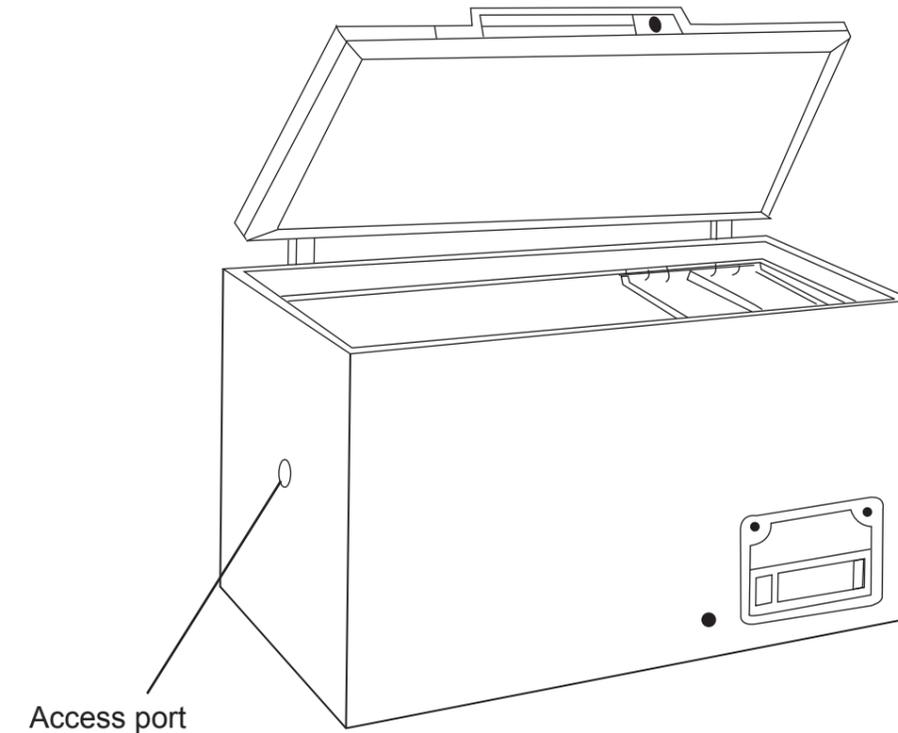
3. Export data: plug in the U-disk, identify automatically and start to import data to U-disk. Under the lock-out status, press set key quickly for 1 s, the display panel will be in a recycling mode to display “USb” for 1 s then not display for 1 s, which means the data import to U-disk is being on and not completed. After flashing for 5 s, exit and display the actual inner temperature. The U-disk can be removed from USB interface. And the format of exported data is as follow:

序号/No.	时间/Time	设定温度/Setting Temp.	箱内温度/Inner Temp.
00000	20130425 11:40	-40.0	-40.1
00001	20130425 11:46	-40.0	-40.2
00002	20130425 11:52	-40.0	-40.0
...	...	...	...

### • Time setting of record data of U-disk ports(DW-40L278/348/508):

After unlocking, press “Set”, “Digit Tran” and “Temp.Adjust” keys at the same time for more than 5 s, then “1P” will be on the left two digits (the two digits from left to right) of display screen stably, the year (default to 10) in flashing mode will be on the right digits (the two digits from right to left) of display screen, for each press of “Temp.Adjust” key, the year will increase by one, recycling from 10 to 30, after completing the set, press “Set” key to save. Then “2P” will be on the left two digits (the two digits from left to right) of display screen stably, the month (default to 01) in flashing mode will be on the right digits (the two digits from right to left) of display screen, for each press of “Temp.Adjust” key, the month will increase by one, recycling from 01 to 12, after completing the set, press “Set” key to save. Then “3P” will be on the left two digits (the two digits from left to right) of

## Access port



### • Purpose

1. Implement the relevant test to objects or environments in the freezer by putting in the test line.
2. Balance the internal and external pressure to open the door.

### • Usage

1. If it is necessary to implement data test, open thread plug of both ends of test hole, then place thread end on it after putting in the test line and tight it; thread plug is rubber product, so it won't damage test line.
2. If it is difficult to open the door because of the low pressure caused by the low temperature, open the lateral thread plug of test hole to decrease internal pressure to open the door.



Caution

The access port is located on different place of the freezer for different type, please refer to your freezer to operate correctly .

## Temperature recorder ( DW-40L278/348/508/420F )

DW-40L278/348/508/420F can match inner temperature recorder with 6 inches standard panel to record inner temperature variation.

### • Installation and Operation

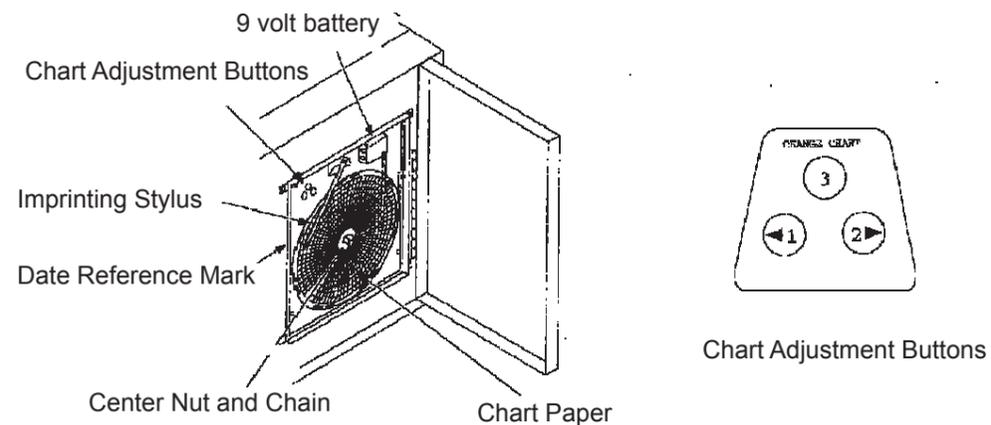
To properly operate and use recorder, please handle in accordance with the following steps:

1. Open the door of the recorder, and see the recorder;
2. Connect the 9 V DC battery on the upper right corner of recorder, and this battery is standby power supply;
3. Check the recording paper, if it is necessary to replace, please replace the recording paper in accordance with the steps of P29;
4. Remove the plastic cap from recording pen, and close the door of the recorder.



**Caution**

Unless the inner temperature reaches the record range of recorder, the recorder won't work.



### • Power Supply

Normally, recorder uses AC power supply when freezer operates; if AC power supply breaks down, LED indicator light on the recorder will alarm in a flash way, which means that the power supply is abnormal. The recorder will continue to record inner temperature by standby battery power supply. Each standby battery can maintain about 30 h (note: replace this battery in time when its electric quantity is very low, to avoid corrosion of battery button caused by without replacement in time. To save battery, please disconnect the battery button when freezer is not used. In the process of normal use, to ensure normal record in the case of outage, please install standby battery). LED indicator light of recorder will not stop flashing until main power supply (AC power supply) is connected and battery of its standby power supply is replaced. When electric quantity of standby battery is low and LED indicator light of recorder flashes, which means that the battery needs to be replaced.

3. After retightening press bolt and pressing Key 3# again, the recorder will switch to the process of paper calibration. Please refer to the guide of last page to calibrate the installation of paper;
4. After calibration finishes, the temperature recorder will switch to normal record status.

### • Time and ID (Recorder No.) Setting of Recorder

1. Insert the storage card of recorder into the recorder, the indicator light of storage card flashes;
2. Press Key B, if the time and ID of storage card has been set, the recorder will update the time and ID, and eliminate all internal records such as temperature and time record.
3. After operation is complete, the indicator light of storage card will always be on, or keep flash status;

### • Data Reading of Recorder

1. Insert the storage card of recorder into the recorder, the indicator light of storage card begins to flash;
2. Press Key A, if there is enough space in storage card, the data will be transferred into storage card, and the indicator light will always be on after successful transfer. If the data fails to be transferred, the indicator light of storage card will maintain flash status.
3. Remove the storage card and connect computer to view data through matched USB kit.



**Caution**

- The recorder saves data in storage card once every hour and can record at most 2 weeks of data. When the storage space is full, the new data will cover the earliest hour of record.
- After the storage card reads data, the recorder will still save the collected data. Only when ID or real time is reset, the data can be cleared.

### • Calibration Adjustment of Recorder

Connect the temperature recorder to power supply and put temperature sensing probe in a stable temperature environment (e.g. 0°C of ice water mixture), after the temperature recorder enters temperature status, press and hold 1# or 2# (for about 5 s), the recorder will enter temperature calibration status after a “click” made by buzzer. Use Key 1# and 2# to conduct lateral adjustment to make the pointer aim at the temperature scale on recording paper, stop adjustment, press Key 3# to confirm or 5 s later, after a “click” made by buzzer, the temperature recorder will exit temperature calibration status automatically and return temperature record status.



**Caution**

- The recorder has been calibrated in factory. Do not adjust it at will unless special circumstances.
- When the refrigerator is not energized and discontinued, please make sure the key of recorder is at the “0” end, avoid to over discharge of the battery of record to damage the battery.

- Maintenance and Replacement of Standby Battery of Recorder

In the case of green LED flash of recorder, there are two kinds of inspection methods:

1. Remove standby battery, if LED light extinguishes and recorder stops working, which means that main power supply (220 V/50 HZ) of recorder has problem; please check whether there is outage, short circuit and loose wiring phenomenon, etc. If main power supply is repaired, recorder can work normally, and then install standby power supply well. If LED light stops to flash, standby power supply is normal. If LED light continues to flash, which means that electric quantity of standby battery is low, it is necessary to replace standby battery, till LED light is on and does not flash.
2. Remove standby power supply, power supply LED light flashes continuously and recorder works normally, which mean that main power supply is normal, electric quantity of standby battery is low, it is necessary to replace standby battery, till LED green light is on and does not flash.

- Replace Recording Paper

Replace recording paper in accordance with the following steps:

1. Find the press button (3#) on the upper left corner in front of recorder panel;
2. Press this button (3#) about 1s, till recording pen begins to move towards the left side of the paper;
3. When recording pen moves the exterior of recording paper totally, loosen the bolt in the middle, replace the old recording paper with the new recording paper, and align timeline on the paper with time slot on the paper carefully (there is a small groove on the left side of panel);
4. Retighten the center bolt, press the button 3# about 1 s to make recording pen restoration and begin to record temperature;
5. Check whether recording pen can work well on the paper, if not, adjust beam of recording pen to make pen point contact the recording paper. (note: do not damage pen point and beam, if it is difficult to adjust, use screwdriver to remove the beam, slightly bend the beam, then repeat the above operation to install beam again);
6. To ensure accurate record of recorder, it is necessary to calibrate the accuracy of recording pen after replacing recording paper, and the method is as follows: press the button (3#) till the recording pen leave recording paper, then press the button (3#) again till pen returns recording paper again, at this time, the pen will pause on the external temperature scale line (this scale line does not always have temperature value, but it must be the outermost scale line), if the pen does not pause on the aforementioned location, you can adjust the location of the pen by arrow keys 1# or 2# within the 5s, to make pen point align with the outermost scale line. If you do not adjust the location of pen well, please repeat to operate 6.

- The Adjustment Modes of Temperature Measurement Tap Position and Record Period

1. After normal power on of machine, press and hold Key 3# for at least about 5 s, when hearing a “click”, the pointer of recorder will stop walking, which means the recorder switches to the set mode;
2. Pressing the key 1# can switch the temperature measurement tap position and the color of indicator light shown in following figure will change with every press. Different colors represent different tap positions, and the corresponding color and tap position are as follows:

Green: -40 °C ~+ 30 °C (applicable to this product and must be selected)

Yellow: -115 °C ~+ 50 °C

Red: -200 °C ~+ 0°C

Note: According to aforementioned temperature tap position; unless the temperature reaches the record range, the recorder won't work.

3. Pressing the Key 2# can select record period. There are two kinds of record period in total to choose and they should be distinguished according to the sound made by machine:

The record period is 24 h: rushed short buzzing from the machine;

The record period is 7 days: continuous short buzzing from the machine;

(recommend this period, save paper)

4. Adjust tap position and period in place and press Key 3# to exit setting.

- Paper Calibration

1. After power on, tap position and period adjustment, to the accuracy, the setting of tap position and period will take effect after paper calibration on equipment. If tap position and period are not adjust after power on, 5 s later, the machine will enter paper calibration mode automatically and the paper calibration mode is as follow:

After pressing 3#, the scriber will move to the mark position of -40°C firstly and stay here for 3 s. Inspect whether pointer position and the scale of paper are matched at this time. If not, the pointer can be adjusted finely by pressing 1# or 2#.

2. 3 s later, the pointer will move to the position of -20 °C from that of -40 °C and stay there for 3 s. At this time, the pointer also can be adjusted finely according to aforementioned method;
3. Then the pointer will move the position of -20 °C to scale position to be measured of 0 °C and stay there for 3 s, and the pointer position also can be adjusted finely;
4. 3 s later, the scribble will slide to appointed scale according to the present perceived temperature, and then the calibration ends.

- Replace the Recording Paper

The recording paper must be replaced by a new piece of paper after a record period, and see below for the steps of replacing recording paper:

1. Press Key 3#, the pointer will move to the outside;
2. After the pointer moves away from the recording paper totally, release the press bolt and replace new recording paper, and please aim the starting time scale of recording paper at the datum line of board carefully;

- Calibration Adjustment of the Recorder

Recorder is accurately adjusted before delivery, it will not be influenced even if power failure, if it is necessary to adjust, please operate in accordance with the following procedures:

1. Run freezer continuously, and after it reaches the stable status (the displayed temperature fluctuation is more regular), make recorder record temperature curve at least 2 h continuously;
2. Place a standard thermocouple into the solution bottle with about 100 ml 10% glycerin, and put the glycerin solution bottle with thermocouple and sensor of recorder into the freezer together (sensor of recorder can not contact with any solution);
3. Make glycerin solution bottle with thermocouple in the freezer for about 4 h, when the temperature of glycerin solution in the solution bottle is identical to the temperature in the freezer, compare the temperature value of standard thermocouple with that of recorder, if temperature value of recorder is in conformity with temperature value of standard thermocouple, adjust the record temperature value of recorder by the left(1#) or right (2#) adjustment buttons on the panel, to make it conformity with indicator value of thermocouple.

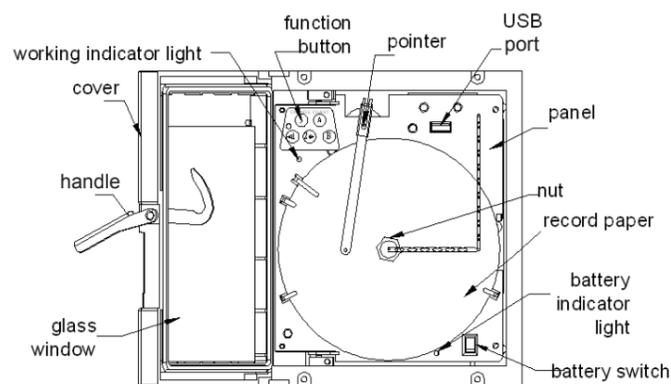


- Recording pen begins to move after loosening button 5s.
- The recorder has been calibrated before leaving factory. Do not adjust the recorder optionally unless special circumstances.

Temperature recorder with USB ( DW-40L278/348/508/420F )

DW-40L278/348/508/420F can match disc type temperature recorder with USB interface, to record inner temperature variation. To ensure the correct and rational use of disc type recorder, please carefully read the following instructions.

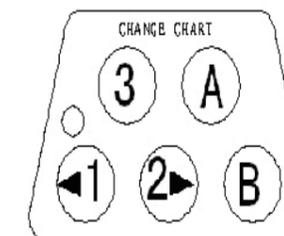
- Get Familiar with Your Temperature Recorder



Disc type temperature recorder uses recording paper of the standard 7 inches, record data can be exported by recording paper and U-disk. Please know your temperature recorder well in accordance with the figure above:

1. Head cover and lock catch provide a good protection for temperature recorder, lightly uplifting the lock catch and pulling the head cover can open the head cover; closing the door and pressing the lock catch can fasten head cover;

2. Thin film button – for basic operation such as setting;
  - Key 1#: choose temperature tap position or adjust towards the left;
  - Key 2#: choose record period or adjust towards the right;
  - Key 3#: set key;
  - Key A: U-disk data reading;
  - Key B: time setting;



3. Work indicator light - different colors represent different temperature measurement tap position. When in normal use, the operating indicator light should be green; when the work indicator light is flashing, it means the machine is recording temperature;
4. Scriber - the tip of scriber records data through the tight connection with recording paper. The metal bar of scriber is certain elastic to guarantee clear scribing. When leaving factory, the scriber is equipped with protective sheath. If you need use it, it is recommended to retain the sheath to protect the scriber during long time of non-use;
5. USB interface – USB interface can be plugged into the matched storage card to set time and export data;
- Gland nut and recording paper - clockwise operation is to screw the gland nut and the recording paper can be replaced after gland nut is unscrewed;
6. Charge indicator light - charge indicator light always being on represents it is in quick charge status; flash of charge indicator light represents that quick charge has been completed and it is in trickle charge status; and extinguishing of charge indicator light represents that charge is completed.
7. Key - this switch is the switch for charge battery. When in normal use, this switch must be turned on. Under the condition of full charge of capacity, after power off, the recorder can record temperature for continuous 24 hours by standby battery.

- First Use

1. After normal power on, please open the cabin door of recorder and turn battery switch of recorder to the “I” end to switch on the standby battery of recorder;
2. The recorder itself is equipped with a piece of recording paper. Please inspect the status of this paper. If it needs to be replaced, please refer to the description in Page 32;
3. To protect recorder pen, the recorder pen is equipped with plastic protective cap. Please remove the plastic protective cap before use;
4. According to the demands of machine and yourself, adjust the temperature measurement tap position and record time period of temperature recorder, in which the tap position represents the temperature measurement range of the temperature. After adjustment finishes, the recorder will record the current tap position setting and record period automatically and re-adjustment is not required.