

Ultra-Low Temperature Freezers

Instruction Manual

Thank you very much for purchasing our Ultra Low Freezer.

Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” at a hand place for future reference.



Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.



OUR SERVICES

Benefits and Support

In Kalstein France, we take care of the full satisfaction of our customers, that is why we provide value-added services of the highest level based on our experience.



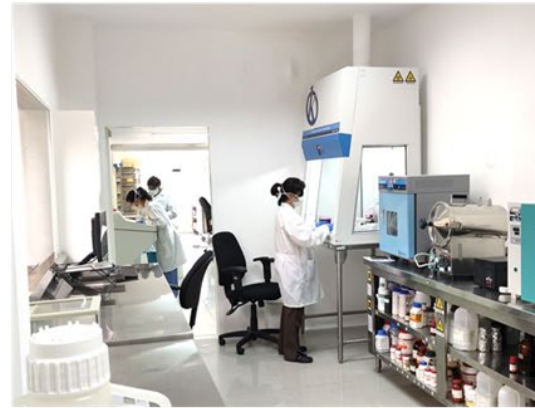
Online Inductions and Trainings

In any part of the world, receive your induction or training from our specialized team of engineers



Quick Response

Our work team is always available to response all your consults or questions, in order to support you in any situation.



#Letsgivemore

Thanks to your purchase, a donation will be made to a non-profit foundation that fights against breast cancer and helps most vulnerable communities.



Technical Support

Enjoy of personalized advice for the correct preventive and corrective maintenance of your equipment, thanks to Kalstein's manuals and articles, special catalogues and video tutorials.



Delivery Logistics

We take care of all the necessary logistics for the dispatch of your goods, whether is by sea, land or air.



Kalstein Worldwide

With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.





This product consists of door, chamber, electric control system, refrigeration system and accessories.

The Ultra-low Temperature Freezer offers a wide variety of research and storage applications, such as low temperature scientific experiments, preservation of plasma, biomaterials, tunny, biological product, and testing low-temperature-resistant properties of military product.

It is suitable for blood bank, hospitals, sanitation and anti-epidemic, sanitation, research institutes, electronic industries, university laboratories, military industries, pelagic fishery companies.

Top control technique :

High precision microcomputer temperature control system, platinum thermistor sensor temperature could be set between -40°C to -86°C .

LED touch screen controller with 7", clear display, easy to operate.

Gorgeously design for excellent appearance.

Refrigerating system :

Imported international brand high-efficient compressor, EBM fan motor powerful and more energy-efficient.

2-times foaming thermal insulation door, multi-patents outdoor insulation design; Effectively prevent the loss of cooling capacity.

Cabinet uses high-performance vacuum insulation board, greatly improved the insulation effect.

Humanization design :

Mechanical door handle, easy to open.

Adjustable multi-level shelves, easy to store articles; Universal wheels with fixed support, easy to move and fix.

Safety system :

With keyboard lock and password protection system, prevent from un-authorized change of the parameters.

Multiple failure alarm system: Sensor failure alarm, High and low temperature alarm, door open /ajar alarm, filter clogging alarm, system failure alarm. Make sure the safety of the articles stored inside the freezer.

Door with lock, prevent from the un-authorized opening.

Start delay and interval stop system to protect the reliable operation.























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2. PRECAUTIONS FOR SAFE OPERATION

For the first time to use this device, users must read the meaning of the following warning labels very carefully. Items and procedures are described so that you can use this unit correctly and safely. If the precautions advised are followed, this will prevent possible injury to the user and any other person.

 <p>WARNING. Failure to observe WARNING signs could result in a hazard to personnel possibly resulting in serious injury or death.</p>	 <p>CAUTION. Failure to observe WARNING signs could result in injury to personnel and damage to the unit and associated property.</p>
 <p>CAUTION HOT. The sign informs the users about the danger of burns for high temperature.</p>	 <p>DANGER OF EXPLOSION. The sign informs the danger of the application of volatile, explosive chemical substances.</p>
 <p>NO TILTING.</p>	 <p>STAY OUT OF SUN.</p>
 <p>BEWARE OF ELECTRIC SHOCK! Dangerous voltage may cause personal injury! Please disconnect the power supply before repair.</p>	 <p>GROUNDING MARK.</p>
 <p>NO TRAMPLING EQUIPMENT.</p>	 <p>NO TUMBLING TRANSPORT PACKAGES.</p>
 <p>PRECISION INSTRUMENTS.</p>	 <p>HANDLE WITH CARE.</p>
 <p>THE CONTENTS MUST BE PLACED AT THE ARROW.</p>	 <p>FEAR OF THE RAIN.</p>
 <p>NO STACKING.</p>	 <p>NO CLAMPING.</p>

 <p>WARNING. Failure to observe WARNING signs could result in a hazard to personnel possibly resulting in serious injury or death.</p>
 <p>As with any equipment that uses CO₂ gas, there is a likelihood of oxygen depletion in the vicinity of the equipment. It is important that you assess the work site to ensure there is suitable and sufficient ventilation. If restricted ventilation is suspected, then other methods of ensuring a safe environment must be considered. These may include atmosphere monitoring and warning devices.</p>
 <p>Do not touch any electrical parts such as the power supply plug or any switches with a wet hand. This may cause electric shock.</p>
 <p>Only qualified engineers or service personnel should install the unit. The installation by unqualified personnel may cause electric shock or fire.</p>

	Be sure to install the unit on a sturdy floor. If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over.
	Carefully with the power cord to avoid short circuit or open circuit. When removing the plug from the power supply outlet, grip the power supply plug, not the cord. Pulling the cord may result in electric shock or fire by short circuit. Don't make the power line pack and pressed by furnish or heavy goods. Also please don't close to the compressor and heat source.
	Please insert the power plug firmly to avoid leakage.
	Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers. Don't lengthen the line randomly. If you need, to use 2.5mm ² copper line, you should keep 4mm ² line to connect the electrical outlet. Or may cause fire.
	Make sure a dedicated power source is used as indicated on the rating label attached to the unit. Out of the rate, should install a property transformer and a proper voltage stabilizer for securely operation. Or the freezer may be damaged and may cause injury.
	Be sure to install the unit on a sturdy floor, no shaking and tilting.
	Never install the unit in a flammable or volatile location. This may cause explosion or fire.
	Never install the unit in a humid place or outdoor or a place where it is likely to be basked straightly. Deterioration of the insulation may result which could cause current leakage or electric shock.
	Do not place the device lateral tilt, do not impact the device; the device is equipped with refrigeration systems, roll or shock will easily damage the freezer.
	Be sure to install the device in a dry dust-free environment to avoid overheating, short circuit and other dangers.
	If there is an unexpected sound, smell, smoke when the power is turned on, unplug the power and contact the manufacturer or supplier. Continued abnormal operation may cause electric shock or fire.

	Make sure a dedicated power source is used as indicated on the rating label attached to the unit. Out of the rate, should install a property transformer and a proper voltage stabilizer for securely operation. Or the freezer may be damaged and may cause injury.
	Make sure to put the freezer in a dry and ventilated environment, to ensure that equipment vents and wall surface of the instrument or other items have not been blocked; Do not use the device in a poorly ventilated environment, or the equipment may be damaged by the release of heat.
	Never disassemble, repair, or modify the unit yourself. Any such work carried out by an unauthorized person may result in fire or injury due to a malfunction. Kalstein France will be no responsible for such work.
	Use this unit in safe area when treating the poison, harmful or radiate articles. Improper use may cause bad effect on your health or environment.
	Never ground the unit through a gas pipe, water main, telephone line or lightning rod. Such grounding may cause electric shock in the case of an incomplete circuit.
	Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers.



CAUTION.

Failure to observe WARNING signs could result in injury to personnel and damage to the unit and associated property.



Ultra-low temperature freezer is not available to store living things, flowers, or other critical articles which is not suitable for low temperature storage.



The temperature inside the freezer is very low during the normal working. Do not touch the interior surface of the chamber or the object inside without wearing protective gear.



Always disconnect the power plug when the unit is not used for long periods.



Make sure to prepare a safety check sheet when you request any repair or maintenance for the safety of service personnel. Be sure to check set point of the controller prior to restart the freezer.






The ultra-low temperature freezer is a storage device, not a production equipment!



Always hold the handle when closing the door. This will reduce the likelihood of a trapped finger.



Keep the key properly avoiding the children take it to open the door which may result in unexpected injury.

	Select a level and sturdy floor for installation. This precaution will prevent the unit from tipping. Improper installation may result in water spillage or injury from the unit tipping over.
	Check the filter mentioned in this manual and clean it as necessary. A dusty filter may cause temperature rise or failure.
	Do not tilt the unit more than 45 degrees when moving the unit. All transportation should be carefully.

3. Precautions for use

- ◆ When the freezer is running, the front part of the freezer may get hot. This is not a malfunction: In order to prevent dew condensation around the case body, a heated anti- condensation tube is installed in the cryogenic storage case.
- ◆ Before putting the items in the freezer, please make sure the temperature inside the box has reached the set temperature, and then put the items in batches. Add no more than 1/3 of the container volume each time, in case the temperature rises too much.
- ◆ The temperature display value shows the temperature of temperature sensors inside the freezer. Although the displayed temperature may sometimes differ from the actual temperature in the center of the freezer, it will get close to the real temperature gradually.
- ◆ A through-hole is installed on the right or back of the freezer to allow test lines to exit the test box. After drawing out the test lines, be sure to re-plug the test hole with insulating material, otherwise the temperature inside the box will not be completely lowered, resulting in condensation around the outside of the hole.
- ◆ Clean the freezer with diluted neutral detergent. Do not use brushes, acid, gasoline, soap, polish or hot water to clean the frozen storage container, as these materials may damage the painted surfaces and plastic rubber components.
- ◆ After a period of operation, a layer of frost will form on the inner wall and the inner door. If the frost layer is too thick, it will affect the insulation effect of the freezer and increase the power consumption. Therefore, after a period of time, when the frost layer reaches about 5mm, it should be defrosted with the defrost shovel attached.
- ◆ Please remove the frozen items in the freezer and put them in a suitable storage environment before defrosting, so as to avoid the damage of goods for temperature rise.
- ◆ There are many cooling coils on the back and side of the inner wall. Don't use sharp objects such as knives, ice chisel, or screwdrivers to remove the frost on the inner wall. Be careful not to scratch the inner wall when defrosting, otherwise it will cause a failure of the freezer.
- ◆ Cut off the power when the refrigerated storage box will not be used for a long time.

4. Installation



4.1 Installation environment:

- Ambient temperature: 10°C~32°C, optimal ambient temperature :18°C~25°C, air conditioning system is required if necessary.
- Relative humidity: ≤80%RH.
- No strong vibration and no corrosive gases around.
- Without the presence of a lot of dust.
- No shaking or vibrating of the freezer.
- Altitude of the place where the freezer is located : ≤2000m
- Input voltage ≤115V±10% or 208V± 10%.
- No direct sunlight or any other cooling or heating source, no electromagnetic interference, or the freezer will not run properly.
- Keep the distance between the freezer and the surrounding wall of 30 cm or more, and the air outlet must not be obstructed, pay attention to room ventilation or opening air conditioner during the hot summer.



CAUTION.

Since the ambient temperature has a great impact on the operation of the freezer. If the freezer is installed in the other situations instead of above conditions, the freezer will not run properly.

4.2 Installation site :

This unit is a precision machine. When select a location to install this unit, keep the following conditions for perfect performance :

- Should not be installed in a small, confined space, the door of the room should not be less than height of the present equipment.
- Install the unit on a sturdy floor to avoid excessive vibration and noise.
- Installing the unit in direct sunlight may cause malfunctioning and may shorten the life of the unit. Keep good ventilation is necessary.
- Do not share a socket with other equipment, plug and socket should be securely connected。
- Socket inputs should be connected to circuit protection facilities, such as: An air switch which the rated current is bigger than 45A.
- If an extension cord is needed, be sure to use copper wire more than 2.5mm². The cross- sectional area of the copper wire inside the wall connected with the power outlet must also be more than 4mm².
- Checking the working voltage of the place before starting the freezer. A voltage stabilizer is suggested to be used at the place where the voltage is not stable. Make sure the normal input voltage stable at 115V ± 10% or 208V± 10%, Power of voltage stabilizer should be more than 4KW.
- Be sure to ground the unit.
- Grounding prevents electric shock which occurs when the electrical insulation of the unit becomes insufficient.
- If the power cord socket is equipped with grounding wire, check the connection before use.
- If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers.



WARNING.

- Ÿ Make sure of using a plug with earth provision and to ground the unit to prevent the electric shock in the event of the current leakage.
- Ÿ Substituting a water pipe for the ground terminal will not provide proper grounding in many instances since plastic pipes are often used for water piping.
- Ÿ Never ground the unit through a gas pipe, as it is very dangerous.
- Ÿ Never ground the unit through the telephone line or lightning rod, as large currents flow if lightning strikes, making it very dangerous.

4.3 Cautions before use :

- ▢ Remove all package components (include the protection foam inside the package)



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

- ▢ Check the device, accessories and document with the device as per list of packing
- ▢ Clean: make a clean of the device before use it.

4.4 Adjust the supporting Stand bar

- ▢ Please use the wrench to rotate the supporting feet clockwise to extend them, so that it rests on the ground. Make sure the freezer does not move when using.

4.5 Standing

- ▢ Do not turn on the freezer at once when the freezer is well located, must wait 24 hours for the first start.

4.6 First initial starting

Operate as follows for the first start:

1. Connect the power cord to the appropriate socket during no-loading.
2. Turning on the power-lock at the right-side of the bottom. (fa back-up cooling system is installed with, turn off its power at first).
3. Set the desired temperature point between -40°C to -86°C , for the best performance of the machine, when the user need to set the temperature below -80°C , should set the temperature at -80°C at first, once the temperature of the freezer come down to -80°C , keep it work stable at -80°C , after 3.5 hours, set the temperature below -80°C as desired. Factory setting at -80°C .
4. The high temperature alarm will be activated when the power is on. That's a normal phenomenon. Once the temperature come down to the set point, the alarm will be closed. The alarm buzzer voice could be eliminated by touch the MUTE button.
5. Articles could be stored inside the freezer after a 24-hour normal running. (Make batch treatment to store articles, each time do not over a third, after 12 hours of normal running, then store another a third.)
6. Do not open the door during the cooling process, will cause the temperature rise.
7. For back up cooling system, if installed, do not open it when the freezer is working properly. When the freezer is failure, could turn on the system to keep the inside temperature at a proper value.



CAUTION.

Compressors start delay time is 15 minutes!

- There must be an authorized person responsible for the freezer in customer's office, to check the operation status and make daily record. The inside temperature of cabinet will rise up during the failure problem, if it is not available to be repaired in a short time, take out the stored items and transfer to other safe locations.
- Prior to put the articles inside the freezer, should check if the temperature set range of this device is matching the requirement of the articles.
- Due to the Inertia of refrigeration, there is a little difference between the actual temperature displayed on the controller and the set temperature. This is a normal phenomenon.
- Our company's ultra-low temperature freezers are storage devices, do not put excess "hot" samples into the freezers at one time, or will cause compressor damage after long time working without stop. Attention to put in samples and set temperatures in batches.
- Do not put electric devices in the freezers without permission.
- Do not change the setting temperature frequently within a short time, or the current temperature may not reach the setting temperature as the inertance; Do not cover sensors in the freezer when you put in samples and keep some distances between the samples and the inner side of the freezer to make sure the cold air will circulate successfully in the freezer, or will cause the instability of the inner temperature and inaccuracy of the display temperature.

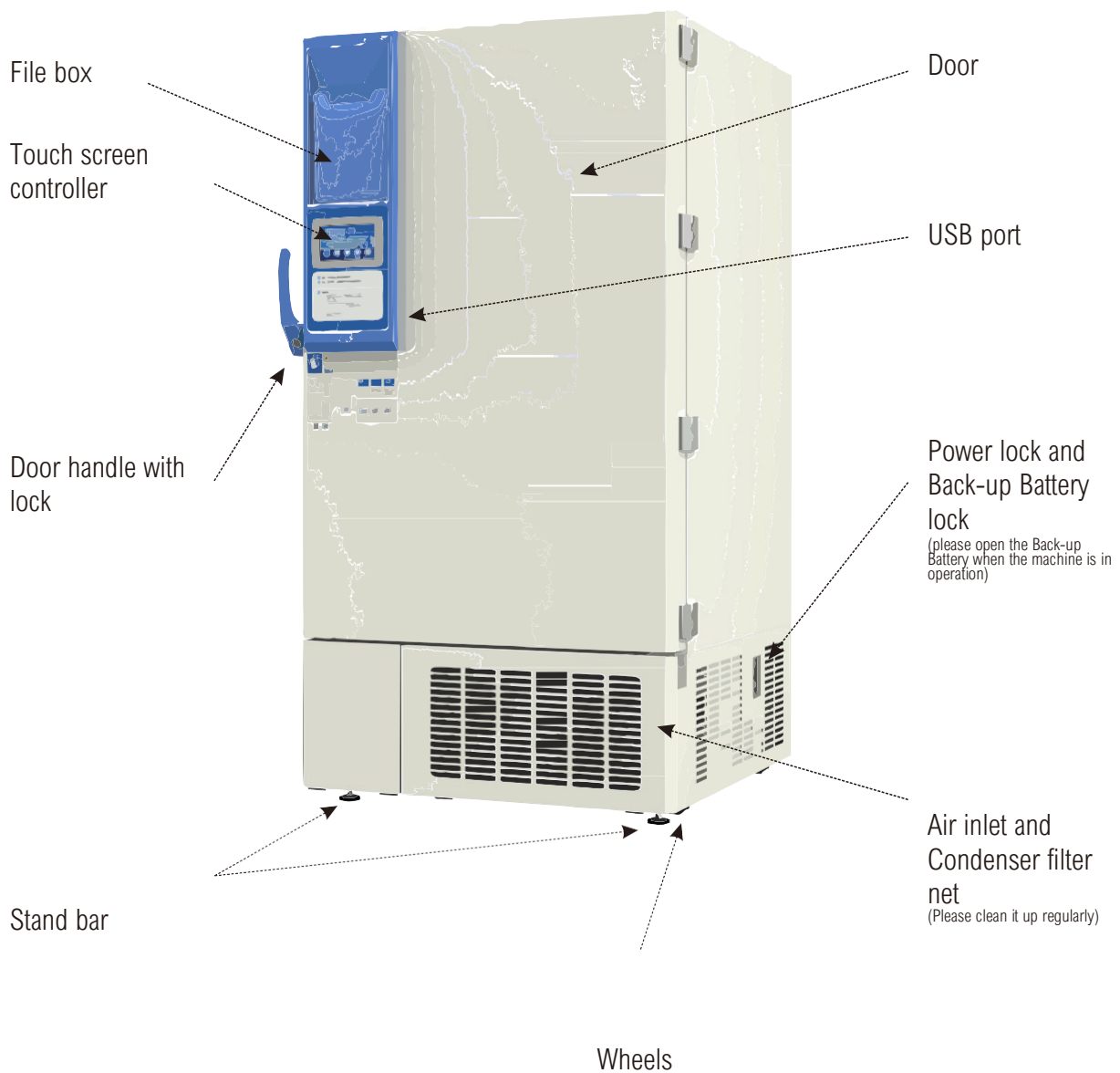
4.7 Operation after power failure

- The freezer controller has memory of the set point. The freezer will continue to follow the previous operations when restart the freezer after the power failure. The restart should be done after 5 minutes in case to damage the compressor.

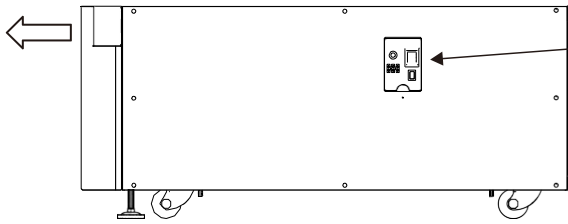


Caution: We will not be responsible for the safety of the stored articles.

5. Freezer Components

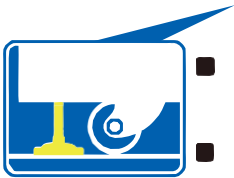



Open to clean the
Condenser filter net



Power lock and
Back-up Battery
lock

(please open the Back-up
Battery when the machine
is in operation)



- The freezer have 2 fixing supports ahead of casters after install of the freezer please use wrench  to adjust the fixing supports fix the freezer
- Before moving the freezer, please adjust the fixing supports, do not move the freezer forcibly.

Cabinet inner
seal

Inner door

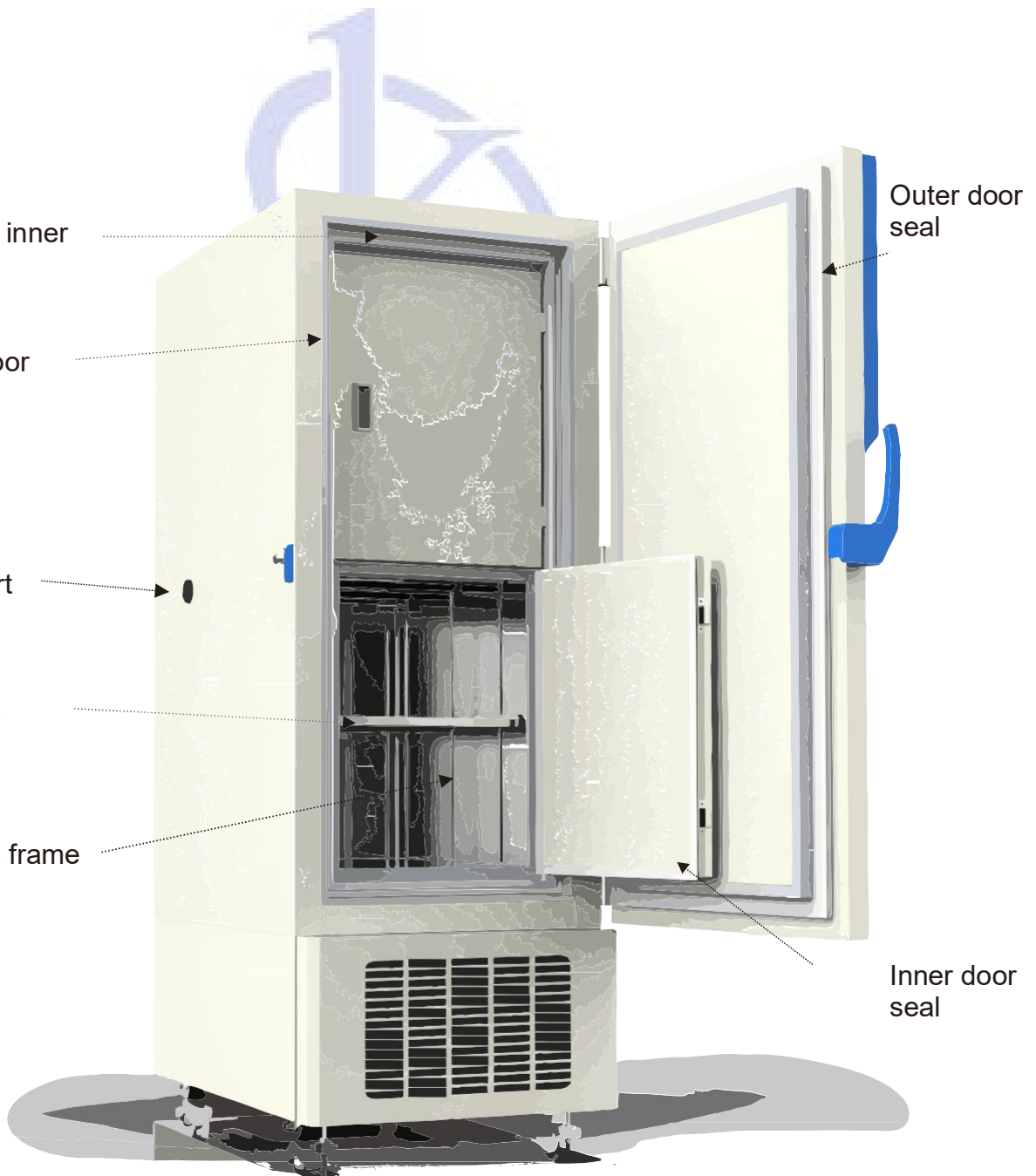
Test port

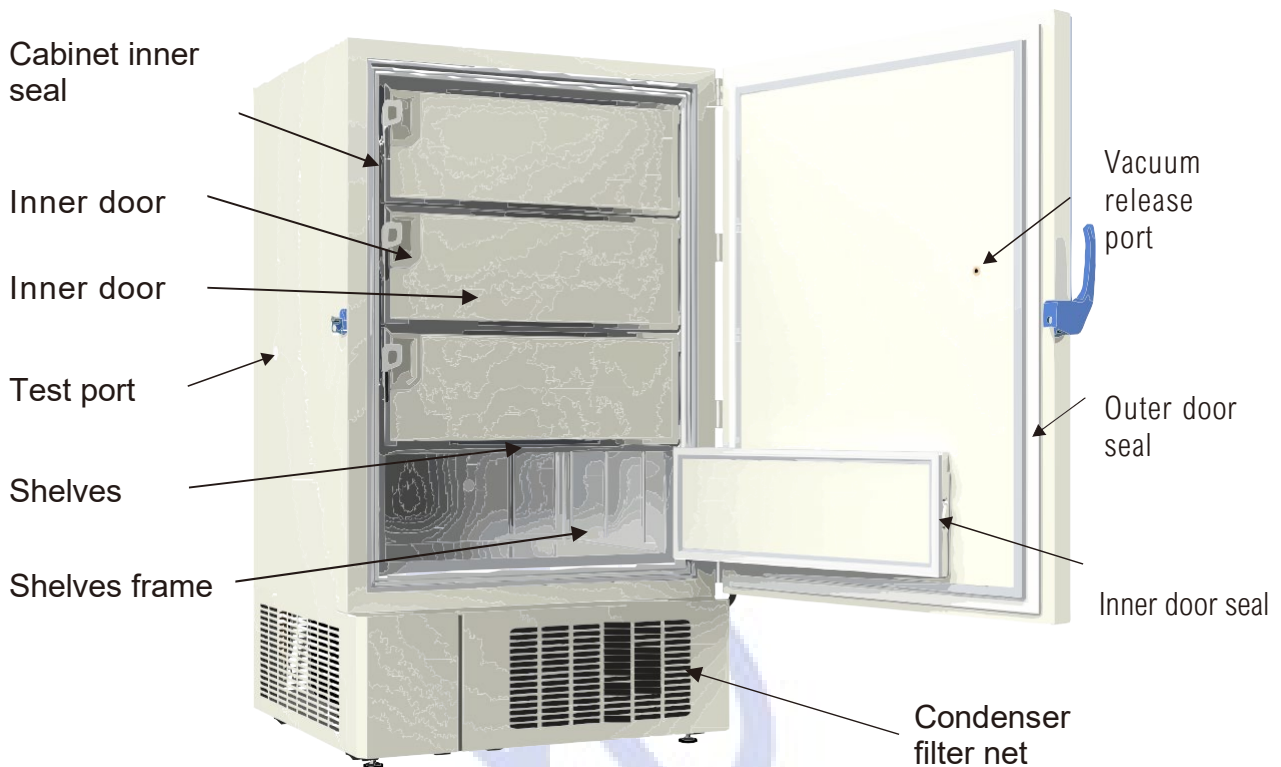
Shelves

Shelves frame

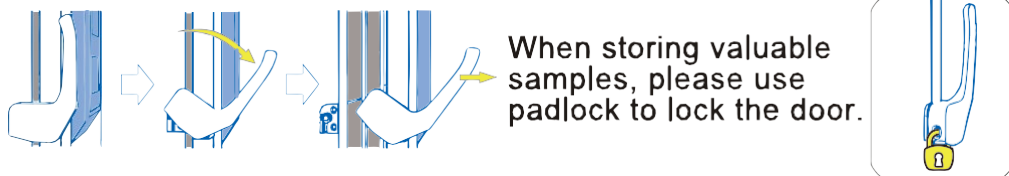
Outer door
seal

Inner door
seal





Open door:




The moisture on the cabinet inner seal, inner door seal and outer door seal shall be cleaned before using the storage box every time to prevent the door from freezing at low temperature, which makes the door hard to open.




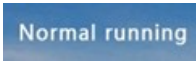
As the product's improvement, the actual product may be different from the illustration, please refer to the actual product.
The illustration is for reference only.

6. Touch screen panel function description



- 

On the normal working condition, the upper shows the real-time internal temperature inside the freezer. (For example, as 0.0°C), the lower shows the setting temperature.
- 

Fan running state: when the little symbol is rotating, shows the fan that under the chamber is working normally.
- 


Freezer running state: normally the freezer is working OK, and it shows the “Normal running”.


if it happens the alarm, it will show the bell character. The alarm system of this unit will be: “communication error with control board”, Product expired, Door open alarm, PT100-1 failure (Sensor failure), Condenser sensor failure error, System failure, High temperature alarm, Low temperature alarm, Ambient temperature sensor alarm, Abnormal Voltage, Abnormal current, Condenser overheating and High ambient temperature.




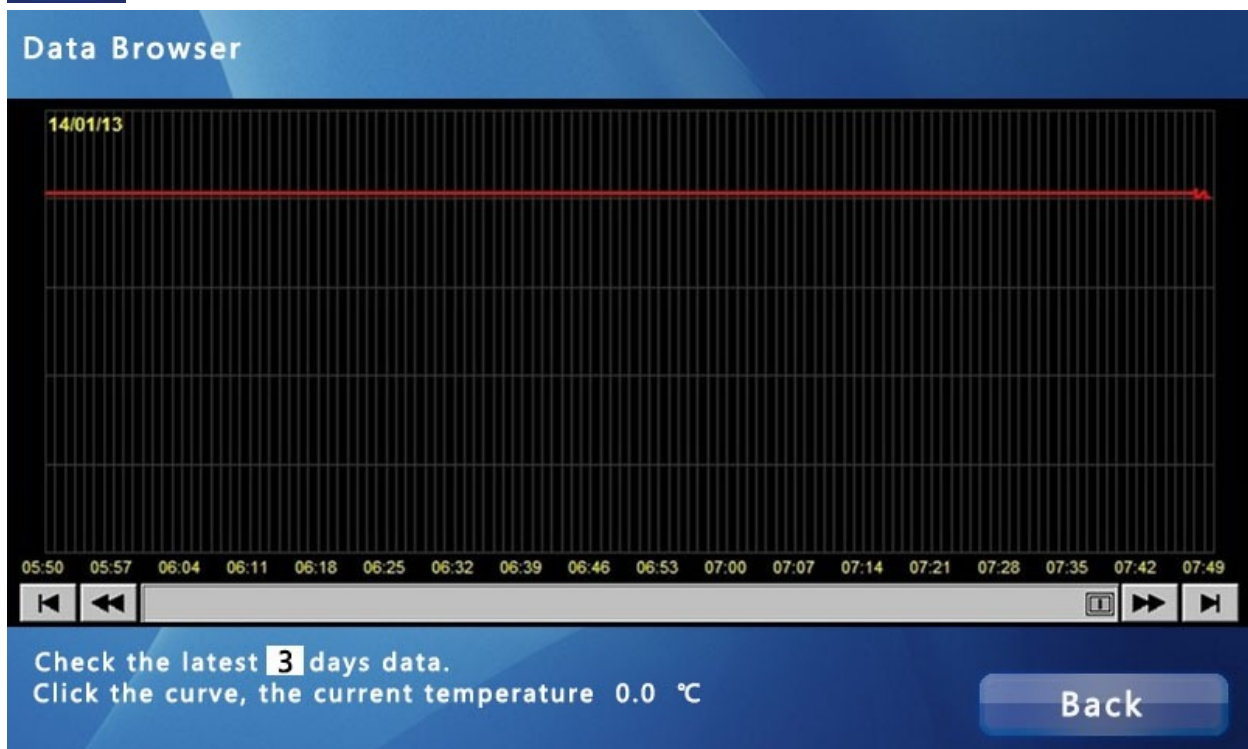
CAUTION.


Alarm flashing cannot be canceled until troubleshooting. When buzzer sound alarms, you can press mute to turn off the alarm sound.

d.  **System time.** The time is changeable by entering factory setting mode. (this operation is only authorized to local service agent).

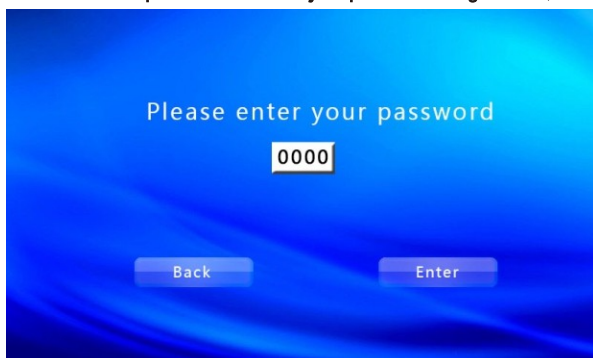
e.  **Telecommunication:** Optional function, if do not order this function, please do not touch it. The detail manual will be supplied once you choose this function.

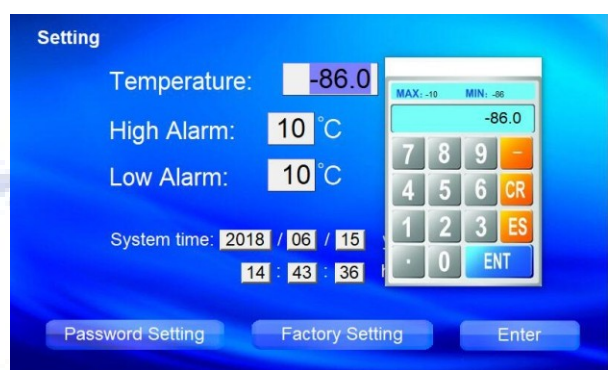
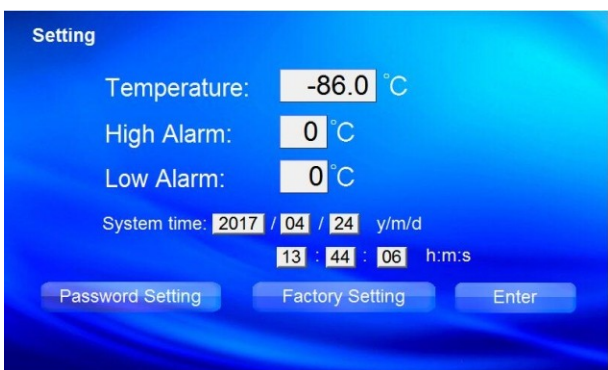
f.  **Data Browser:** The current or the latest temperature curve can be read. Please note that there is a USB access port on the right side of screen board.



g.  **Parameter setting.** The user's initial password is 0000. Before you enter the password, only can browse the data, other operations are not available.

Enter initial password. When you put the wrong number, it will show error:



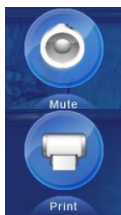


Setting temperature (Temperature): -40 ~ -86. Correct the system time via this page.

High temperature alarm deviation value set (High Alarm): Normally we suggest setting at 40°C (optional 5~15). When the internal temperature of freezer > "Setting temperature + High temperature alarm deviation value", the High temperature alarm will be activated.

Low temperature alarm deviation value set (Low Alarm): Normally we suggest to set at 40°C (optional 5~15). When the temperature inside the freezer < "Setting temperature + Low temperature alarm deviation value", the Low temperature alarm will be activated.

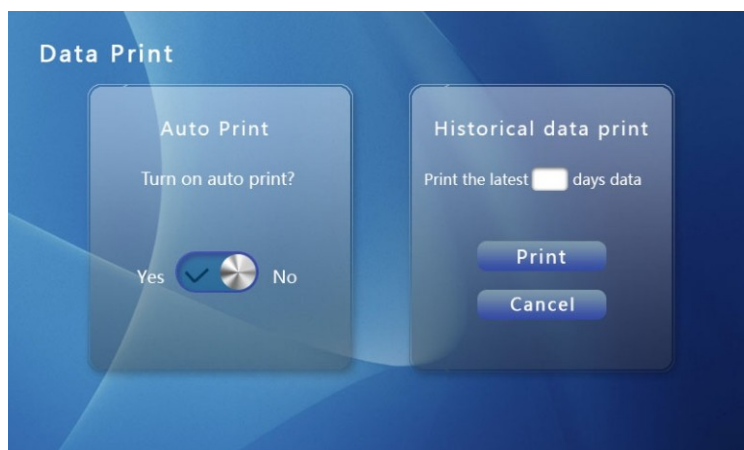
h.



Mute. This function only temporarily closes the alarm sound, will not affect the alarm displays.

i.

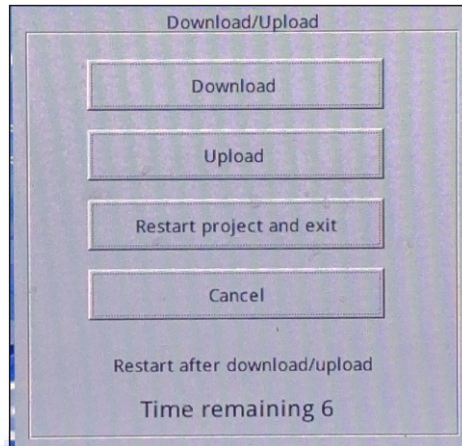
Data print(optional). The freezer is optional with printer, you can turn on the auto print. Or select the historical data print.



j. Temperature data download and read through U disk.

1. Downloading data to U disk :

(1). Find the USB port and insert the disk into the port, the screen will show dialogbox as follows, click the "Upload".

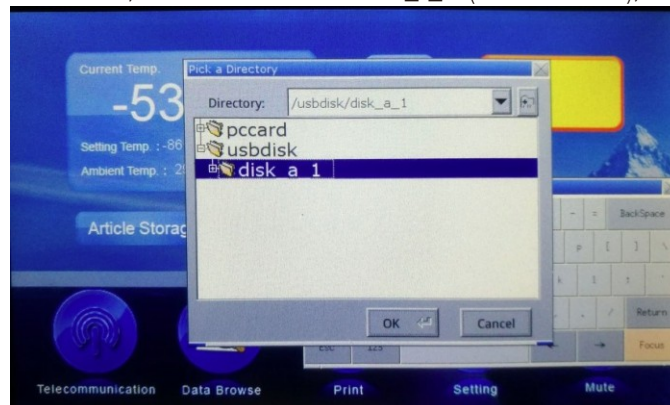


(Do not want to continue the next operation? No need to touch, will disappear in 10 seconds)

(2). Once click the "upload", will pop up the following dialog box: enter password "11111 1", and click "OK".

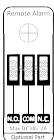



(3). choose the path to save the data, here is ordered to use: "disk_a_1" (as shown below), click "OK".




2. reading the data: Connect the U disk to computer, find:\history\data\log\001 as shown as following :



- h.  **Remote Alarm (opt):** The terminal is nearby the power switch. When there is an alarm, after 1~5 minutes it is going to be triggered.

 **Caution:**
Due to the inertia of the refrigerating, there is tiny difference between the set point and the temperature value on the display. This is a normal phenomenon.

 **Caution:**
The current and voltage vibrated a little during the running process is possible. It may have a short time alarm. It is normal when the voltage is regular at the range between $115V \pm 10\%$ or $208V \pm 10\%$.

7. Defrost • Unused • Maintenance

WARNING

Cutting off the power supply before making any repair services, to prevent from electric shock or injury.
Prepare a safety check sheet when you request any repair or maintenance for the safety of service personnel.
Make sure do not inhale any noxious gas while operate service.

7.1 Defrost

- ◆ After a period, time of working, there will be frost formed inside the freezer. If the frost inside is more than 1.5 mm, will affect the performance, also increase the power consumption. Normal defrosting is required.
- ◆ Defrost the inside wall of the freezer as follows:
- ◆ Remove the frost by the enclosed scraper. Take care not to damage the inside wall.
- ◆ Thorough defrosting:
 1. Take out and transfer all the contents to another freezer or container which contains liquid CO₂.
 2. Switch off the remote alarm.
 3. Switch off the power supply.
 4. Open the door and remove the inner lid. To remove the inner door, open and lift.
 5. Leave the freezer as it is.
 6. The water remaining in the freezer compartment should be wiped up.
 7. After cleaning is completed, restart the operation according to the procedure. Put back the articles into the sufficiently cooled freezer compartment

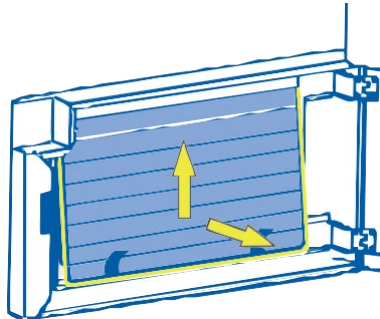
 **Caution:**
Do not use the electric heater, metal tools, sharp weapon to defrost the freezer.

7.2 Unused

- ◆ If the unit is to be stored unused for an extended period, should be powered off and be cleaned as indicated as 7.3, then must be packed over without any articles inside.
- ◆ Before reuse, use the dry cloth to wipe the water around the lining of the freezer. Especially the door seals which could be directly connected with the inner doors to prevent the door seal from been frozen by the low temperature.

7.3 Maintenance

- Cleaning of condenser filter: Clean the condenser filter once a month since a clogged filter may cause shorter compressor life as well as the poor cooling.
- Clean the condenser filter by the procedure below:



1. Open the grille by pulling it to you as shown in the figures above.
2. Take out the condenser filter.
3. Wash the condenser filter with water.
4. Replace the condenser filter and the grille.

CAUTION

Do not touch the condenser directly when the filter is removed for cleaning. This may cause injury by hot surface. Never pour water onto or into the unit. Doing so can damage the electric insulation and cause failure. The compressor and other mechanical parts are completely sealed. This unit requires absolutely no lubrication.

WARNING

Do not let children play around the freezer.

7.4 Disposal of the unit

WARNING

- ∅ Do not let children play around the freezer.
- ∅ If the unit is to be stored unused in an unsupervised area for an extended period, ensure that children do not have access and that doors cannot be closed completely.
- ∅ the disposal of the unit should be accomplished by appropriate personnel. Always remove doors to prevent accidents such as suffocation.
- ∅ When disposing of the freezer, always destroy the hinges and locks to make sure the door cannot be closed completely.

- ∅ When the equipment reaches the service life, it should be discarded.
- ∅ It must be disposed of by a qualified professional recycling agency in accordance with local regulations.
- ∅ Non-professionals must not dismantle or decompose the equipment without authorization.
- ∅ the discarded equipment should be placed in a designated area inaccessible to children to avoid danger.

8. Trouble shooting

If the unit malfunctions, check out the following before calling for service.

Malfunction	Check/Remedy
The chamber is not cooled at all	The circuit breaker of power source is active.
Compressor is nor working	The power switch at the right-side bottom of the front is not on.
Cooling is poor	The ambient temperature is too high. The latch of inner door is not closed completely. The outer door is not closed firmly. (The frost or ice between the cabinet and door gasket possibly prevents door seal.) The air intake vent is blocked. The condenser filter is clogged. Always clean the filter when the filter check lamp is lit. The door is not shut tightly. The inner door is not installed correctly. The set temperature in the controller is not set properly. The grille is blocked out. The filter is clogged. The freezer is in the direct sunlight. There is any heating source near the freezer. A rubber cap and insulation are not set correctly. You put too many unfrozen articles into the chamber
Heavy noise	If the cabinet is put on a flat floor Is the freezer so near the wall Does the fin of the fan touch the other components
E4 error code: system failure	Reason: Ambient temp is more than 32 or the freezer is so near the wall cause a bad ventilation. solution Keep 30cm clearance on all sides of the freezer keep no obstacle at the air outlet wash the filter regularly open the air-conditioner during the hot summer to keep a proper ambient temperature
EE error code: sensor failure	Check the connection of the sensor and the controller

Note: If the malfunction is not eliminated after checking the above items, or the malfunction is not shown on the above table, contact Kalstein France sales representative or agent.

Follows are not failure:

- There will be a slight crash sound of the compressor switch when the compressor is starting and stopping. The cooling time is longer than normal for the first use of the freezer. These are normal phenomenon.
- In the wet rainy season, there will be a little frost forming on the surface of the freezer, use the dry cloth to wipe it off will be OK.
- The twice opening of the door should after 5 minutes, otherwise the outside warm air will come in, the negative pressure inside the freezer caused by a sharp decline will make the door difficult to open.
- A sound of liquid flow inside the freezer is a normal sound of refrigerant circulating.
- Inner liner opposite of the gasket is a press release area of the freezer, will be some slight crack onside during the cold and hot temperature alternation. It is a normal phenomenon. Do not affect the regular use.
- Optional with printer, the screen flickers when the printer is printing, or the screen is refreshing the data.
- The screen controller will show system abnormal sometimes when the first time to start of the freezer. It is normal due to that the controller has not completely read the data, it will back to normal after the data reading. If the controller does not show regularly for a long time, should turn off the power switch and restart it.



WARNING

Prepare a safety check sheet, clean and sterilize the freezer before you request any repair or maintenance for the safety of service personnel.

This product is using flammable refrigerants, non-self-demolition (especially the components of the compressor and refrigeration pipes, etc.). If it is failure, must be overhauled by the Kalstein France service center or any other authorized representative agents.

9. Optional Parts Selection

Annex 1 GSM Message Remote Alarm

Optional function. Please refer to message alarm function instruction for the details.



Please cut off the power before install message alarm function, otherwise it may cause shock or fire.

Annex 2 CO2 backup system (Optional accessory)

CO2 back up system is a kind of auxiliary refrigeration system using liquid carbon dioxide. It provides refrigeration assistance for the equipment and ensures the temperature of the refrigeration equipment be maintained within required range for a certain time during the power off or refrigeration failure scenario. When refrigeration equipment works normally, CO2 back up system will be in standby mode. When refrigeration equipment powers off, the system works by using the built-in rechargeable battery to spray liquid CO2 to the refrigeration equipment by interval to reach the refrigeration effect. During the refrigeration equipment failure period, the system can be executed by forced operation switch to work and provide refrigeration. Please refer to operating steps on the attached operation manual for the installation and usage.



Attention:

1. Ensure the cylinder is loaded with liquid carbon dioxide.
2. The liquid carbon dioxide temperature is pretty low, avoid frostbiting from the process of the installation and usage.
3. CO2 back-up system is standby system and need to be checked monthly to prevent system failure and affect usage.
4. The environment needs good ventilation, in case of physical discomfort due to excessive carbon dioxide and insufficient oxygen.

Annex 3 Racks and Storage Boxes (Optional accessory)

Model	Dimension W×D×H (mm)	Racks/Inner Door	Number of Racks	Rack Dimension W×D×H (mm)	Number of loading 2" Storage Boxes
YR-961	440×696×1266	3/2	4×3	140×685×293	300(5×5×12)
YR-962	585×696×1266	3/2	4×4	140×685×293	400(5×5×16)
YR-963	750×696×1286	3/4	4×5	140×685×293	500(5×5×20)
YR-964	865×696×1286	3/4	4×6	140×685×293	600(5×5×24)
YR-965	877×696×1378	3/2(or 3/4)	2×6 2×6	140×685×293 140×685×351	660(5×5× 12+6×5×12)
YR-966	1022×696×1378	3/2	2×7 2×7	140×685×293 140×685×351	770(5×5× 14+6×5×14)

Note: Racks divides into A. Upright storage racks B. Side access drawer storage rack (inclusive of handles)

Annex 4 Chart Recorder (Printer)

Please refer to the chart recorder instruction if you choose this optional part.

Annex 5 Alarm Output (Optional)

When this function is selected, the output terminal installed on the back-panel bottom, and the alarm device has 1-5 minutes delay.



Attention:

To avoid electric shock, a qualified engineer or professional electrician is needed for the installation.

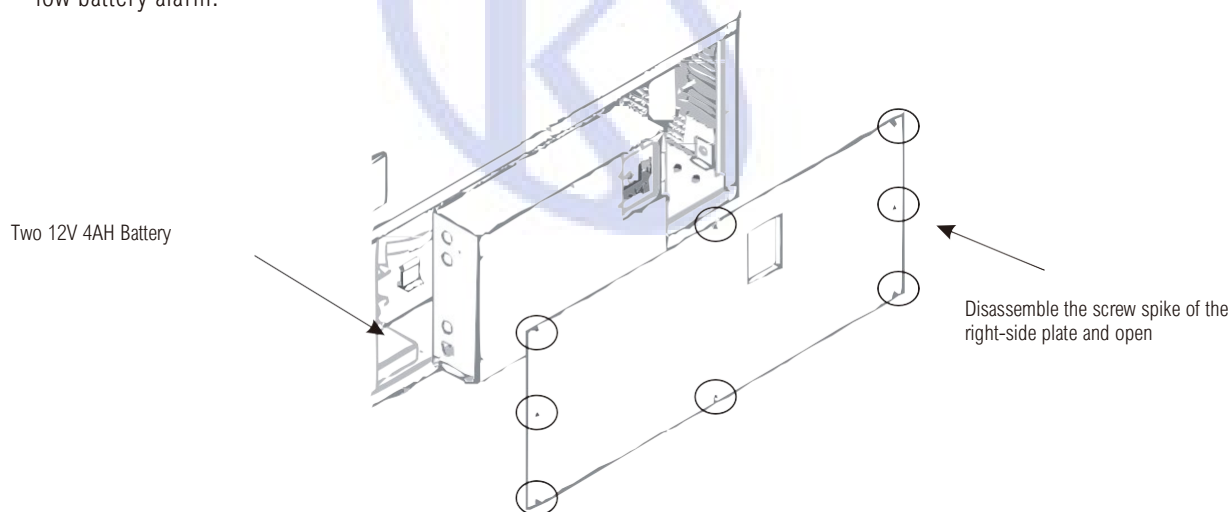
Annex 6 Power outage Alarm (Battery Maintenance, Installation, Replacements and Disposal)

1. Battery Maintenance

A. If the freezer does not run in a long time, it should be connected to the power on a regular basis (monthly), turn on the power switch to charge the freezer for a period of time, and the charging time is not less than 24 hours.

B. When the power supply is interrupted, the power lock switch should be turned off in time, otherwise the battery will lose power, which may cause permanent damage to the battery.

C. The battery is expendable, and the battery life is about 2 to 3 years. If the battery is not properly used, such as the loss of electricity or reach the battery life, it will lead to low battery alarm.



2. Battery Installation and Replacement.

A. Battery Installation Position:

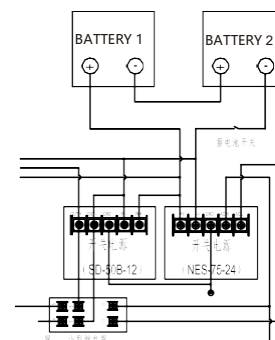
The bottom right side of the freezer, on the left side of electrical box.

B. Battery replacement:

a. Turn off the power switch and pull the plug from the socket (Pay attention to the electrical components in the electrical cabinet. Power supply must be turned off and also unplug the power cord and turn off the power switch of the freezer before opening. The electrical cabinet must be opened by qualified engineer or maintenance personnel).

b. Remove the right-side plate screw spike with a screwdriver

c. Remove the battery connection plug. Before unplugging the cord, pay attention to the sequence of the battery's positive and negative levels and the connecting line, does not upside down the positive and negative levels to prevent the damage from the installation of new batteries.



Battery Disposal:

The replacement battery is recyclable, please contact the local battery recycling agency for processing.

Note: In order to effectively ensure that the replacement tank battery meets the requirements of the control system and to avoid the impact of improper operation on the system during the replacement, it is recommended to contact the CQDIS after sales staff to replace or guide.

10. Performance Indicators

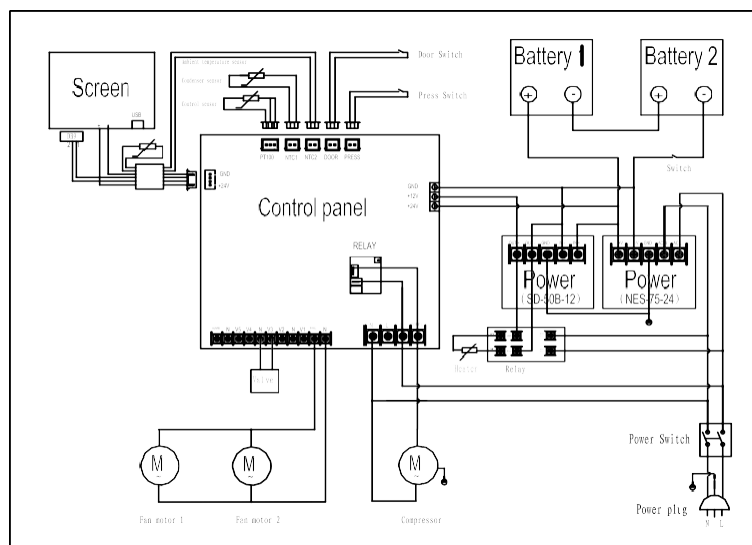
10.1 Main Specifications

Model	Climate e Type	Temp Range (°C)	Effective Capacity (L)	Rated Voltage (V~)	Rated Frequency (Hz)	Rated Current (A)	Input Power (W)	Net Weight (Kg)	External Size (D × W × H) (m m)
YR-961	N	-40~-86	398	220	50	5.85	1287	237	1041×785×1947
YR-962	N	-40~-86	528	220	50	6.57	1445	286	1041×930×1947
YR-963	N	-40~-86	678	220	50	9.1	2000	330	1025×1090×1955
YR-964	N	-40~-86	778	220	50	9.31	2050	365	1025×1205×1955
YR-965	N	-40~-86	858	220	50	10.86	2380	390	1025×1217×2005
YR-966	N	-40~-86	1008	220	50	11.8	2600	430	1025×1362×2002

10.2 Package List

ITEM	Operation manual	Key	Defrost shovel
QTY	1	1*2	1

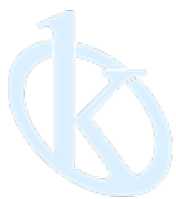
10.3 Circuit



11. Specifications

Name	Ultra-Low Temperature Freezer	
Model	YR-961/YR-962	YR-963/YR-964/YR-965/YR-966
Ektexine	Epoxy polyester powder spray coated steel plate	Epoxy polyester powder spray coated steel plate
Chamber	Stainless Steel (optional)	Stainless Steel (optional)
Outer Door	Epoxy polyester powder spray coated steel plate	Epoxy polyester powder spray coated steel plate
Inner Door	Epoxy polyester powder spray coated Aluminum plate	Epoxy polyester powder spray coated Aluminum plate
Shelves	Stainless steel shelves	Stainless steel shelves
Test Port	2	2
Insulation	VIP+Rigid Polyurethane	VIP+Rigid Polyurethane
Compressor	Hermetic	Hermetic
Condenser	Finned Type	Finned Type
Evaporator	Copper Pipe	Copper Pipe
Refrigerant	Mixture	Mixture
Temp. Controller	Microprocessor control system	Microprocessor control system
Temp. Display	Touchscreen Display	Touchscreen Display
Temp. Sensor	Pt100	Pt 100
Alarm Devices	Communication failure between main board, Product overdue alarm(setting needed),Door Open alarm, PT100-1 failure alarm, Condenser sensor failure alarm, High temp alarm, Low temp alarm, Ambient temp sensor failure alarm, AC voltage abnormal alarm, condenser overheat alarm, Ambient temp high alarm.	

*If there is any product improvement, the technical data and electrical circuit diagram shall be subjected to the nameplate.



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