Biomedical Freezer

USER MANUAL

for after sales use

Product model 1: MD-25L518
Product model 2: MD-40L518

Warning notices: Before using this product, please read this manual carefully and keep it for future reference.
The design and specifications are subject to change without prior notice for product improvement.
Consult with your dealer or manufacturer for details.

for after sales use

Midea Biomedical Co., Ltd
No. 88 Yulan Main Road, Hi-Tech Development Zone, Hefei,
230088 Anhui, P.R. China



Standards:

EN 61010-1: 2010/A1:2019
EN IEC 61010-2-011: 2021/A11:2021
EN 61326-1:2013
EN IEC 61326-1:2021

CONTENTS

Product Features ---- 3

Product Function ---- 3

Precautions and Safety Measures ---- 4

Precautions for Use ---- 7

Handling ---- 8

Door Space Requirements ---- 8

Product Installation ---- 9

Product Components and Overview ---- 14

Operating Instructions ---- 15

Maintenance and Care ---- 22

Troubleshooting and Maintenance Services ---- 25

Specifications ---- 26

Packing List ---- 27

for after sales use



Warning; flammable material

WARNING: Ensure all ventilation openings are not obstructed.

WARNING: Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

WARNING: Do not damage the refrigerant circuit.

WARNING: The packaging base at the bottom of this series of products must be removed before use.

WARNING: When moving this series of products, take care that the bottom foot does not touch the power cord.

WARNING: The bottom front wheel brake of this series of products need to be locked after moving to the designated position.

WARNING: This series of products need to be left to stand for 12 hours before initial power-up.

WARNING: When this series of products are just connected to the power supply, do not immediately put the items in to it. After running for a period of time, when the temperature inside the product drops to the set temperature, then put the items in batches.

Refrigerant and cyclopentane foaming material used for the appliance are flammable.

Therefore, when the appliance is scrapped, it shall be kept away from any fire source and be recovered by a special recovering company with corresponding a qualification other than being disposed of by combustion, so as to prevent damage to the environment or any other harm.

The safety of any system incorporating the equipment is the responsibility of the assembler of the system.

IMPORTANT:

Flammable gas and refrigerant used. It is the consumer's responsibility to comply with Federal and Local regulations when disposing of this product.

Suggestion: Cut off the pipe line and drain the refrigerant without any open fire around.

WARNING: If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

for after sales use



Warning; flammable material



Warning: low temperature/freezing conditions, frost-bite HAZARD(MOD)



Warning: crushing of hands



The product with the symbol reads “warning terms”

CYCLOPENTANE

The product with this symbol reads “cyclopentane blowing”



Protection of the environment

This symbol attached to the product means that it is an appliance whose disposal is subject to the directive on waste from electrical and electronic equipment (WEEE). This appliance may not in any way be treated as household waste and must be subject to a specific type of removal for this type of waste. Recycling and recovery systems are available in your area (waste removal) and by distributors. By taking your appliance at its end of life to a recycling facility, you will contribute to environmental conservation and prevent any harm to your health.

for after sales use

PRODUCT FEATURES

Scope of application

It applies to low-temperature storage: drugs, vaccines, biological products, reagents, etc.

PRODUCT FUNCTION

Accurate temperature control Data can be traced back

- High-precision temperature control with a display accuracy of 0.1 °C.
- The temperature inside the freezer is uniform and controllable, the temperature range is -10 ~ -25 °C (Product model 1) and -20 ~ -40 °C (Product model 2) can be adjusted, and the temperature control is accurate.
- The USB interface is configured, and the temperature data can be traced back to the source, which can realize the function of data query and temperature data storage.

Efficient refrigeration system Good heat preservation effect

- International renowned compressor, optimized refrigeration system, strong refrigeration capacity, safe and reliable refrigeration system.
- High-performance thermal insulation layer for good thermal insulation effect.
- Multi-layer three-dimensional sealing design effectively reduces cold loss and reduces frost formation.

Multiple alarms Safe and stable operation

- With perfect sound and light alarms, it can realize high and low temperature alarms, power failure alarm, sensor fault alarm and other functions. Alarm temperature value can be set based on demand.
- Safety door lock design ensures safety.

Other function introduction

- The temperature inside the freezer and the ambient temperature can be displayed. The user can set the high temperature, low temperature alarm value and set the temperature value according to the requirements.
- With remote alarm function to ensure real-time and controllable equipment, safe and stable operation.

Note :

The above features are not available for all models. Please refer to the specific functions of each model for detailed configuration.

Due to the continuous product optimization, the product you get may not be exactly the same as the illustration in this manual, we apologize for any inconvenience this may cause.

for after sales use

PRECAUTIONS AND SAFETY MEASURES

Dear User :

Hi! Thank you for using Biomedical freezer. For your convenience to understand this manual, use the product, and prevent personal injuries and goods damages, please read the following instructions thoroughly.

Precautions and Safety Measures



Documents need to be consulted in ⚠ all cases of marking in order to ascertain the nature of the hazard beforehand and any countermeasures that must be taken.



WARNING

Failure in complying matters highlighted in warning signs may cause serious casualties.



NOTE

Failure in complying matters highlighted in caution signs may cause casualties, or damages to the freezer and related property losses.



Actions or operations that must be prohibited.



Behavior or operation that must be observed.

⚠ WARNING



- Please use a power socket with a ground wire to prevent electric shock. If the power socket is not grounded, the grounding wire must be installed by professional technicians.
- Always place the freezer firmly on a flat floor of the chamber with due care to prevent overturning. If the ground is not stable or the place is not suitable, the freezer might be overturned or people will be injured.
- If the power cord needs to be lengthened, the sectional area of the lengthened cord shall not be less than 2.5 mm^2 . At the same time, the length is not longer than 3 m. Otherwise, it may cause a fire or electric shock.
- In case flammable gas leakage, it is necessary to close the gas leakage valve, open the doors and windows, ventilate and exhaust, and do not plug in or pull out the power plug of the freezer, otherwise it may cause explosion and fire.
- Only professional technicians or after-sales maintenance personnel can maintain the freezer. Otherwise, electric shock and fire may be caused.
- Please use the special power supply indicated on the nameplate of the freezer, otherwise it may

for after sales use

cause fire or electric shock.

- If the voltage is lower than 198 V or higher than 264 V, it is necessary to install a more than 4000 W automatic voltage regulator suitable for motor load.
- The power cord of this freezer is equipped with a three-wire (grounded) plug, which meets the standard three-wire (grounded) socket of 10 A. Under no circumstances should the grounding pin of the power cord be removed. Make sure that the power plug and socket are plugged firmly and reliably, otherwise it may lead to fires.
- When unplugging from the power socket, hold the power plug firmly and remove it. Do not pull the wires of the power plug directly. If you pull the wire by hand, it may cause electric shock or fires due to short circuit.
- If the freezer is not working properly, please unplug the power plug. It may cause electric shock or fires if it continues to operate under abnormal conditions.
- When the freezer is not used for a long time, unplug the power plug to prevent electric shock, leakage or fire caused by aging of the power cord.
- If the freezer is idle for a long time in an unsupervised area, make sure that the child does not approach the freezer and that the disposal of the freezer is to be carried out by the appropriate personnel. The door should be removed to prevent accidents such as suffocation.

Warning: Please abandon the refrigerator according to local regulators for it use flammable blowing gas and refrigerant.

REFRIGERATING EQUIPMENT to avoid either damaging the REFRIGERANT tubing, or increasing the RISK of a leak.

- Make sure all vents are not blocked.

> No flammable, explosive dangerous goods or volatile goods should be discharged in freezer, and do not use combustible sprays near the freezer, otherwise it may cause an explosion or fire.

> Do not store corrosive items such as acids and alkalis in the freezer. Otherwise, the internal components or electrical parts of the freezer may be damaged.

> Packaging plastic bags should not be placed where children can reach them, because plastic bags may cause suffocation.

> Do not climb on the freezer or put the articles on the freezer, otherwise the freezer will fall over and cause personal injury or damage to the freezer.

> Don't use the freezer in the open air. When the freezer is wet by rain, it may cause electric leakage or electric shock.

> Freezers should not be placed in damp places or places vulnerable to splashing water. Otherwise, electric leakage or electric shock will be caused due to insulation reduction.

> Do not pour water directly on the freezer, otherwise it may cause electric shock or short circuit.

> Users are not allowed to disassemble, repair or modify the freezer by themselves. Otherwise, it may cause fires or personal injuries due to improper operations.

> Do not ground the freezer through gas pipe, power supply pipe, telephone line or lightning rod. The above grounding may cause electric shock or other hazards.

> Do not touch any electrical parts such as power plug or any switch with wet hands, otherwise electric shock may be caused.

> Do not put containers or heavy objects containing water on the freezer. If the object falls, it may cause personal injuries, and the outflow of water will reduce the insulation and cause leakage or electric shock.

> Do not insert metal objects such as nails or wires into any openings and gaps of the freezer or into any vent used for internal air circulation, otherwise electric shock or injury may be caused by the above objects contacting with moving parts.

> Do not drag, wind, bundle power cord, and do not damage the power cord plug. Damaged

for after sales use

power cords or plugs may cause fire or electric shock

> Do not use a loose plug power cord, which may cause fire or electric shock.

> Do not put glass bottles or canned items in boxes that may crack and cause injury to people.

⚠ NOTE

- There should be no obstruction around the freezer, and the ventilation should be smooth.
- It is necessary to check the freezer setting when restarting the freezer after power failure or power off. Changes in settings may damage stored items.
- Once the power of the freezer is cut off the power, it will take more than five minutes to turn it on again to avoid damage to the compressor or system.
- Be careful to check the condenser in time and clean it regularly. A condenser filled with dust can cause the temperature of the storage box to rise or malfunction (suitable for models with bottom condenser)
- If there is dust in the power plug, it should be cleaned up in time. Dusty plugs or improper plugs may cause heat or ignition.
- Gloves should be worn during maintenance to avoid touching the sharp edges or corners and injuries to personnel.
- Do not take storage items directly by hand, direct hand contact with frozen items or the inside of storage boxes may cause frostbite.
- Hold the handle to close the door so that the door will not catch your fingers.
- When moving freezers, the inclination angle should not be more than 30 degrees.

> When transporting the freezer, be careful not to trip over freezer to prevent damage to freezer or personal injury.

> Please do not use the door handle to lift or carry the equipment, in case of injury to the freezer or personal injury.

> The refrigeration circuit must not be damaged.

> Do not use electrical appliances in the freezers except for the type recommended by the manufacturer.

for after sales use

PRECAUTIONS FOR USE

* When the storage box is running, the left side, right side, and rear side of the storage box may heat up. This is not a fault, it is to prevent condensation around the shell of the box, and the condensation pipe is installed.

* Before putting articles into the equipment, please make sure that the temperature in the storage room has reached the set temperature, and then put the articles in batches. The volume of the articles in the box should not exceed 1/3 of its volume at a time to prevent the temperature from rising too much.

* The temperature display value of the equipment is to show the temperature at the temperature sensor in the storage room. There is a certain gap between the displayed temperature and the actual temperature at the center of the equipment when the equipment just runs, but as the equipment enters a stable state, the displayed temperature will gradually approach the actual temperature.

* The equipment box body is provided with a detection hole so as to lead out the test line in the box during the test. After the test line is led out, it is necessary to plug the test hole with insulating material again, otherwise the temperature in the box may not reach the set temperature value, and condensation will appear around the outside of the through hole (applicable to the test hole items).

* Please use diluted neutral cleaner to clean the equipment, and do not use brushes, acid, gasoline, soap powder, polishing agent or hot water to clean the equipment, otherwise the painted surface and plastic rubber parts may be damaged. Attention: Do not use volatile solvents such as gasoline to clean plastic and rubber parts.

* When the equipment is not used for a long time, the power should be cut off and the battery switch should be turned off at the same time (for projects with backup batteries).

* Each time you access the items, please try to reduce the time to open the door to avoid large effects in temperature inside the box.

* After the door is opened, the temperature inside the box will rise sharply for a short time. This is a normal phenomenon, and this situation will return to the set temperature after normal operation after the door is closed.

* After the freezer is operated for a period of time, a layer of frost is formed on the inner wall of the freezer and the evaporator. If the frost layer is too thick, it will affect the cooling effect of the freezer and increase the power consumption. Therefore, at intervals, when the frost layer reaches 5 mm, apply the attached shovel to defrost.

* Before defrosting, please remove the frozen items from the freezer and place them in an environment suitable for storage, so as not to raise the temperature and damage the items.

* There are many refrigeration coils in the freezer, do not use sharp instruments such as knives, ice chisels or screwdrivers to remove the frost on the inner wall. When defrosting, be careful not to scratch the inner wall, otherwise it will cause the freezer to fail.

for after sale use

HANDLING

❶ Protect the product in moving it, please move it by forklift.

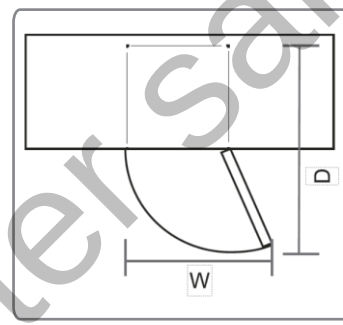
❷ Remove all packing materials and bottom cushion, the move into house for placement.

❸ After moving it to appropriate location, wait for 24 hours before power on.

DOOR SPACE REQUIREMENTS

The unit's door must be able to open fully as shown.

W×D ≥1622mm*1672 mm (Product model 1 / model 2)



for after sales use

PRODUCT INSTALLATION

Installation environment

- When used indoors, it is prohibited to install the freezer in an open environment.
- Ambient temperature: 16 °C to 32 °C, the most ideal temperature is 18 °C to 25 °C, and air conditioning system should be used when necessary.
- Environmental humidity: lower than 80%Rh. If the maximum ambient temperature is 32 °C, the humidity should be below 60% Rh.
- Pollution degree: (2), a large amount of dust environment should be avoided.
- Avoid mechanical sway or vibration.
- The altitude of working position of freezer is lower than 2000 m.
- Input voltage: within 220~240 V ± 10%/50 Hz.
- Product overvoltage level: 2
- Product waterproof grade: IPX0
- The freezer is sensitive to ambient temperature. When installed in other environments than the one aforesaid, the freezer can't operate normally. Please improve the environment before use.

Installation Site

- It cannot be installed in a narrow and confined space, and the door body of the room where it is placed cannot be smaller and lower than this equipment. At least the normal entry and exit of the equipment should be ensured to avoid difficulties in maintenance when the equipment fails. If the equipment cannot be repaired in time, it may cause damage to the stored items.
- The installation floor must be solid, flat, non-combustible and able to bear the weight of the equipment during operation.
- Provide the good ventilation condition and avoid direct sunlight.
- Each device needs to use a separate power outlet, please ensure that the power outlet should withstand a current of ≥10 A, and the plug and socket are firmly connected.
- Check the working voltage before use. In areas with unstable voltage, a voltage stabilizer suitable for device load should be considered for voltage stabilization, and the power of the voltage stabilizer should be greater than 4000 W to ensure that the input voltage requirements in the installation environment can be met.
- Equipment shall be reliably grounded. If the power cord socket is equipped with grounding wire, check whether the grounding is good before use. If the socket is not equipped with grounding wire, it must be installed by professional engineers and technicians.

for after sales use

WARNING

Do not ground the freezer through gas pipe, water supply pipe, telephone line or lightning rod.

After installation, the power plug must be accessible, so that the power cord can be unplugged in time in case of emergency. Nothing should cover the vent of the freezer.

NOTE

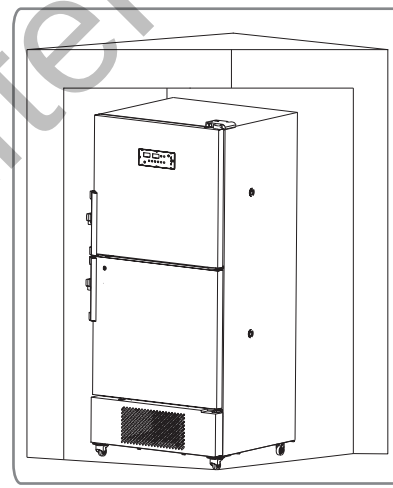
As the environmental temperature has a great impact on the equipment, if the above environmental requirements cannot be met, the equipment may not be able to operate normally. Please improve the environment before using the equipment.

Preparation before use

1. Remove the outer packaging of all products (including the protective foam in the packing box).

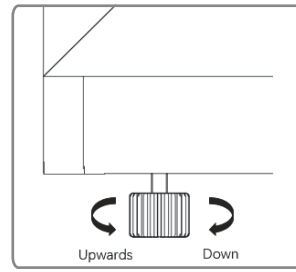
2. Check the random accessories; please check the contents in the box according to the packing list. If there is any discrepancy, please contact the after-sales service in time.

3. Placement conditions: a gap of at least 30 cm should be left around the freezer to facilitate ventilation and heat dissipation.

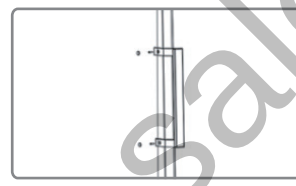


for after sales use

4. Use a wrench or manually rotate the horizontal support foot clockwise to extend the horizontal support foot downward to support it on the ground, ensuring that the storage box does not move while in use (applicable with the support foot item).



5. Remove the handle, align the handle with the hole on the right side of the door, secure the door handle to the door with a screwdriver, and fasten the handle trim cover to the upper and lower ends of the handle.



⚠ WARNING

Don't put the plastic bags in the place where child come into contact, so as to prevent suffocation accidents.

for after sales use

First power on

When using the device for the first time, please follow these steps:

After the device is placed, leveled and cleaned, it needs to be left for more than 24 hours before it is connected to the power supply to ensure the normal operation of the device

Under no-load condition, connect the power cord to a special socket with appropriate specifications

After powering on, see if the display lights up, and turn on the battery switch.
You can set the current system time by referring to “Modifying the time of the data recorder system” on page 17

Set the required temperature, do not put items in the empty freezer, turn on the power, check whether the operating temperature of the equipment can reach the set temperature, and observe the normal operation of the equipment for more than 24 hours to ensure that the performance of the freezer is normal

Please store items in batches, which is not exceeding 1/3 of the box volume at a time. The next batch of goods can only be put in after the device can be shut down normally for more than 8 hours

Try not to open the door during the cooling process, otherwise it will cause the temperature to rise

for after sales use

Operation after power failure

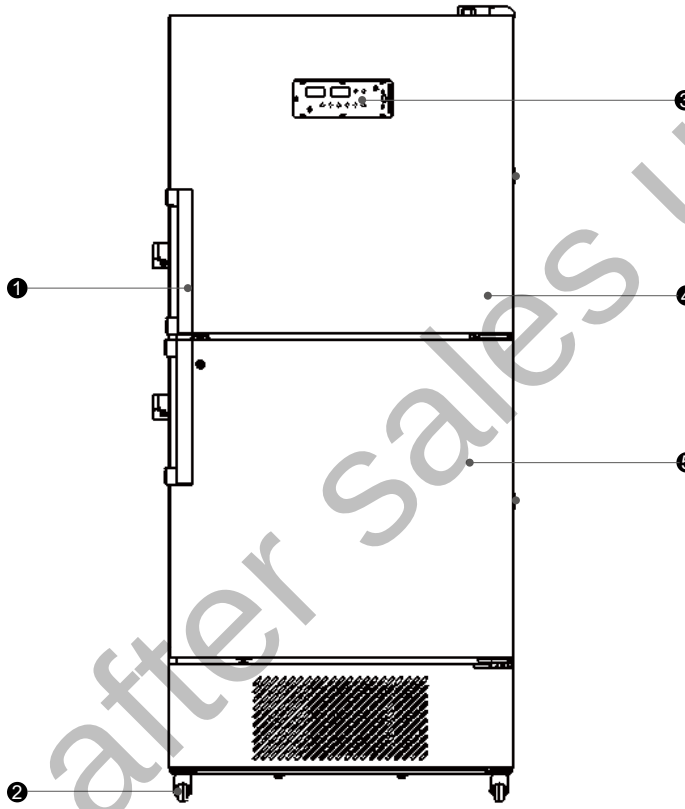
The device has the memory function for the set value. When the power is restored after the power failure, the device will continue the operation according to the parameters set before the last power failure.

⚠WARNING	• Once the power of the freezer is cut off, it will take more than five minutes to turn it on again to avoid damage to the compressor or system. • When the freezer is not used for a long time, unplug the power plug and turn off the battery switch (applicable to battery items) to prevent electric shock, leakage or fire caused by aging of the power cord. • If the freezer is left idle for a long time in an unsupervised area, please ensure that child do not approach the freezer and the door cannot be completely closed.
	• This product should be handled by a special person. Check the operation every day and record it. In case of failure or shutdown, the temperature in the storage box will rise. If it cannot be repaired in a short time, the item should be transferred to other places that meet the temperature requirements and stored to avoid damage to the item. • This product is a medical low-temperature freezer. Please make sure that the required temperature of the stored items is consistent with the temperature range inside the freezer, so as to avoid damage to the items and economic losses. • Due to the refrigeration inertia, the display temperature and humidity of this product are different from the actual temperature and humidity in the box, which is a normal phenomenon.
	• All freezers are for preservation. Hence, it is strictly forbidden to put too many relatively hot items at one time, which will cause the compressor not to stop for a long time, the temperature drops slowly and affects the service life of the compressor. Stuff must be put in batches, and the temperature should be lowered step by step until it falls to the required temperature! • The refrigeration circuit shall not be damaged. • Unlicensed electrical appliances are not allowed to use inside the freezer. • Do not use any mechanical tools or other means not approved by the manufacturer to accelerate the defrosting process.

for after sales use

PRODUCT COMPONENTS AND OVER-VIEW

Appearance Diagram



Product model 1/ model 2 diagram

1	Outer door handle	4	Door of the refrigerating chamber
2	Bottom wheel	5	Door of the freezing chamber
3	Control Panel		

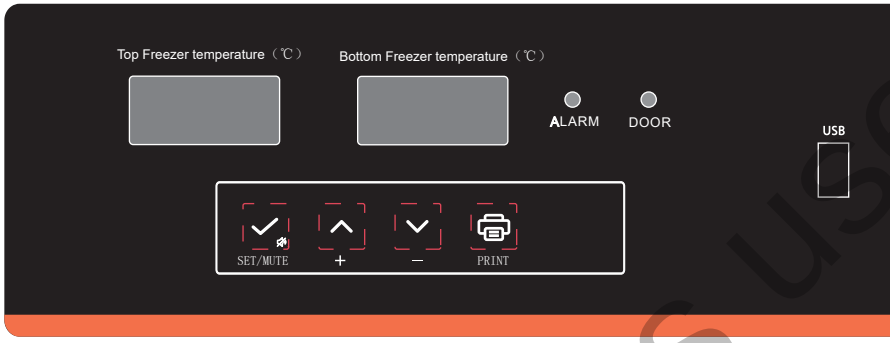
Due to the improvement of products and different models, the actual products may be different from the schematic drawings. Please refer to the real objects!

The sketch is only used for a brief illustration of the functional parts.

for after sales use

OPERATING INSTRUCTIONS

Display panel



Function introduction

Temperature display window: under normal operation, the upper chamber temperature and lower chamber temperature are displayed respectively in °C.

1. Door indicator

- The indicator lights up when the upper or lower chamber door is open. After more than 1 minute, the door opening alarm indicator lights up and the buzzer gives an alarm. “door1” flashes in the display window in the upper chamber when the upper chamber door is not closed. “door2” flashes in the display window in the lower chamber when the lower chamber door is not closed.

2. Alarm indicator

- The indicator light is off when the product is running normally and is on during abnormal operation.

Automatic lighting state, the door opens and the lighting is automatically lit, the door is closed and the lighting is closed; the user can also automatically turn on the lighting, at this time, the lighting is not controlled by the opening and closing door, and it is always lit. Only when you press the light switch again to turn off the manual lighting and turn on the automatic lighting can the lighting enter the automatic lighting state.

(Printer optional): This product can be equipped with printing function.

> Automatic printing:

When the print interval Pt (default 10) is not 0, the printer automatically prints the current data every Pt minutes.

> Manual printing:

When the key is not locked and the operating voltage is normal, press the print key to display “P01” on the right digital tube, press the up adjustment key or down adjustment key to adjust the setting range “P01 – P07”, press the set/mute multiplex key or the print key to print the data recorded in the number of days (1 – 7) pushed forward from the current date. P00 is to cancel this manual printing.

for after sales use

Note : During the manual printing, when the print interval Pt (default 10 minutes) is less than the record interval Scy (default 10 minutes), print at the record interval; the remaining print intervals are printed at an integer multiple of the record interval Scy.

Reduce the parameter value in the parameter setting mode. For example, reduce the set temperature when setting the set temperature. Press and hold the key when setting the parameter value, the parameter can be reduced quickly.

Increase the parameter value in the parameter setting mode. For example, increase the set temperature when setting the set temperature. Press and hold the key when setting the parameter value, the parameter can be increased quickly.

Setting / Mute key: When there is no alarm state and the key is not unlocked, press down the key, the normal display resumes after displaying the ambient temperature for 5 seconds. Press and hold the key for 3 seconds to access the user menu in the unlocked state.

3. Unlocking

- In the normal operation state, press and hold the and keys for 3 seconds, the upper digital tube displays “PS1”and the lower digital tube displays the parameter code “0000”. Press the key, enter the password “0005” (When entering the user menu password, enter “0099” to restore the key lock password to the default “0005”.) Press the ,the system is unlocked.

4. Locking

- After 30s of inactivity after unlocking, or after pressing and for 3 seconds at the same time, after the buzzer sounds once, press the key lock at this time.
- When the buzzer gives an alarm (including cabinet over-temperature alarm, door opening alarm, sensor fault alarm, etc.) and the button is not unlocked, press down , for the first time, the buzzer stops sounding and the normal display resumes after displaying the ambient temperature for 5 seconds (Pressing the mute button can only turn off the buzzer for this abnormal state alarm. If the fault is not removed after 5 minutes of muting, the buzzer will alarm again.) Pressing again will trigger the buzzer alarm, display the ambient temperature for 5 seconds, and then resume displaying the internal temperature of the cabinet and the alarm state.
- When the key is unlocked, can be used as a setting key. When setting the parameter mode in the unlocked state, press this key to display the parameter value and parameter name. If the key is pressed down for 3 seconds, the setting is saved and the normal screen will be returned to.

5. USB port

- Automatic USB data export: when the USB flash disk is connected to the USB interface, the buzzer will sound once after the data transmission is started. The upper digital tube will display "USb", and the lower digital tube will display "on". PDF files of the data of the current month and the previous month will be generated in the USB flash disk. During data transmission, the buzzer sounds regularly. After the data transmission is completed, the buzzer will sound once, and the lower digital tube will display "End".

for after sales use

⚠ **Note :** When there is less data, the digital tube does not display “USb”, “on” and “End”.

6. Manual exporting of the USB data

- When the key is unlocked and no file is being generated, connect the USB flash disk and press the ^ key for 3s until the digital tube displays “d01”. Press the ^ or v key to adjust “d00~d12”. Press the ✓ key, and the file generated this time (d00) or the PDF file with the data recorded in the forward month (1-12) is canceled inside the USB flash disk. The buzzer sounds regularly during data transmission. After the data transmission is completed, the lower digital tube displays “End”, and the display returns to normal after a few seconds.

⚠ **Note :** When the digital tube flashes and displays “LoF”, the recorder is not started. Press down the ^ and ✓ keys simultaneously for 3 seconds, “LoF” disappears and the recorder starts.

7. Independent closing of the upper or lower chambers

- It is used for inter-chamber deactivation, or separate frosting.
- In the normal operation mode, first unlock the panel, and press and hold the keys ☎ and ^ together to disable or enable the upper chamber. The upper digital tube flashes and displays “off” when it is in the off state; otherwise, it is in the on state.
- In the normal operation mode, first unlock the panel, and press and hold the keys ☎ and ^ together to disable or enable the lower chamber. The lower digital tube flashes and displays “off” when it is in the off state; otherwise, it is in the on state.

8. Recorder time setting instruction

- In the unlocked state, press and hold the combination key “Set/Mute” + “Down” key for 3 seconds to enter the time setting mode. The digital tube displays n, and pressing the “Up” key or “Down” key will sequentially display the corresponding parameters in the table below.

Menu	Menu description	Setting range	Remarks
n	Set the time of recorder module - year	10~50	--
y	Set the time of recorder module - month	1~12	--
r	Set the time of recorder module - day	01~31	--
s	Set the time of recorder module - hour	00~23	--
F	Set the time of recorder module - minute	00~59	--
Pt	Printing interval	0~240	10min
SCY	Temperature data recording period	0~240 0: Shielded recorder	10min

for after sales use

Press ☑ button to switch parameters n-y-r-s-F-Pt-SCY

Press ^ button or ˅ button to set the parameter value. After setting, press and hold ☑ button to save the parameter.

Note : Operation to modify the time and recording interval will cause the recorder data to be cleared, and the data recorder will be restarted. The digital tube will display “LoF”. To eliminate it, refer to Recorder Startup Operations. When the digital tube flashes and displays “LoF”, the recorder is not started. Press down the ^ and ☑ keys simultaneously for 3 seconds, “LoF” disappears and the recorder starts.

9. Max-Min Query

Operation in key lock state:

- Short press the “Up” key, the left digital tube flashes “MAX1” and “MAX2” three times each, and the right digital tube displays the corresponding MAX1/MAX2 values three times each;
- Short press the “Down” key, the left digital tube flashes “MIN2” and “MIN2” three times each, and the right digital tube displays the corresponding MIN1/MIN2 values three times each;
- Long press the combination key “Set/Mute + Up” for 3 seconds, the buzzer will beep twice, clearing the values corresponding to “MAX1, MAX2” and “MIN1, MIN2”, and the values will be re-recorded.

10. Battery switch

- During normal use of the device, the battery switch needs to be turned “on”, at this time, the device can send an alarm signal in time after the power is turned off.

11. Remote alarm function

- This product can optionally be equipped with a remote alarm function. When the product has an alarm, it can output an alarm signal through the remote alarm connector.
- The connector is located in the lower area on the left side of the product and has a carrying capacity of DC 30V/2A.
- The remote alarm connector has normally open NO, common COM and other contacts. It is recommended that the length of the remote alarm connection cable does not exceed 3 meters.

Note 1: The remote alarm function requires the user to install the alarm device by himself, which is used in conjunction with the remote alarm interface;

Note 2: Pressing the mute key on the display can only cancel the alarm sound, and the remote alarm status remains unchanged.

12. Remote communication function

- This product can optionally be equipped with RS485 remote communication function, which can output temperature data, alarm information and other signals in the cryogenic chamber to the user monitoring software terminal through the remote communication connector terminal. The RS485 connector terminals are located in the lower area on the left side of the product.
- The telecommunication connector has RS485_A, RS485_B, GND and other contacts. Where RS485_A and RS485_B are a pair of differential signals, the user can use twisted pair cable to connect the above signals.

for after sales use

13. Battery voltage check

- Press down the keys ▼ + ▼, the digital tube in the lower chamber displays the battery voltage.

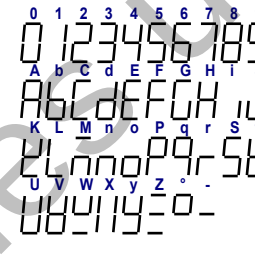
Function settings

User parameter setting

In the unlocking state, press and hold the ▼ key for 3 seconds, and the digital tube displays the parameter code “MAX1”, thus entering the user menu to adjust the parameters.

1. Use ▼ key to scroll through parameters, and the display order is: MAX1 - MIN1-MAX2-MIN2-CLR-SEt1-H01-L01-SEt2-H02-L02-n-y-r-S-F-Pt-tH1-P1-PS1-b1-b2;
2. Increase or decrease the value using the ▲ and ▼ keys;
3. Press the ▼ key to temporarily store the modified value and return to the display parameters;
4. If you need to modify other parameters, repeat steps 1–3;
5. Press and hold the ▼ key for more than 3 seconds to store the modified parameter and return to the displayed parameter category.

Character set



SN	Menu	Parameter range	Recommended setting value	Note
1	MAX1	----		Maximum value of upper chamber temperature in the current time period
2	MIN1	----		Minimum value of upper chamber temperature in the current time period
3	MAX2	----		Maximum value of lower chamber temperature in the current time period
4	MIN2	----		Minimum value of lower chamber temperature in the current time period
5	CLR	0-1	1	0: Clear the first four parameter record values 1: Do not clear the first four parameter record values
6	Set1	MD-25L: -10.0--25.0 MD-40L: -20.0--40.0	-25.0 -40.0	Upper chamber temperature setting value
7	H01	0.0-10.0	5.0	Upper deviation on high temperature alarm of the upper chamber

for after sale use

SN	Menu	Parameter range	Recommended setting value	Note
8	L01	0.0-10.0	5.0	Lower deviation on low temperature alarm of the upper chamber
9	Set2	MD-25L: -10.0--25.0 MD-40L: -20.0--40.0	-25.0 -40.0	Lower chamber temperature setting value
10	H02	0.0-10.0	5.0	Upper deviation on high temperature alarm of the lower chamber
11	L02	0.0-10.0	5.0	Lower deviation on low temperature alarm of the lower chamber
12	n	----	----	Check the current date - year
13	y	----	----	Check the current date - month
14	r	----	----	Check the current date - day
15	S	----	----	Check the current date - hour
16	F	----	----	Check the current date - minute
17	Pt	0-240	10	Printing interval
18	tH1	20.0-50.0	36.0	Ambient temperature alarm value
19	P1	1-5	5	Door heating mode selection
20	PS1	0-9999	0005	Password setting of user menu
21	b1	----	----	Hardware version
22	b2	----	----	Software version

for after sales use

Failure alarm description

Code	Fault description
H01	High temperature alarm of the upper chamber
L01	Low temperature alarm of the upper chamber
H02	High temperature alarm of the lower chamber
L02	Low temperature alarm of the lower chamber
H03	High ambient temperature alarm
door1	Door-opening alarm of the upper chamber
door2	Door-opening alarm of the lower chamber
PF	Power failure alarm
BL	Low battery alarm
EE	Alarm for display board communication failure
E2	Alarm for upper chamber temperature sensor failure
E4	Alarm for lower chamber temperature sensor failure
E6	Alarm for ambient temperature sensor failure
Er	Recorder not connected
Pr	Alarm for error generating file from USB flash disk
LoF	Recorder not started

for after sales use

MAINTENANCE AND CARE

WARNING

To prevent electric shock or injury to personnel, be sure to disconnect power before doing any repairs or maintenance on the equipment.

Ensure that you do not inhale surrounding medications or suspended particles that could endanger your health when maintaining the equipment.

NOTE

Do not directly sprinkle water on the box, so as to avoid the decline of insulation performance of electrical components and rust of metal parts.

Do not use hot water, corrosive detergent or organic solvent to clean the cabinet.

Do not put heavy objects on the top of the equipment to avoid deformation of the equipment under pressure.

Device maintenance

Observe whether the temperature of the equipment is normal, whether there is an alarm phenomenon

Observe whether the door seal is fully fitted, open the box door, and remove the frost around the mouthframe

Use a dry cloth to wipe off a small amount of dust on the outer shell of the freezer as well as that on all accessories. If the freezer is dirty, use a cleaning cloth soaked with neutral detergent to remove the dirt, wipe off the residual detergent with a wet cloth, and then wipe it again with a dry cloth

Remove frost or ice from inner walls and clean the condenser once a month

for after sales use

Defrosting inside the freezer

Frosting can be a gap between the freezer and the door seal, which can lead to poor cooling. Defrost the inner door with the ice shovel supplied with the freezer, using the natural defrosting method in the following steps.

Power off the device or turn off one of the chambers individually

↓

Take out the contents inside the freezer and transfer them to an environment suitable for their storage

↓

Pull out all drawers (if any) and allow the freezer to open naturally for some time to defrost

↓

Dry the bottom of the freezer with a dry cloth

↓

After cleaning the freezer, restart the freezer

↓

Return the item to the adequately cooled freezer

⚠ NOTE

Do not use sharp-edged tools such as knives or screwdrivers to defrost.

for after sales use

Component Replacement Cycle

Part	Model	Suggested replacement cycles
Battery	SN12001.3	3 years
Condensing fan	YZ-29-44-2-18 CCC	5 years

Device deactivation

Discontinuation:

If the equipment is stored in an unsupervised area for a long time and is not used, the power supply should be cut off and the inner and outer surfaces of the box should be wiped clean with a warm and wet soft cloth, and then dried and sealed; It is necessary to ensure that the equipment is locked, and that child cannot open the door to prevent accidents such as suffocation.

End-of-life:

When the equipment reaches the end of its service life, it should be scrapped and must be handed over to qualified professional recycling organizations for scrapping and disposal in accordance with local regulations and ordinances; non-professionals should not disassemble or disassemble the equipment without authorization; Scrapped equipment should be placed in designated areas that are inaccessible to child to avoid danger.

for after sales use

TROUBLESHOOTING AND MAINTENANCE SERVICES

Any product has the possibility of failure. Please observe the operation of the equipment in time during use. If there is any abnormality, please check and deal with it according to the table below. If you still can't change the situation, you should inform our service center in time, we will serve you wholeheartedly so as not to cause any loss to you.

Malfunctions	Troubleshooting
The freezer doesn't work	• Check whether the input power meets the requirements
	• Whether the plug and the socket are in poor contacts
	• Whether the input and control lines are faulty
	• Whether the voltage is too low
The cooling effect is not obvious The temperature exceeds the standard	• Whether too many or overheated items are stored
	• Is the door tightly closed? (The frost between the freezer and door seal may break the sealing of the door)
	• Whether there is direct sunlight or other heat source radiation
	• Whether the door is open frequently
	• Whether the ambient temperature is too high
	• Whether the condenser or filter is hidden
	• Whether temperature is set correctly
	• Test whether the rubber hole cover and insulation material for the through hole are properly installed
	• Whether the air duct is blocked
Excessive noise	• Whether the freezer is placed stably
	• Whether a part of the cabinet is in contact with external objects or walls
The alarm light flashes The buzzer alarms	• Whether the articles have just been put in, so the temperature is raised, and it will be automatically eliminated after refrigeration for a period of time
	• If the door is not locked, it is an alarm for door opening
	• Whether the temperature exceeds the standard

⚠ NOTE

If you fail to troubleshoot after checking the above items, or the fault is different from the above list, please contact the after-sales personnel.

for after sales use

SPECIFICATIONS

Name	Biomedical Freezer	
Model	Product model 1	Product model 2
Electric shock resistance type	Class I	
Power supply	220 – 240V ~/50Hz	
Temperature in the freezer	-10°C--25°C	-20°C--40°C
Refrigerant	R290, 70g * 2	R290, 70g * 2
Volume	518L	
Rated current	5.0A	5.0A
Weight	149 kg 151kg(Stainless steel inner liner)	
Shelf	12 drawer (9kg)	12 drawer (9kg)
Noise	58dB(A)	58dB(A)
Product dimensions (W×D×H)	866 * 811 * 1920mm	

Note: The technical parameters in this table are measured in the standard state. Due to update product improvements and technology, the parameters are subject to change without notice. Please refer to the label nameplate.

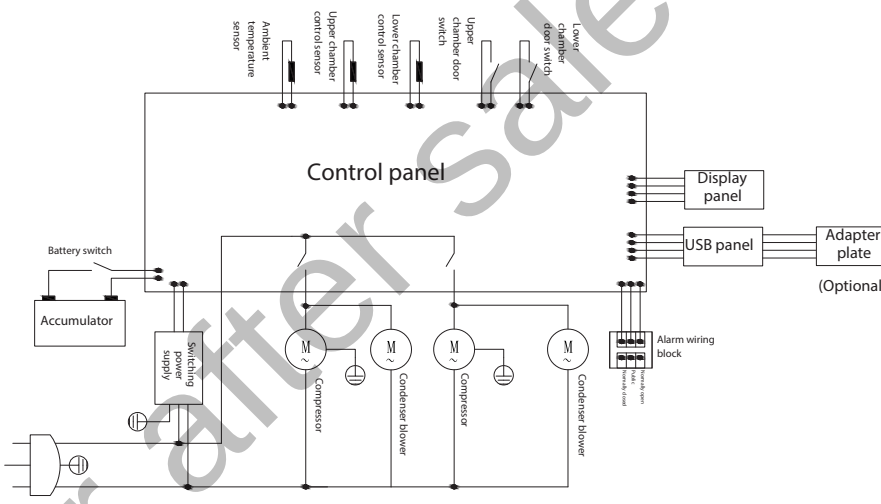
for after sales use

PACKING LIST

Model	User manual	Keys	Handle	Drawers	Padlock suit
Product model 1	1	2	2	6	2
Product model 2	1	2	2	6	2

Note: For external padlocks and handle options, etc., please refer to the physical configuration.

ELECTRICAL SCHEMATIC DIAGRAM



Product model 1/ Product model 2

Note: Some models do not have running capacitors and condensing fans, please refer to the actual product.

for after Sales use

Product model 1: MD-25L518

model 2: MD-40L518

for after sales use