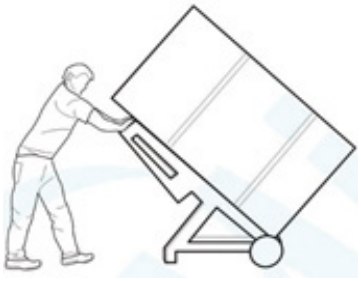
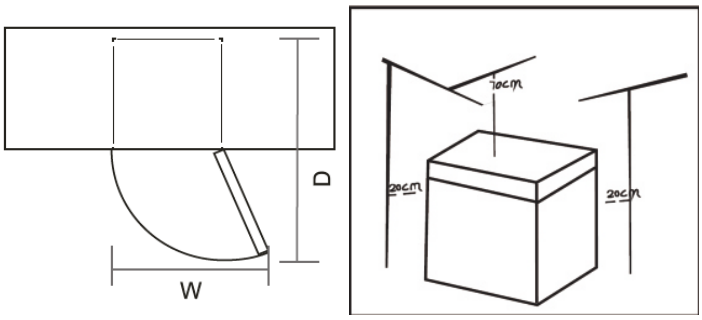
Installation

- Protect the Pharmacy Refrigerator during transport. As shown in the photo, please move it using a cushioned handcart.
- Remove all packing materials and the bottom cushion before placing the refrigerator in its designated location.
- After moving it to the appropriate location, wait for 2 hours before powering it on.



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

  W×D≥54.3 inches × 54.5 inches (MD-25/40L308)
  W×D≥48.0 inches × 47.4 inches (MD-25/40L106)



Installation Environment

- Temperature Requirements: The ideal ambient temperature for the biomedical freezer is between 64.4°F and 77°F. It can operate in temperatures ranging from 50°F to 89.6°F. If necessary, use an air conditioning system to maintain the appropriate temperature.
- Humidity Requirements: Keep the ambient humidity below 80% RH. If the operating temperature is 89.6°F, ensure the humidity does not exceed 60% RH.
  Dust and Pollution: Install the freezer in an area with minimal dust (Pollution degree: 2). Avoid locations with significant dust exposure.
- Vibration and Movement: Avoid placing the freezer in areas where it could be subject to mechanical rocking or vibration.
- Protection Rating: The freezer has an IPX0 rating, which means it is not protected against water; avoid exposure to moisture.
- Altitude: The freezer should be installed at altitudes below 6,561 feet (2,000 meters).

- Voltage Requirements: Ensure the input voltage is within 115V ±10%. If the voltage is unstable, consider using a voltage stabilizer rated for over 4000W.
- Location Considerations: The freezer must be installed indoors in a temperature-controlled environment. Do not install it outdoors or in areas where it might be exposed to rain, as this could cause electric shock or malfunction.

Installation Site

- Space Requirements: Install the biomedical freezer in a well-ventilated, open space. Avoid placing it in narrow or confined areas. Ensure the surrounding area allows for easy access and maintenance. The door of the room should be large enough to accommodate the freezer, enabling smooth operation and servicing.
- Ground Requirements: The installation surface must be solid, flat, and non-combustible, capable of supporting the weight of the freezer during operation.
- Ventilation: Ensure there is adequate ventilation and avoid direct sunlight on the freezer.
- Power Supply: Each freezer must have its own dedicated power outlet. The outlet should support a minimum of 10A current. Make sure the power cord is securely plugged in and not pinched or twisted.
- Voltage Stability: Before use, verify that the working voltage is stable. If your location has unstable voltage, use a voltage stabilizer rated at 4000W or more to protect the freezer.
- Grounding: The freezer must be properly grounded. If the outlet has a grounding wire, ensure it is correctly connected. If the outlet is not grounded, have a qualified technician install proper grounding.

Warning:
- Grounding Safety: Do not connect the grounding wire to a gas pipe, water pipe, telephone line, or lightning rod. Doing so could cause electric shock.
- Power Cord Accessibility: Ensure the power plug is easily accessible after installation to allow for quick disconnection in an emergency. Do not block the freezer's vent with any objects.

Caution:
Since ambient temperature has a significant impact on the equipment, it may not operate properly if the environmental requirements are not met. Please ensure the environment is suitable before using the equipment. The equipment has an intermittent operation working system.

Preparations Before Use

Remove Packaging:

Remove all transport packaging materials and belts.

Check Contents:
Count the accompanying accessories. Cross-check the items in the box against the packing list. If there are any discrepancies, contact after-sales service promptly.

Ensure Proper Clearance:
The freezer must have at least 12 inches (30 cm) of clearance around it for proper ventilation and heat dissipation.

Adjust Supporting Feet:

Rotate the horizontal supporting feet clockwise with a wrench or manually to extend them downward, ensuring they rest on the ground and stabilize the freezer.

Install Back Bracket:
Remove the back bracket from the biomedical freezer and secure it to the back plate with screws. (Note: It's advisable to contact service personnel to fix the freezer to the building structure through the back bracket before use.)

Attach the Handle:
Align the handle with the hole on the right side of the door. Fix the door handle to the door with an electric screwdriver, then fasten the handle trim cover to the upper and lower ends of the handle.

Warning:
Place the plastic packing bags out of reach of children to prevent suffocation accidents.

First Power-Up

Follow these steps when using the equipment for the first time:

Allow Settling Time:
After placing and leveling the equipment, leave it for more than 24 hours before powering it on to ensure normal operation.

Connect to Power:
Plug the power cord into a dedicated outlet with the appropriate specifications, ensuring no load is applied during this time.

Set Temperature and Test:
Set the desired temperature, but do not place anything in the empty freezer initially. Power on and start up the unit, monitoring whether the operating temperature reaches the required level. Observe the normal startup and shutdown of the equipment for more than 24 hours to confirm that the freezer is functioning properly.

Load Items Gradually:
Load items in batches, not exceeding 1/3 of the chamber volume at a time. Ensure that the unit is shut down and operates normally after being switched on and off for more than 8 hours before placing the next batch of items.

Minimize Door Opening:
Avoid opening the door during the cooling process as much as possible, as this will cause the temperature to rise.

Operation

Operation After Power-Off

The set temperature is retained by the equipment. After recovery from a power failure, the equipment will resume operation with the previous settings.

Warning:
Restarting the Freezer: If the biomedical freezer is unplugged or if the power is interrupted, do not restart the freezer for at least 5 minutes to avoid damaging the compressor or system.

Warning:
Long-Term Inactivity: If the freezer will not be used for an extended period, unplug the power cord and turn off the battery switch (if applicable). This helps prevent electric shock, electric leakage, and deterioration of the power cord. If the freezer will be stored unused in an unsupervised area for a long time, ensure children do not have access, and make sure the doors are fully closed.

Maintenance and Management

Regular Checks: Assign a responsible person to regularly check the operation and record temperatures (recommended every 2-4 hours). If there is a failure or shutdown, the temperature inside the freezer will rise. If the issue cannot be resolved quickly, transfer stored items to a suitable location to prevent damage.

Confirm Temperature Range: This freezer is designed for biomedical use. Ensure that the storage conditions match the temperature requirements of the items. Avoid opening the door frequently to maintain a consistent internal temperature and protect stored items.

Temperature Display: The temperature and humidity readings may differ between the display and the actual chamber conditions. This is normal and expected.

Important Usage Guidelines

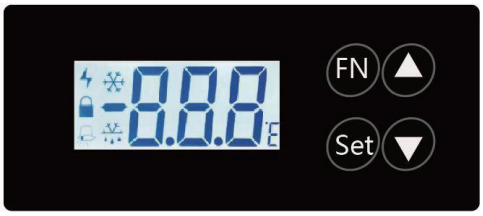
Avoid Frequent Door Openings: Because the freezer is designed for storage, it's essential to minimize the frequency of door openings. Repeated opening and closing will cause the internal temperature to rise and put stress on the compressor, potentially leading to longer cooling times.

Do Not Damage the Refrigeration Circuit: Never damage the refrigeration system as it could lead to a malfunction.

Use Only Approved Appliances: Only use electrical appliances within the freezer's storage compartment if they are approved by the manufacturer.

Defrosting Precautions: If defrosting is needed, do not use mechanical methods or tools that aren't approved by the manufacturer to accelerate the process.

Operating Instructions



Key Symbol	Function
FN	Press and hold the FN key for 3s under unlocking state to enter the maintenance mode;
SET	SET key: In the unlocking state, press and hold the SET key for 3s to display the current control temperature set value St: in the setting state, press and hold the key for 3s to save and exit;
▲	Up key to switch parameters or adjust up parameter values;
▼	Down key to switch parameters or adjust down parameter values;
SET+FN	Press and hold for 3s to unlock or lock the controller;
SET+▲	Press and hold for 3s to enter the setting interface of general menu parameters;
SET+▼	Press and hold for 3s to manage the parameter setting of the menu;
Press and hold ▲+▼ for 3s	Enter the time setting interface of the recorder;
Press and hold ▲ for 3s	Export data to USB flash disk;
Press and hold ▼ for 3s	Print data;

Display Meaning

Display Symbol	Meaning
	Refrigeration symbol flashing: refrigeration on delay;
	Refrigeration symbol normally on: the compressor is started and refrigeration begins;
	Power symbol normally on: the external power supply of the controller is connected;
	Lock symbol normally on: the controller is locked;
	Alarm symbol flashing: the controller is in alarm state;
	Defrost symbol flashing: defrosting dripping time;
	Defrost symbol normally on: the controller is in defrosting state;

Controller Parameters and Operation

Normal Operation: The controller displays and controls the measured temperature of the biomedical freezer.

Error Codes:

If the temperature sensor fails, the display will show "E01".
If the temperature exceeds 185°F (85°C), it will show "EHi".
If the temperature drops below -58°F (-50°C), it will show "ELo".

Control Temperature Setting

Unlocking:
In the unlocked state, press and hold the SET key for more than 3 seconds. The display screen will show the current control temperature set value (St).

Adjusting Temperature:
Use the **UP** key to increase the temperature value.
Use the **DOWN** key to decrease the temperature value.

Confirming Changes:
Press and hold the SET key for more than 3 seconds to confirm the new parameter value. The screen will flash for 2 seconds if there is any change, then store the modified value and exit. If no changes are made, it will exit directly.

Setting of General Menu Parameters

Accessing Menu Parameters:
In the normal operation state, after unlocking, press the SET key and the key together for more than 3 seconds. The LCD screen will display the parameter code "H".

Navigating Parameters:
Use the UP and DOWN keys to scroll through the parameters (H, L, Mod).

Confirming a Parameter:
Press the SET key to select the parameter, and its value will be displayed.

Modifying a Parameter:
Use the UP or DOWN keys to increase or decrease the value of the selected parameter.

Temporary Return:
Press the SET key to temporarily store the modified parameter value and return to the parameter display screen.

Finalizing Changes:
If other parameters need modification, repeat steps b-e. Press and hold the SET key for more than 3 seconds to store the modified parameter values and exit the parameter setting mode.

Management of Menu Parameter Settings

Accessing Parameter Settings:
In the normal operation state, after unlocking, press the SET key and the key together for more than 3 seconds. The LCD screen will display the parameter code "PAS".

Entering the Password:
Press the SET key to enter the password setting.
Use the UP and DOWN keys to scroll the number to "-15".

Confirming the Password:
Press the SET key to confirm the password. If the password is incorrect, the parameter setting program will exit.

Navigating Parameters:
Use the UP and DOWN keys to scroll through the parameter names.

Displaying Parameter Values:
Press the SET key to display the corresponding parameter values.

Modifying Parameters:
Use the UP or DOWN keys to increase or decrease the value of the selected parameter.

Storing and Returning:
Press the SET key to temporarily store the modified parameter value and return to the parameter display screen.

Repeating for Other Parameters:
Repeat steps e-g if you need to modify other parameters.

Finalizing Changes:
Press and hold the SET key for more than 3 seconds to store all modified parameter values and exit the parameter setting mode.

Note: If there is no key operation within 10 seconds, the controller will automatically exit the parameter setting state, and parameters will not be saved.
If no key is pressed for 3 minutes, the controller will lock, and the buzzer will buzz for 0.5 seconds. Press SET and FN simultaneously for 3 seconds to unlock or lock the controller. When locked, the controller cannot be operated, and unlocking is required to continue.

Time Setting

Entering Time Setting Mode:
The display will show "yer". Use the UP and DOWN keys to select parameters for year (yer), month (mth), day (day), hour (HH), and minute (MM).

Adjusting Time Parameters:
After selecting the desired parameter to set, press "SET" to adjust it. Use the UP and DOWN keys to modify the value.

Saving and Exiting:

Once all adjustments are made, press and hold "SET" for 3 seconds to save and exit. If no key is pressed for 10 seconds during the adjustment, the system will exit automatically, and changes will not be saved.

Additional Notes:
The main control panel will buzz for 0.5 seconds when a USB flash drive is inserted or removed.
If the recorder is not connected or is malfunctioning, the display will show "nDR", and the time cannot be set.

Exporting Data

Manual Export:

Accessing Data Export Interface:

In the normal operation state, after unlocking, press and hold the UP key for 3 seconds to enter the data export interface.

Checking Connections:

If the recorder is not connected, "nDR" will be displayed.
If the USB flash drive is not connected, "nUS" will be displayed.

Selecting and Confirming Data:

Use the UP and DOWN keys to select M1M12 (representing the current time of data export, pushed forward by 112 months).
Press and hold the SET key for 3 seconds to confirm the data export.

During Export:

If there is a large amount of data, the interface will show "ULD" until the export is completed. If there is no key operation for 3 seconds, the interface will exit without saving.

Manual Data Printing (Reserved)

Entering Data Print Interface:
In the normal operation state, after unlocking, press and hold the down key for 3 seconds to enter the data print interface.

Selecting Print Time:
Use the UP and DOWN keys to select dt1dt7. These represent the current printing time, which is pushed forward by 17 days.

Confirming Printing:
Press and hold the SET key for 3 seconds to confirm the printing. If there is no key operation for 10 seconds, the interface will exit without saving.

Warehousing Mode

Accessing Warehousing Mode:
In the power-off operation state, after unlocking, press the SET key and DOWN key for more than 3 seconds at the same time. The LCD screen will display the parameter code “PAS”.

Entering the Password:
Press the SET key to enter the password setting.
Use the UP and DOWN keys to scroll the number to “22”.

Confirming Password:
Press the SET key to confirm the password. If the password is incorrect, the warehousing mode setting program will exit.

Activating Warehousing Mode:
If the password is correct, it will enter warehousing mode, and the power supply of the temperature controller will be turned off.
These actions must be completed during the buzzer alarm period (about 2 minutes) after a power failure.

Low Power Mode:
After entering warehousing mode, the current consumption of the entire temperature controller will be lower than 5uA.

Alarm Description

Code	Cause	Action
Err	Data access fault	N/A
E01	Biomedical freezer temperature sensor fault	The alarm symbol ashes; E01 is displayed; buzzer sounds immediately; compressor is in proportional operation.
E02	Ambient temperature sensor fault	N/A
AH	AH high temperature alarm	AH and temperature are displayed alternately; the alarm symbol ashes; the buzzer buzzes when 15min is exceeded.
AL	AL low temperature alarm	AL and temperature are displayed alternately; the alarm symbol ashes; the buzzer buzzes when 15min is exceeded.
EHi	Sensor temperature > 85°C	EHi and temperature are displayed alternately; the alarm symbol ashes.
ELo	Sensor temperature < -50°C	ELo and temperature are displayed alternately; the alarm symbol ashes.
dor	Door open or not closed	The alarm symbol ashes; when 1min is exceeded, dor and temperature are displayed alternately and the buzzer buzzes.
N/A	Ambient temperature ≥ 35°C	The alarm symbol ashes; the biomedical freezer temperature and ambient temperature are displayed alternately.
N/A	Power-o	The alarm symbol is displayed; the buzzer sounds intermittently for 2 min.; the temperature is displayed intermittently for 20 h.

Maintenance

Warning:

- To prevent electric shock or injury, disconnect the power supply before performing any repairs or maintenance on the equipment.
- Ensure that any drugs or suspended particles from the surrounding environment are not inhaled during equipment maintenance, as this could be harmful to human health.
- Confirm that the grounding connection is secure.
- Ensure that all maintenance parts are properly installed.
- Verify that all safety signs are in place and correctly positioned.
- Ensure that all protective parts are installed and secure.
- Make sure the product is in normal working condition.

Caution:

- Do not spill water directly on the chamber body, as it may damage the electrical insulation and metal parts.
- Avoid using hot water, corrosive cleaners, or organic solvents to clean the chamber body.
- Do not place heavy objects on top of the equipment, as this may deform it under pressure.

Cleaning of Biomedical Freezer

Regular Cleaning:
The biomedical freezer should be cleaned once a month. Regular cleaning helps maintain its appearance and functionality.

Cleaning the Exterior:
Wipe the dust from the freezer's shell, inner chamber, and all accessories with a dry cloth. If the freezer is particularly dirty, use a cloth dampened with a neutral detergent to remove the dirt, then dry with a clean cloth.

Avoid Water Damage:
Do not pour water on or into the freezer's shell or inner chamber. Water exposure may damage the electrical insulation and the freezer itself.

Lubrication:
Clean the condenser and other mechanical parts to ensure they are free of debris and do not require lubrication.

Frost Removal:
Clean any frost or ice from the inner walls and the condenser filter screen once a month.

Defrosting Inside Biomedical Freezer
Frost buildup can cause gaps between the freezer and the door sealing strip, leading to poor refrigeration. The inner door should be defrosted using the ice shovel provided with the freezer. Follow these

steps for natural defrosting:

Turn Off Auxiliary Cooling Device:
Shut down the auxiliary cooling device, if any.

Remove Items:
Transfer all items from the freezer to an appropriate storage area.

Power Off:
Turn off the power switch.

Open the Doors:
Open both the outer and inner doors to allow the freezer to defrost naturally over time.

Dry the Water:
Use a dry cloth to absorb any accumulated water at the bottom of the freezer.

Clean the Interior:
After defrosting, clean the inner door and freezer chamber, then restart the device.

Return Items:
Place the items back inside the fully cooled freezer.

Restart Cooling Device:
If there is an auxiliary cooling device, restart it.

Caution:
Do not use a knife, screwdriver, or any sharp tool to defrost, as this could damage the freezer.

Equipment Out of Service

Long-Term Storage:
If the freezer will be unused and stored in an unsupervised area for an extended period, ensure that children do not have access and that the doors are securely closed.

Scrapping:
If the freezer needs to be scrapped, have it dismantled by professionals to prevent accidents such as suffocation. All doors must be removed before disposal.

Optional Parts

Temperature Recorder

Installation:
Refer to the Temperature Recorder Instructions provided with the device for proper use.

Caution: Please ensure the temperature recorder is installed by a professional technician or after-sales personnel.
Warning: Always unplug the freezer before installing the temperature recorder to avoid electric shock or fire.

Troubleshooting

Fault	Troubleshooting Method
Biomedical freezer does not work	Is the power circuit breaker normal?
	Is the power voltage too low?
	Is the power switch off?
	Is the fuse blown?
Poor cooling	Is the ambient temperature too high?
	Is the door closed tightly? (The frost between the biomedical freezer and the door sealing strip may damage the door sealing performance)
	Is the air inlet dirty and blocked?
	Are the condenser and filter screen dirty and blocked?
	Is the temperature set correctly?
	Is the biomedical freezer away from direct sunlight?
	Is the biomedical freezer close to the heat source?
	Are the rubber hole cover and insulation material of the test through hole properly placed?
	Is a large amount of high temperature articles placed in the biomedical freezer for a short time?
Excessive noise	Is the biomedical freezer installed on a solid and flat ground?
	Are other items contacted to the biomedical freezer housing?
	Is the base of the biomedical freezer leveled?

Note: If the fault cannot be eliminated after the above items are checked, or the fault is different from the above list, please contact customer service personnel.