



Ultra Low Temperature Freezer Biomedical Freezer

Operation Manual

The following product models are applicable:

DW-YL90
DW-FL90
DW-YL270
DW-FL270
DW-YL450
DW-FL450



Better science, Better life!

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1. Application Notes ■■■■■■■■■■

Thank you for choosing and using MELING BIOMEDICAL products! For your safe and convenient use and reasonable maintenance of the equipment, please read the Operation Manual carefully before use and keep it properly for reference.

The equipment operator can copy some chapters of this operation manual, but only for internal use, for example, to instruct the user how to deal with emergencies. These chapters are clearly marked in the catalog of the manual.

MELING BIOMEDICAL has no obligation and responsibility for any instrument damage caused by the user's failure to use the equipment according to the instructions or the method specified by the manufacturer.

Due to the rapid improvement of MELING BIOMEDICAL products, the functions described in the instructions may be inconsistent with those of the products you purchased. Please refer to the physical functions.

- Ⓢ Please read carefully the Attention and Safety Precautions (in 2. Safety Instructions). During transportation or use, no violent vibration or collision is allowed and the freezer shall be kept away from rain. Store in a clean room with humidity no more than 80 %, no corrosive gas and good ventilation.
- Ⓢ Ultra low temperature freezer and biomedical freezer (hereinafter referred to as equipment) can only be operated by trained and authorized personnel.
- Ⓢ Maintenance of the equipment can only be completed by MELING BIOMEDICAL or an agent authorized by MELING BIOMEDICAL.
- Ⓢ If the operator encounters any situation not mentioned in this manual, please contact MELING BIOMEDICAL or the agent authorized by MELING BIOMEDICAL for the correct handling method.
- Ⓢ If the equipment is not used according to the method specified in the specification, it may be damaged.
- Ⓢ Try to use the accessories provided by MELING BIOMEDICAL. If users would like to use other accessories, MELING BIOMEDICAL will not be responsible for the adverse consequences caused therefrom.
- Ⓢ Equipment must be inspected and maintained regularly to ensure good operation of the equipment.
- Ⓢ Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.























Warning:

After each access, be sure to dry the water stains around the sealing strip to prevent freezing. Wear protective gloves when storing items in the equipment, and beware of frostbite!

Tips

- ◆ Always use protective equipment correctly (including clothes, gloves, goggles, etc.)
- ◆ Always keep good hygiene habits
- ◆ Each personnel is obliged to be responsible for his or her own safety

	Do not place the equipment in areas exposed to the sun or rain to prevent danger such as short circuit or overheating.
	Do not tilt or lay the equipment sideways and do not impact the equipment body; refrigeration systems are installed in the equipment, which can be easily damaged by tilting or impact.
	Please place the equipment in a dry and dust-free environment to avoid risks such as overheating and short circuiting.
	In case of unexpected sounds, smell, smoke, etc. when the power is turned on, please unplug the power in time and contact the manufacturer or supplier.
	Please place the equipment in a dry and ventilated environment and ensure that the equipment vents and instrument surfaces are not blocked or shielded by walls or other objects; do not use it in a poorly ventilated environment to prevent damage caused by heat released by equipment.
	It is forbidden to disassemble and modify this equipment without authorization to avoid potential safety hazards. In this case, MELING BIOMEDICAL will not bear any responsibilities for quality accidents.
	It is forbidden to put inflammable and explosive dangerous goods, strong corrosive acids, alkalis and other items unsuitable for the equipment in the equipment.
	When storing toxic, harmful or radioactive materials, please use the equipment in safe areas as Improper use may cause harm to human health or the environment.
	Metal objects such as nails or iron wires shall not be inserted into any aperture and gap or any outlet of the equipment, otherwise an electric shock or injury may be caused due to accidental contact between the above objects and moving parts.
	In order to ensure the normal operations and ventilation and heat dissipation of the equipment, the back, left and right sides of the freezer body should be at least 30cm away from the wall, and the air inlet and air outlet must not be blocked by obstacles!
	This equipment must be connected to a ground wire.

	Note: Failure to observe the precautions may result in personal injury or equipment failure and related property losses.
	It is forbidden to store living animals, flowers or other items with strict temperature requirements in the equipment.
	The temperature in the freezer is very low during operation. Do not touch the liner surface covering plate and frozen objects with your hands without wearing protective gear or frostbite may occur.
	Hold the handle and close the door to avoid pinching your fingers; When the equipment is not used for a long time, please unplug it and pack it for storage.
	When restarting the equipment after power failure or power off, please check the equipment settings first, otherwise the stored items may be damaged due to the change of settings.
	The equipment can be used for item preservation, not as production equipment!
	Keep the keys properly, so as to avoid accidents when children open the door accidentally.
	When handling the equipment, please be careful not to tip over the equipment, so as to prevent equipment damage or personal injury.
	When handling, it shall be lifted from the bottom, with the inclined plane not be greater than 45°, and it shall be handled with care. Please use the equipment in safe areas. Improper use may cause harm to human health or environment.

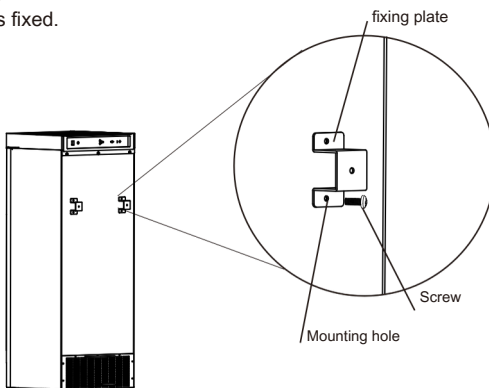
4.3 Preparation before Use:

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



Warning: Don't put the plastic bags within the reach of children, so as to prevent suffocation accidents.

2. Inventory of accessories: Please check the accessories and materials according to the packing list.
 3. Cleaning: Clean the product once before use.
 4. Cabinet fixing: twirl the support leg or lock the universal caster to ensure the cabinet not moving when in use.
5. Install the fixing plates (Apply to DW-FL270, DW-YL450 (110V 60Hz)).
- a. Firstly take out the two fixing plates and check if consistent.
 - b. Remove the bolts from the fixing plate, and then fix the plate on the back of the refrigerator.
 - c. Connect the fixing plate to the immovable wall or bracket on the back of the refrigerator and finally check whether it is fixed.



4.4 First Power-on

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

1. After the equipment is placed, leveled and cleaned, it shall stand for more than 24 hours, and then power it on to ensure the normal operation of the equipment.
2. Under no-load condition, connect the power cord to a special outlet with appropriate specifications.
3. Turn on the power switch after the power is on (If there is a battery, turn on the battery switch).
4. Check whether the operating temperature of the equipment reaches the required value, observe the normal start and stop of the equipment for more than 24 hours, and put a small amount of items in the freezer after confirming the normal performance.
5. Please store items in batches, with the items not exceeding 1/3 of the freezer volume each time. Ensure that the equipment is running properly after shutdown for more than 12 hours before putting in the next batch of items.
6. Try not to open the door during cooling, otherwise the temperature will rise.

4.5 Operation after Power Failure

1. The equipment has a memory function for the set value. When the power is restored after power failure, the equipment will continue to operate before power failure.
2. Once the equipment is powered off, it requires 5 minutes before it can be switched on again, so as to avoid damaging the compressor.
3. We guarantee the normal operation of this equipment under certain conditions, but we are not responsible for any loss or damage of stored items after power failure.



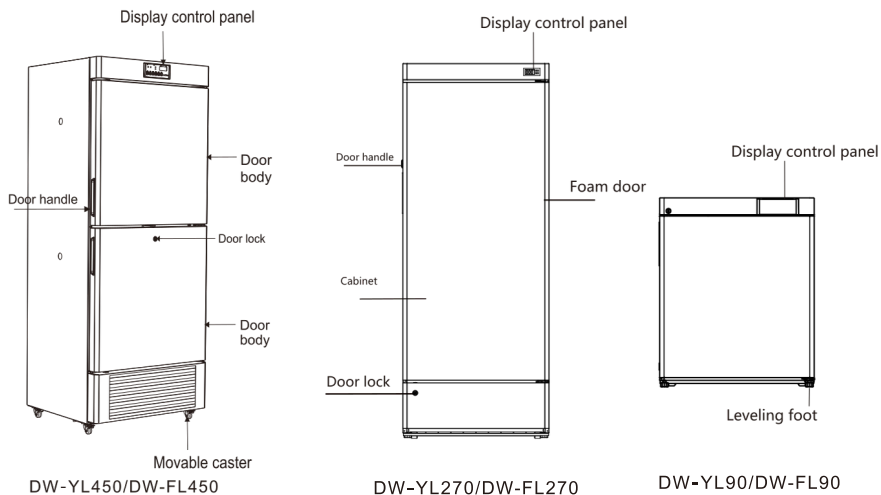
Notes:

- ◆ A special person shall be responsible for checking and recording the running status of the equipment every day (record and check once every 2-4 hours). In case of failure or shutdown, the temperature in the freezer will rise. If it cannot be repaired in a short time, please take out the stored items and transfer them to a place that meets the temperature requirements for storage to avoid damage to the items.
- ◆ Before putting items into the equipment, it shall be confirmed in advance whether the temperature range of the equipment meets the temperature requirement of the items, so as to avoid damage to stored items due to the difference between the settable temperature of the equipment and the required temperature of the items. Please pay attention not to block the air outlet and air inlet when putting items into the equipment.
- ◆ Due to the refrigeration inertia, there is a certain difference between the actual display temperature and the set temperature of the equipment, which is a normal phenomenon.
- ◆ The equipment is an item storage equipment, which cannot be used for routine production operations. It is strictly forbidden to put too many items which are relatively hot into the equipment at one time, otherwise the compressor will run for a long time, and be burned due to high temperature. Items must be put in batches, so as to ensure that the freezer is cooled step by step until the temperature required for storing items is reached.
- ◆ Electrical appliances without production license shall not be used inside the equipment.
- ◆ Do not change the set temperature frequently in a short time, otherwise the expected setting effect may not be achieved due to the large temperature inertia; Ensure that there is a certain air circulation space around the cabinet when putting in items, especially do not block the temperature sensor in the cabinet (for collecting the temperature of the cabinet), otherwise it will affect the stability and accurate control of the temperature in the freezer body!
- ◆ Items shall not be placed directly at the bottom of the freezer, but on the bottom shelf, otherwise the refrigeration effect of the equipment will be affected.
- ◆ When putting in items, if the moisture content of the items is too much or too little, it will affect the humidity change in the cabinet, so it is best to keep the items sealed; The humidity of the working environment will affect the change of humidity in the cabinet, especially if the door is opened too frequently and the door is not closed properly.



Warning: Children are not allowed to play with this equipment as a game prop, otherwise the injury or loss caused therefrom will be at their own risk.

- ◆ To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- ◆ No modification of this equipment is allowed.
- ◆ Do not modify this equipment without authorization of the manufacturer.
- ◆ Protection impairment if used in a manner not specified by the manufacturer.



* Due to the improvement of products and model differences, the actual products may be different from the diagram. Please refer to the actual products! The diagram is only used for functional parts description.

- * **Structure and composition** The product consists of freezer body, door (glass door structure or foam door structure), refrigeration system and control system.

Intended use:

* The storage temperature inside the box can be adjusted through the temperature button on the control panel, which is convenient to use and reliable in performance.

- The DW-YL90/DW-FL90 freezer has three floors, each of which can hold 20Kg.
- The DW-YL270/DW-FL270 freezer has seven floors, each of which can hold 20Kg.
- The DW-YL450/DW-FL450 freezer has six floors, each of which can hold 30Kg.

6.1 Function Introduction



1. Control board introduction:



- In the unlock state, in the parameter setting mode, press this key to display the value and the parameter name. If the pressed time is longer than 3 seconds, the setting will be saved and returned to normal interface.

h. USB data

Automatic export: when the U disk is connected to the USB interface, the recorder buzzer will chirp once and display "on". PDF files of data that not currently exported will be generated in the U disk. After data transmission, the buzzer will chirp once again and display "End". After 6s, it will return to normal display.

! Note: when the data is very little, the digital tube will not display "on" and "End".








Manually export: If the button is under locked state, after connecting U disk well and buzzer alarm for one time, press upper button for 3 seconds, digital tube display .d01/, Press the up button or down button to adjust .d00~d12/, press , The U disk internally generates a PDF file that generates this file (d00) or generates the data recorded in the previous month (1-12).


! Note: When the alarm of the digital tube flashes and displays "LoF," the recorder is not started; Long hold  and  key for 3s and "LoF" disappears, the recorder will be started successfully. (When the keyboard was unlocked already)








2.Function settings


a.Power on, open the power switch on the back of the cabinet, the machine can enter the working state;

b.User parameter settings:

Unlock:under normal operating state,simultaneously press  and  keys for 3s and the digital tube will display the parameter code"0000";By pressing  to enter the password"0005"and holding  to unlock. Then press  key for 3s,the digital tube will display the parameter code"PS1"and enter the setting and adjustment parameters.Use  or  key to scroll the parameters;

Press the  key to confirm the category. The first parameter name of this type of parameter will be displayed.

1. Press  or  to scroll through the values
2. Press the  to display the corresponding value
3. Press  or  to increase or decrease the value
4. Press the  to temporarily store the modified value of the lock and return to the display parameter.
5. If you need to modify other parameters, repeat steps 1-4.
6. Press the  for more than 3 seconds to store the modified parameter and return to the display parameter category.

d. Press the  for more than 3 seconds, or if there is no button within 60 seconds, exit the parameter setting program.

e. Parameter display

3.Press  for more than 3s, or press no key in 60s to exit the parameter setting program

4.Parameter display

No.	Menuitem		Parameter Range	Suggested settings	Remarks
1	MAX		—	—	The highest temperature since last clearance
2	MIN		—	—	The lowest temperature since last clearance
3	CLR		—	—	Clearance of the Max and Min temperature records
4	Set	YL	-10~ -25	-23	Temperature setting
		FL	-20~ -40	-40	
5	H	YL	0.0-10.0	10	Set value of high temperature alarm set+H; When H =0, High temp alarm is disabled; When the alarm is over high temp alarm set, H1 will be displayed on the controller
		FL	0.0-10.0	10	
6	L	YL	0.0-10.0	5	Set value of low temperature alarm set-L; When L =0, Low temp alarm is disabled; When the alarm is below low temp alarm set, L1 will be displayed on the controller
		FL	0.0-10.0	5	
7	n	Set logger module time - year		—	—
8	y	Set logger module time - month		—	—
9	r	Set logger module time - day		—	—
10	s	Set logger module time - hour		—	—
11	F	Set logger module time - minute		—	—
12	Pt	0-240min		20	Print interval
13	tH1	20.0-50.0℃		40.0	Upper limit of ambient temperature alarm
14	Ps1	0-9999		5	User menu password settings
15	b1	—		—	Repair Information 1
16	b2	—		—	Repair Information 2

Quick setting of time after power on

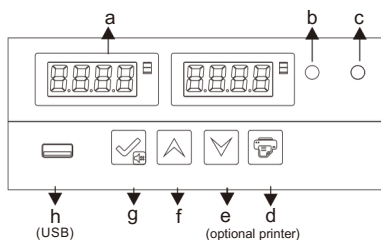
After the power-on self-test on the display board is completed, the quick setting menu is displayed.

Menu item	Menu	Menu description	Set range	Default	Unit
Quick Settings menu	n	Set logger module time - year	10~50		/
	y	Set logger module time - month	1~12	--	/
	r	Set logger module time - day	01~31	--	/
	S	Set logger module time - hour	00~23	--	/
	S	Set logger module time - minute	00~59	--	/
	F	Print interval	0~240	20	/
	Pt				min
	SCY	Temperature data recording period	0~240 0: shielded recorder	10	min

If there is no operation for 60 seconds under the quick setting menu, it will automatically exit the quick setting menu and return to normal display.

5.Alarm display

Alarm Code	Fault description
H1	High temperature alarm
L1	Low temperature alarm
H2	High ambient temperature alarm
door	Door open alarm
PF	Power failure alarm
bL	Low battery alarm
Er	Data Logger not connected
LoF	Data Logger not started
EE	Communication error



Type B control panel

Function description of Type B control panel(Applicable to DW-FL450,DW-YL450)

1. Control board introduction:

a. $\overline{4.0} \overline{-20.0}$ is a temperature display window, which displays the average temperature of the upper chamber and the lower chamber of the freezer body in °C under normal operation. (The upper and lower chambers of DW-YL450 are set at -10 ~ -25°C; The upper and lower chambers of DW-FL450 are set at -20 ~ -40°C; Different prompt characters can be displayed in the setting state (see below for details);

b. Door opening indicator: When the door is opened, the indicator lights up. After more than 1 minute, the door opening alarm indicator light will be on and the buzzer triggered, displaying "door."

c. Fault indicator light: When the product runs normally, the indicator light is off; The indicator light is on for operation abnormality.

d. "PRINT " (optional printer): The system can keep 7 days of data for printing, and press the print key to print the temperature within the set time period.

e.: In parameter setting mode, reduce the parameter value. For example, when setting the set temperature, reduce the set temperature. When setting the parameter value, press and hold the down button, and the parameter will decrease rapidly.

f. \blacktriangle : In parameter setting mode, increase the parameter value. For example, when adjust the set temperature, press this button to increase the set temperature value. When setting the parameter value, press and hold the up button, and the parameter will increase rapidly. Under normal conditions, press and hold the up key for 3 seconds to export the data thru U disk (up to 12 months' data once time).

g. \blacksquare : is the set/mute key; In case of no alarm state and key unlock state, press \blacksquare display the ambient temperature for 5s and then return to normal display; In the unlock state, press \blacksquare for more than 3s, can enter the user menu.


When buzzer is triggered (including cabinet including high temperature alarm, door opening alarm, sensor fault alarm, etc.) and in the button unlock state, press \blacksquare for the first time, and the buzzer stops ringing, and the ambient temperature is displayed for 5s, after which the normal display is resumed (pressing the mute button is only to turn off the buzzer for alarming this abnormal state, if the fault is not eliminated after 5 minutes of mute, the buzzer will alarm again.) Then press \blacksquare , and the buzzer alarms, and after displaying the ambient temperature for 5s, the cabinet temperature and alarm state are resumed. In the key unlock state, \blacksquare can be used as a setting key.



In unlock state and parameter setting mode, press this key to display parameter values and parameter names. If the pressing time is longer than 3 seconds, save the settings and return to the normal interface.

H. USB interface

Automatic export of USB data: When USB is connected to USB interface, buzzer beeps once after data transmission is completed, "USB" is displayed in the upper chamber, "on" is displayed in the lower chamber, PDF files of data of current month and last month are generated in USB, buzzer beeps once after data transmission is completed, "End" is displayed, and normal display resumes after 6 seconds.

! **Note:** When there is less data, "USB," "on" and "End" prompts are not displayed.






Manual export of USB data: In the key unlock state, when the USB flash drive is connected and the file is not being generated, press the up key for 3 seconds, and the digital tube in the lower chamber will display "d01." Press the key up or down key to adjust "d00~d12," and press  key to cancel the file generation (d00) or generate the PDF file of the record data of the previous months (JAN-DEC).


! **Note:** When the alarm of the digital tube flashes and displays "LoF," the recorder is not started; Meanwhile press  and  key for 3s, and "LoF" disappears, the recorder is started.



2.Function Settings

1.After powering on, the machine will enter into the working state;

2.User parameter settings;


Unlock: Under normal operation, press  and  for 3 seconds at the same time, and the digital tube in the upper chamber will display "PS1" and the digital tube in the lower chamber will display the parameter code "0000." Press  enter the password "0005" (when entering the user menu password, enter "0099" to restore the key lock password to the default "0005."), and holding  to unlock. Then press  key for 3s, and the digital tube will display the parameter code "PS1," and enter the setting and adjustment parameters.

① Use  to scroll the parameters;

② Use  or  to increase or decrease the value;

③ Use  temporarily store the modified values and return to the display parameters;

④ If other parameters are modified, repeat steps ①~③;

⑤ Press  for more than 3s, save the modified parameters and return to the display parameter category.

3. Press  for more than 3s, or press no key in 60s to exit the parameter setting program;

4. Parameter display

No.	Menu item	Parameter Range	Suggested settings	Remarks
1	b1	--	--	Hardware version
2	b2	--	--	Software version
3	Set1	DW-YL series: -10~-25 DW-FL series: -20~-40	DW-YL series: -23 DW-FL series: -40	Upper chamber temperature setting
4	H01	DW-YL:0.0~10.0 DW-FL:0.0~10.0	DW-YL:10.0 DW-FL:10.0	Set value of high temperature alarm set+H; When H =0, High temp alarm is disabled; When the alarm is over high temp alarm set, H1 will be displayed on the controller
5	L01	0.0~10.0	5.0	Set value of low temperature alarm set-L; When L =0, Low temp alarm is disabled; When the alarm is below low temp alarm set, L1 will be displayed on the controller
6	Set2	DW-YL series: -10~-25 DW-FL series: -20~-40	DW-YL series: -23 DW-FL series: -40	Lower chamber temperature setting
7	H02	DW-YL:0.0~10.0 DW-FL:0.0~10.0	DW-YL:10.0 DW-FL:10.0	Set value of high temperature alarm set+H; When H=0, cancel the alarm; When the temperature is too high, the high temperature alarm displays H02
8	L02	0.0~10.0	5.0	Set value of low temperature alarm set-L; When L=0, cancel the alarm; When the temperature is too high, the high temperature alarm displays L02
9	Pt	0-240 min	20	Print interval
10	tH1	20.0~50.0℃	40	Upper limit of ambient temperature alarm
11	P1	Automatic heating mode 1 Automatic heating mode 2 Automatic heating mode 3 Always on 4 Always off5	2	Mode 1: It shall be judged as once after the door is opened and closed once and heated for 5min (time setting). If the door is opened and closed again during the heating period, the heating time will be updated again; Mode 2: After the compressor is running. Heater on; When the compressor stops, the heater is delayed for 1 minute for turn-off; Mode 3: When the humidity in the cabinet is more than 80%, the door heating is on, and when the humidity in the cabinet is moderately less than 60%, the door heating is off; Mode 4: Door heating is always on; Mode 5: Door heating is always off.
12	Ps1	0~9999	5	User menu password settings
13	Max	-	-	The highest temperature since last clearance
14	NIN	-	-	The lowest temperature since last clearance
15	CLR	-	-	Clearance of the Max and Min temperature records

Quick setting of time after power on

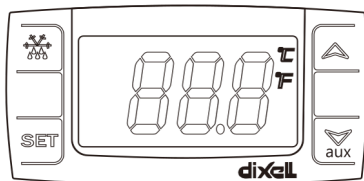
After the power-on self-test on the display board is completed, the quick setting menu is displayed.

Menu item	Menu	Menu description	Set range	Default	Unit
Quick Settings menu	n	Set logger module time - year	10~50		/
	y	Set logger module time - month	1~12	--	/
	r	Set logger module time - day	01~31	--	/
	S	Set logger module time - hour	00~23	--	/
	S	Set logger module time - minute	00~59	--	/
	F	Print interval	0~240	20	/
	Pt				min
	SCY	Temperature data recording period	0~240 0: shielded recorder	10	min

If there is no operation for 60 seconds under the quick setting menu, it will automatically exit the quick setting menu and return to normal display.

5. Alarm display

Alarm Code	Default Description
H01	Upper chamber high temperature alarm
L01	Upper chamber low temperature alarm
H02	Lower chamber high temperature alarm
L02	Lower chamber low temperature alarm
H03	High ambient temperature alarm
door	Door opening alarm
PF	Power failure alarm
bL	Low battery alarm
EE	Communication failure
E2	Upper chamber temperature sensor alarm
E4	Lower chamber temperature sensor alarm
Er	Data Logger not connected
Pr	USB Data logging failure
LoF	Data Logger not started



Type C control panel

Function description of Type C control panel(Applicable to DW-FL90,DW-YL90,DW-FL270,DW-YL270)

Note: This thermostat cannot be configured with a printer,remote alarm terminal,RS485 interface

1. Introduction of temperature controller interface

1.1 Indicator status description

LED indicator	Status	Description
	Light	Cooling
	Blink	Compressor start delay
°C/°F	Light	Unit of temperature
°C/°F	Blink	Setting parameters

2. Function Settings

2.1 Check the temperature setting value

In the normal operation state, press and immediately release the SET key, the value of setting temperature is displayed on the screen, press again and immediately release the SET key , or wait for 5 seconds to return to the normal display state of temperature in the cabinet.

2.2 Modify the temperature setting value

1. Press Set key continuously for 3 seconds;
2. The Set value will be displayed, and the LED indicator "°C" or "°F" will flash;
3. Change Settings by pressing ▲ or ▼ within 10 seconds;
4. Press Set key or wait 10 seconds for no operation to store the new Set value.

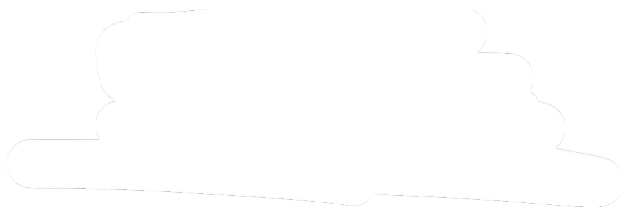
3. Alarm codes

Alarm codes	Fault description
P1	Sensor failure
HA	high temperature alarm
LA	low temperature alarm
dA	door ajar alarm

- Do not immediately put any items in the medical freezer when just connect to the power. Let the refrigerator run for a period (about 24 hours), and then put the items in the refrigerator.
- When put in items to the refrigerator, if the item is too moist or too dry, it will affect the change of humidity in the box. The item is best sealed and stored. Similarly, the humidity of the working environment of the medical freezer will also affect the humidity change in the box, especially the excessive opening of the door or the door is not closed.
- Each time for storing items, they cannot exceed 1/3 of the cabinet capacity, after reach the actual temperature and run normally for 24 hours, then put another 1/3 of the cabinet capacity items.
- Please be careful not to block the air outlet and the air inlet when put in the items.
- Do not place the item directly on the bottom of the medical freezer. It should be placed on the rack; otherwise it will affect the cooling effect of the medical freezer.
- Do not open the door during the cooling process; otherwise it will cause the temperature to rise.
- Due to the cooling inertia, the display temperature and the set temperature may be different when the product reaches the set value and shutdown. This is a normal phenomenon.



Warning: Please keep the medical freezer out of reach of children.



Notes:

- ◆ Do not use sharp metal appliances during defrosting to avoid damage to the Ultra-low temperature freezer.
- ◆ Not to position the equipment so that it is difficult to operate the disconnecting device of separable plug.
- ◆ Protection impairment if used in a manner not specified by the manufacturer.
- ◆ The integrated overload protector within our products is programmed to shut down the power supply automatically with respect to short circuit and/or system overload for the sake of protecting the entire system and crucial components such as the compressor.

7.2 Equipment Discontinuation

Deactivation: If the equipment is stored in an unsupervised area for a long time and not used, the power supply should be cut off and the inner and outer surfaces of the cabinet should be cleaned with a warm, damp soft cloth, aired and sealed. The equipment must be locked to ensure that children cannot open the cabinet door.

Scrapping: When the equipment reaches the end of its service life, it should be scrapped and must be handed over to a qualified professional recycling agency for disposal per local regulations. Non-professionals are not allowed to disassemble and break down the equipment without authorization. The scrapped equipment should be placed in a designated area inaccessible to children to avoid danger.

7.3 Maintenance, Replacement, and Recovery of Rechargeable Batteries

Battery installation position: top of the cabinet and bottom inside the electrical box.

1. Battery maintenance

- ① In order to prolong the service life of the battery and avoid the product being left unused for a long time, the product must be operated for more than 24 hours every month to facilitate charging;
- ② The equipment should be connected to power supply regularly (generally once a month) and turn on the power switch and battery switch for a period of time to complete the charging if it's not used for a long time, and each charging time should not be less than 24 hours;
- ③ Power switch and battery switch should be turned off in time after discontinuation of equipment, otherwise it will cause battery capacity loss and in serious cases battery permanent damage could happen;
- ④ The main power switch must be turned off during a long-term power outage or during transportation, otherwise long-term discharge causes power loss in battery and even permanent damage to the battery, and the display is abnormal after re-energizing;
- ⑤ The battery is consumable, with a service life of about 2-3 years. If the battery is used improperly, such as power loss or reaching the end of battery life, it will cause a low battery alarm (refrigeration is not affected, but there is an alarm failure and influence to the use function of the printer, please contact the after-sales staff of local distributors for replacement).

2. Battery replacement and recovery

- ① Turn off the power switch and pull out the power plug from the outlet;
- ② Remove the screws on the electrical box with a screwdriver. (Note: There are high-voltage electrical components in the electrical box, therefore before opening, turn off the power supply, unplug the power plug and turn off the power lock switch of the refrigerator, and the electrical box can only be opened by qualified engineers or maintenance personnel);
- ③ Pull out the battery connecting cable; (Before unplugging the battery fixing cable, pay attention to the cathode/anode of the battery and the sequence of the connecting cables, so as to prevent burning down the control system due to installation of the new battery with cathode/anode reversed. Generally, the red wire is connected to the cathode, and the black wire is connected to the anode);
- ④ Use a screwdriver to remove the fastening screws on the battery fixing plate and take out the battery;
- ⑤ For a replaced battery that can be recycled, please contact the local battery recycling agency.

Tips:

In order to effectively ensure that the battery replacement meets the requirements of the control system and avoid the influence of improper operation on the system, please contact our after-sales personnel for replacement or guidance.

When the circuit is short circuit or overloaded, the overload protector will disconnect the power supply of the device. Please contact after sales at this time.

8. Troubleshooting and Maintenance Services ■■■■■■■■■■

Any product may fail. Please observe the operation of equipment in time during use. If there is any abnormality, please check and handle it according to the following table first. If the abnormality can't be changed, please inform our service center in time, and we will serve you wholeheartedly to avoid losses.

Problems	Causes and solutions
Equipment does not work	Please make sure that the outlet is energized. Please make sure power plug is plugged in, not loose. Please make sure the power fuse is not disconnected. Please make sure the supply voltage is appropriate, not too low or too high.
Compressor is not running	Please make sure that the temperature is set correctly. Please check whether the temperature inside the cabinet is too low.
The temperature does not reach the set value	Please make sure that the door is closed tightly and don't open it too many times during a short time. Please don't put too many items in at one time.
High noise	Please make sure that the cabinet is placed on a flat ground. Please make sure that the cabinet does not contact the wall.
Condensation on cabinet surface	In rainy and humid seasons, door condensation is normal, and it shall be wiped off with a dry cloth.
Undesirable odor	Equipment needs to be cleaned. Items with heavy smell are not packed.
The door is not closed properly,	Please make sure that the temperature is set correctly. Please check whether the temperature inside the cabinet is too low.
The alarm lamp flashes and the buzzer is triggered	After the equipment is used for a period of time, the door seal becomes hard and deformed. Maintenance method: Blow the deformed part of the hot seal with a blower to
Lighting damage (refrigeration equipment)	Please call the after-sales telephone and contact after-sales service personnel of MELING BIOMEDICAL for replacement. Please do not replace the parts by yourself.



Warning:

The following conditions are not faults

- ① When the compressor starts and stops, the equipment parts will make a slight impact sound;
- ② When overheated items are put in after the door is opened, high temperature alarm and high

humidity alarm will be triggered in the control system (if this function is available, please refer to the alarm display table);

Solution: Put the items into the equipment after they are naturally cooled. Put the items in small quantities in batches, and do not put too much at a time. After the system runs stably, the high temperature alarm and high humidity alarm will be released automatically.

- ③ Slight sound of running water caused by refrigerant flowing in the pipeline.

- ⚡ The system contains refrigerant under high pressure. Do not tamper with the system. It must be serviced by suitably qualified persons only.
- ⚡ Connect to potable water supply only.
- ⚡ Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- ⚡ If symbol ISO 7000-1701 (2004-01) is used, its meaning shall be explained.
- ⚡ In order to reduce flammability hazards the installation of this appliance must only be carried out by a suitably qualified person.
- ⚡ The refrigeration system is under high pressure. Do not tamper with it. Contact qualified service personal before disposal.

① When the compressor starts and stops, the equipment parts will make a slight impact sound ;

Solution: Put the items into the equipment after they are naturally cooled. Put the items in small quantities in batches, and do not put too much at a time. After the system runs stably, the high temperature alarm and high humidity alarm will be released automatically.

! Notes:

- ## 9. Specification ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

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Model	Ambient temperature (°C)	Climate type	Refrigerant and oil	(Rated) voltage (V~)	Rated frequency (Hz)	Temp Range (°C)	Volume (L)	(Rated) current (A)	Weight (kg)	Exterior dimensions (DxWxH) (mm)
DW-YL90 (Spraying aluminum liner)	16-32	N	R600a/55g	220-230	50	-10~-25	90	0.98	54	669×700×854
DW-YL90 (Stainless steel liner)	16-32	N	R600a/55g	220-230	50	-10~-25	90	0.98	59	669×700×854
DW-YL270 (Spraying aluminum liner)	16-32	N	R600a/97g	220-230	50	-10~-25	270	1.53	90	640×700×1792
DW-YL270 (Stainless steel liner)	16-32	N	R600a/97g	220-230	50	-10~-25	270	1.53	98	640×700×1792
DW-YL450 (Spraying aluminum liner)	16-32	N	R600a/65g×2	220-240	50	-10~-25	450	1.9	136	741×810×1960
DW-YL450 (Stainless steel liner)	16-32	N	R600a/65g×2	220-240	50	-10~-25	450	1.9	162	741×810×1960
DW-YL450 (HIPS)	16-32	N	R600a/65g×2	220-240	50	-10~-25	450	1.9	128	741×810×1960
DW-FL90 (Stainless steel liner)	16-32	N	R290/50g	220-240	50	-20~-40	90	1.33	62	669×700×864
DW-FL90 (HIPS)	16-32	N	R290/50g	220-240	50	-20~-40	90	1.33	52	669×700×864
DW-FL90 (Spraying aluminum liner)	16-32	N	R290/50g	220-240	50	-20~-40	90	1.33	54	669×700×864
DW-FL270 (Stainless steel liner)	16-32	N	R290/115g	220-240	50	-20~-40	270	2.8	98	640×700×1792
DW-FL270 (HIPS)	16-32	N	R290/115g	220-240	50	-20~-40	270	2.8	86	640×700×1808
DW-FL270 (Spraying aluminum liner)	16-32	N	R290/115g	220-240	50	-20~-40	270	2.8	90	640×700×1792
DW-FL450 (Stainless steel liner)	16-32	N	R290/50g×2	220-240	50	-20~-40	450	4.50	162	735×810×1960
DW-FL450 (HIPS)	16-32	N	R290/50g×2	220-240	50	-20~-40	450	4.50	133	735×810×1960
DW-FL450 (Spraying aluminum liner)	16-32	N	R290/50g×2	220-240	50	-20~-40	450	4.50	144	735×810×1960

M ooddeel I	Ambient temperature (°C)	Climate type	Refrigerant and load	Rated capacity (L/h)	Rated frequency (Hz)	Temp Range (°C)	Volume (L)	(Rated) current (A)	Weight (kg)	Exterior dimensions (DxWxH) (mm)
DDW--YYLL9900 (SSppraayinnngg aaluuminnuum llinneerr)	1166--3322°C	NN	R600a/ 55g	220--240	60	-10~-25	90	0.59	54	678×700×864
DDW--YYLL9900 (SStaainnleessss ssteeenn llinneerr)	1166--3322°C	NN	R600a/ 55g	220--240	60	-10~-25	90	0.59	62	678×700×864
DDW--YYLL9900 (HHIIPPPSS))	1166--3322°C	NN	R600a/ 55g	220--240	60	-10~-25	90	0.59	52	678×700×864
DDW--YYLL227700 (SSppraayinnngg aaluuminnuum llinneerr)	1166--3322°C	NN	R600a/ 97g	220--240	60	-10~-25	270	1.05	90	640×700×1792
DDW--YYLL227700 (SStaainnleessss ssteeenn llinneerr)	1166--3322°C	NN	R600a/ 97g	220--240	60	-10~-25	270	1.05	98	640×700×1792
DDW--YYLL227700 (HHIIPPPSS))	1166--3322°C	NN	R600a/ 97g	220--240	60	-10~-25	270	1.05	86	640×700×1808
DDW--YYLL445500 (SSppraayinnngg aaluuminnuum llinneerr)	1166--3322°C	NN	R60R06a0/06a5/ 6×52g×2	220--240	60	-10~-25	450	1.4	136	741×810×1960
DDW--YYLL445500 (SStaainnleessss ssteeenn llinneerr)	1166--3322°C	NN	R60R06a0/06a5/ 6×52g×2	220--240	60	-10~-25	450	1.4	162	741×810×1960
DDW--YYLL445500 (HHIIPPPSS))	1166--3322°C	NN	R60R06a0/06a5/ 6×52g×2	220--240	60	-10~-25	450	1.4	128	741×810×1960
DW-FL90 (Spraying aluminum liner)	16~32	N	R290/50g	220-240	60	-20~-40	90	1.76	54	669×700×864
DW-FL90 (HIPS)	16~32	N	R290/50g	220-240	60	-20~-40	90	1.76	52	669×700×864
DW-FL90 (Stainless steel liner)	16~32	N	R290/50g	220-240	60	-20~-40	90	1.76	62	669×700×864
DW-FL270 (Spraying aluminum liner)	16~32	N	R290/ 115g	220-240	60	-20~-40	270	2.22	90	640×700×1792
DW-FL270 (HIPS)	16~32	N	R290/ 115g	220-240	60	-20~-40	270	2.22	86	640×700×1808
DW-FL270 (Stainless steel liner)	16~32	N	R290/ 115g	220-240	60	-20~-40	270	2.22	98	640×700×1792
DW-FL450 (Spraying aluminum liner)	16~32	N	R290/ 45g ×2	220-240	60	-20~-40	450	3.71	144	735×810×1960
DW-FL450 (Plastic liner)	16~32	N	R290/ 45g ×2	220-240	60	-20~-40	450	3.71	133	735×810×1960
DW-FL450 (Stainless steel liner)	16~32	N	R290/ 45g ×2	220-240	60	-20~-40	450	3.71	162	735×810×1960

* The foaming material of this product is cyclopentane.

10. Accessories ■■■■■■■■■■

Name	Operation Manual	Certificate of Conformity	Key	Defrosting shovel
Number	1	1	2	1

* The specific packing list shall be subject to the physical objects received.



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Material Code: 890375568
Production Date: See nameplate on the freezer body
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