

Ultra-low Temperature Storage Box

Instruction Manual

Applicable to the following product models: DW-86W20



- Please read the instructions carefully before use
- Please keep it in a safe place for reference
- In the event of a malfunction, please do not repair it yourself or leave it to our unauthorized repair department, but contact us directly by mail.

Announcement

Thank you for choosing and using this product. For your safe and convenient use and reasonable maintenance of this product, please read the instruction manual carefully before use and keep it in a safe place for reference.

The company has no obligation or responsibility to be responsible for any damage caused by the user's failure to follow the “ instructions for use” stated in this manual, or for any injury caused by the user's failure to follow the “ safety instructions” .

Users must do the following three points in use:

1. Always use the correct protective equipment (including clothing, gloves, etc.);
2. always adopt good hygiene practices and operate in strict accordance with the product instructions;
3. Everyone is obliged to take responsibility for their own safety.

Due to the continuous improvement or update of the product, the product you get may not be exactly the same as the illustration in this manual, the appearance of the product please prevail in kind.

-If there are other requirements for use, please contact our company to customize.

-Without the written permission of our company, the contents of this manual may not be copied and used in any form, and our company retains the copyright.

-The contents of this manual are subject to change without notice.

Security Tips

Please read this manual carefully the first time you use this product!

This product is recommended to be operated by trained and authorized personnel.

If the operator encounters a situation that is not mentioned in this manual, please contact us by e-mail and ask for the correct way to handle the situation.

Try to use the accessories provided by the Company, if the user wants to use other accessories, the Company will not be responsible for the adverse consequences. However, the user can apply to the Company to verify whether the accessories meet the Company's requirements.

The product must be inspected and maintained at specified intervals.

It is strictly prohibited to store live animals or other items that are not compatible with the storage temperature of the product.

In order to ensure the normal operation of the product and ventilation and heat dissipation, the back and left and right sides of the box are at least 30CM(11.8Inch) away from the wall, and the air inlet and outlet must not be blocked by obstacles.

Once the power supply is interrupted during use, it is necessary to wait for 5 minutes before reconnecting to avoid damage to the compressor;

If encountered machine failure or power outage this series of products box temperature will rise, if the short time can not be repaired, please take out the stored items, transferred to other storage items in line with the temperature requirements of the place of storage, to avoid damage to the items.

When using this product to access items, please wear safety gloves for your personal safety.

I. Product Characteristics and Scope of Application

Product Features

- Adopts copper tube finned air-cooled condenser, good heat dissipation and fast cooling speed.
- Ultra-thick heat insulation layer, can effectively reduce the loss of cold, save electricity and extend the service life.
- Adopts stainless steel inner liner and plate and tube type refined copper tube evaporator, with good refrigeration effect and easy to clean.
- Adopt imported microcomputer temperature controller, precise temperature control, more accurate and safe. Digital display box temperature, beautiful and easy to use, do not have to open the door to view and adjust the box temperature and work status.
- Adopting new environmentally friendly low-temperature refrigerant mix, the refrigeration system adopts all imported components, good reliability and long service life.

Product Application

This product can be used for scientific research, low temperature preservation of special ice cream and tuna and other products as well as low temperature experiments of special materials, etc. It is widely used in food freezing, scientific research institutes, industrial and mining enterprises, bioengineering research, electronics and chemical industry, ocean fishing and other industries.

II. Product installation and precautions

- Handling: The inclined surface should not be greater than 45 degrees when handling, and the door should be lightly moved and placed.
- Do not grab the door body, door lock or handle as a stressed part.
- This product should be cleaned once before use.
- Use environmental requirements:
 - a) Indoor use;
 - b) The mounting surface must be horizontal, non-combustible as well as able to withstand the weight of this series of products when in operation;
 - c) Placed in a place not exposed to direct sunlight and away from heat sources, the ambient temperature is not higher than 32 °C .
 - d) Require this series of products around the space of 30cm or more, easy to ventilate the heat;
 - e) Can not be placed in too cold to freeze in the environment;
 - f) Can not be placed in heavy moisture or easy to splash water.
 - g) no electromagnetic interference around, electromagnetic interference will affect the normal operation of the control system, serious cases will directly damage the system.

Note: This product needs to be static for 12 hours before the initial power on.


Note: This series of products just turn on the power do not immediately put the items, to run for a period of time, the temperature inside the box drops to the set temperature, and then put the items into the batch.


Note: A single batch of items can not be put into the box volume of more than 1/4 of the series of products of the working system: intermittent running

Safety Precautions:

- This product is strictly prohibited to be put into flammable, explosive dangerous goods and strong corrosive acid, alkali and other items;
- The power cord should not be used in bundles, pressed under heavy objects, or close to heat sources such as compressors.

 The symbol on the nameplate reads “WARNING” .

 The symbol on the nameplate reads “Danger of high temperature, do not touch to prevent burns” .

 The symbol on the nameplate reads “Danger of electric shock, do not touch to prevent electric shock” .

III. Start the test machine

- Connect to the power supply, the temperature control display lights up.
- After 3 minutes of power-on delay, the system will automatically start the compressor, the system into the refrigeration cycle.
- After power on for a period of time, the temperature inside the box has dropped significantly, indicating that the refrigeration system is working properly.

IV. The controller function and basic operation

KELD Controller, Spain (KHT11IB)

Control panel structure:



Parameter List				
Code	Parameters	Unit	Scope	Factory Setting
SP	Shutdown Temperature	Degree	r1-r2	On Demand
r0	Temperature Return	Degree	0.1-20	2.0
r1	SP Min	Degree	-200-r2	On Demand
r2	SP Max	Degree	r1-50	On Demand
P1	Temperature Calibration	Degree	-20-20	0.0
A0	Over Temperature Alarm Tolerance	Degree	0-99.9	2.0
A1	Over Temperature Alarm	Degrees	0-999	0.0
A2	Power-on disable over-temperature alarm	Minutes	0-999	On Demand
A8	Over-temperature alarm delay	Minutes	0-250	On Demand
H5	Parameter setting password	Numbers	0-999	0
c0	Minimum downtime	Minutes	0-59	0
c2	Fault status	Options	ON/OFF	ON
P4	Fractional display	Options	YES/NO	YES

Temperature control instructions

Parameter setting

Press the SET key. The word SP will be shown on the display.

Press the SET key again. The display shows the SP temperature value.

The SP temperature can be adjusted by ↑ and ↓.

Press the SET key to confirm the set temperature.

Press SET key and DOWN key at the same time to exit the parameter setting, or wait for one minute, the display will automatically exit the setting interface.

Led indication, buzzer and display information

OUT on the LCD screen represents whether refrigeration is in progress or not. When refrigeration is in progress, the display light is always on; when the thermostat is waiting for the minimum shutdown time (50% bright 50% dark)

Under normal conditions, the temperature of the probe will be shown on the display.

In the case of an alarm, the display message is as follows (Alarm indicator light on and buzzer beeping):

000—Temperature Probe Failure Alarm Acknowledgement ---Short circuit failure

ALH—High Temperature Alarm ALL—Low Temperature Alarm


In case of an alarm, the internal buzzer and the alarm indicator are activated and the corresponding message is displayed.

The buzzer can be silenced by pressing the SET button. **Parameters are subject to change without notice.**

V. Storage Essentials

- Before storing items, the box should be run empty first, and after entering the stable operation state (preferably run empty for more than 4 hours), the box should be cooled down sufficiently, and then put in the refrigerated items.
- The items or other products put into the box at one time should not be too much overcrowding, should ensure that there is an appropriate gap to facilitate the circulation of cold air in the box.
- Low temperature preservation box refrigeration system is used to maintain low temperatures, rather than a rapid freezing device, such as storage of large capacity (high water content of the material), should be pre-cooled in other quick-freezing device and then deposited, so as not to cause the refrigeration system to operate for a long time without stopping.
- When the initial storage volume is large, the temperature setting should be taken to gradually reduce the temperature, each step cooling 10 °C , holding 1-2 hours, until the preserved temperature.

VI. Care and Maintenance

- Box cleaning: cleaning the internal and external surfaces of the cryopreservation box should be non-corrosive neutral cleaning agent, after cleaning, dry with a dry cloth.
 Note: It is strictly prohibited to use water to rinse the internal and external surfaces of the box directly, so as not to affect the electrical insulation properties. It is strictly prohibited to use boiling water, decontamination powder, acid, alkali, gasoline, alcohol, benzene, corrosive cleaning agents, hard bristle brush for cleaning.
- Use a soft brush or vacuum cleaner to remove the dust on the condenser frequently to maintain good condensation.
- Low-temperature preservation box for long-term operation, the door seal, the cabinet mouth part and the box sidewalls are easy to accumulate frost, frost layer is too thick will affect the sealing performance and refrigeration performance, please use the defrosting shovel to defrost regularly, and wipe clean with a dry cloth.
- Cleaning of the inner and outer surfaces of the preservation box should be non-corrosive neutral detergent, after cleaning, dry with a dry cloth.
- Shutdown: when the preservation box is out of service, it should be unplugged from the power supply, cleaned according to the above method, covered with a good plastic bag after natural drying, and placed in a ventilated and clean place.

VII. Non-malfunctioning phenomena

- Hear the sound of running water in the cryopreservation box: this is the sound of refrigerant flowing in the pipeline.
- The compressor is hot: when the compressor is working, the surface temperature is high.
- There is condensation on the door seal: in the rainy and humid season or relative humidity environment, there may be condensation on the outside surface of the box and the door seal, just wipe dry.
- The temperature inside the box will sometimes rise above the set value within the temperature control range: this is because the system is in the regular frost, frost automatically restored after the end.

VIII. General troubleshooting and maintenance services

Alarm Code	Code Description	Generating Conditions
000	Temperature Probe Fault	Communication failure or temperature sensor failure
---	Short Circuit Fault	Short circuit in thermostat
ALH	High Temperature Alarm	Temperature above the high temperature alarm and time greater than A8
ALL	Low Temperature Alarm	Temperature below the high temperature alarm and time greater than A8

Note: Press the “ SET” and “ ↓ ” keys at the same time, the beeping will be aborted, the fault is not eliminated after 30 minutes, the beeping will sound again.

Some malfunctions may also be caused by improper use. Please check the following table for your own troubleshooting:

Problem	Causes
The product does not work	Is the power plug energized? Is it plugged in or loose? Is the supply voltage too low or too high
Compressor does not run	Is the temperature setting correct?
Temperature continues to drop after reaching the set value	Is the temperature setting correct?
The compressor does not work and does not cool	Is the compressor damaged? Controller and control wiring damaged?
The temperature does not reach the set value	Is the door not closed tightly or opened too many times in a short time? Are too many items put in at one time and is the temperature of the items too high? Is the ambient temperature too high?
The noise is too big	Does the box touch the wall or other obstacles?

If you can not determine the cause of the failure, or difficult to troubleshoot, please contact our after-sales service, and inform your name, order, product application scenarios, telephone, purchase time, failure phenomena, etc., professional engineers will be happy to serve you.

Contact e-mail: zzkd-justin@hotmail.com

NOTE:

1. From the time when the user reports the repair, the after-sales service personnel of our company should be processed within 24 hours;
2. In the product over-temperature alarm function is normal, belonging to the user does not transfer the stored items in time and lead to the loss, the company will not be compensated;
3. Due to the product over-temperature alarm function is abnormal and lead to the damage of the stored items in the box, the company will be compensated, but the amount of compensation does not exceed the price of the equipment itself when the equipment is purchased.

Electrical Schematic

