

Thank you for using our cold room, for the item can work in the best status, please read this manual carefully. Please keep this manual well for your reference.

# Catalogue

1. Instruction for temperature adjustment
2. Instruction for the freezer body
3. Instruction for the assembly of the cold room

## The catalogue for the body of the cold room

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Attention: we design the new item and improve the performance for all the time, if there are amendments in the instruction book, we would not inform our costumers.

### 1. Characteristic

this assembly is suitable for many types of high and medium temperature cold room ( for: super market, chain restaurant, food processing, hotel, subsidiary food, aquatic products, fruit and vegetables, hospitals, research institute)

Our combined type cold room can make up to different height, different width and volume according to the actual requirement, and it is convenient to take apart. The material of the isolation plate is polyurethane, and there are many type of metal can be chosen on the surface of the plate (galvanized sheet steel, stainless steel, and other embossed aluminum sheet). The polyurethane material is the best choice, cause the thermal conductivity is less and with high strength.

our adopt the specialized equipment for cutting, pressing rib, bending and forming. The thermal insulation plate has the following characteristics

- adopt the top brand foaming machine, then the thermal plate is with very good heat-insulating property.
- the heat insulation material is uniform density, and the heat conduct rate is less than  $0.024W/m\cdot K$ .
- the automatic forming plate ensure the surface of the heat insulation plate smooth and even, and the homiothermic, pressure maintaining, improve the foaming quality.
- the density of polyurethane plate is more than  $40kg/m^3$ , and it is high strength and not easy to deform
- there is fire retardant added in the polyurethane plate, and it is less than 5 second to extinguish, and it is safer.
- the soft rubber edge on the plate ensure it seal well.
- there are automatic close hinge on the door and reduce loose more cold temperature.
- there are fluorescent light on the door in the freezer, and can see the door in the dark.
- there are heating wires pre-installed in the doorframe, to avoid the door freeze together with the doorframe.
- install the pressure relief vent, avoid damaging the freezer when the pressure difference is too large between the inside and the outside.

## 2. The application scope of the freezer

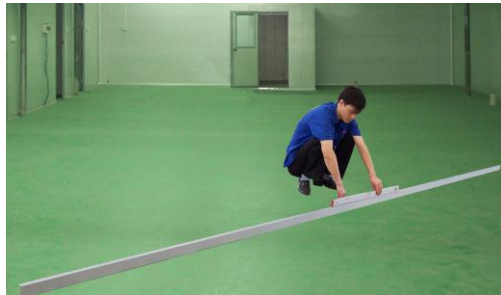
- our freezers have different temperature scope: higher temperature: the item with temperature upper  $10^{\circ}\text{C}$  is mostly used for building insulation, and it is with the 50mm insulation board.
- $-5^{\circ}\text{C}\sim 5^{\circ}\text{C}$ , mainly used for store the vegetables, fruits, eggs, medicinal materials, drying wood, and it is with the insulation board 75mm or thicker.
- medium temperature:  $-18^{\circ}\text{C}\sim -10^{\circ}\text{C}$ , to store meat, aquatic products, and the insulation board is 100mm or thicker.
- low temperature:  $-28^{\circ}\text{C}\sim -23^{\circ}\text{C}$ , to store ice cream, and other low temperature food, and the insulation board is 150mm.
- ultra-low temperature:  $\leq -30^{\circ}\text{C}$ , mainly used for quick-freezing food, medical treatment field. The insulation board is more than 150mm.

Cause the configuration of the insulation board and unit assembly is different, the high-ranking freezer can not used as the low-ranking freezer. We also do not recommend to use the low-ranking freezer can not used as the high-ranking freezer. The freezer is economic when it is used in the temperature range.

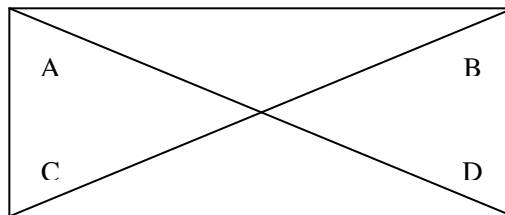
## 3. installation of the freezer

### 1) preparation before installing:

- the area where the freezer install should be dry and flat, the planeness  $\leq 5\text{mm}$ .
- if it is installed at outdoor, should make the shed to avoid the rain water. It can not be influenced by water and heat.
- The area for installing should be convenient for ventilation, dewatering, and maintenance.
  - i. Use the level gauge to inspect the planeness of the ground.

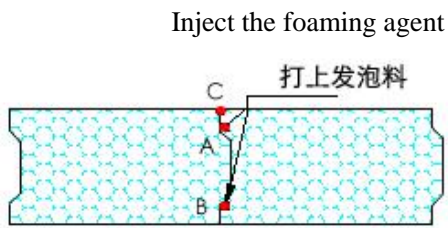


- ii. Check the diagonal line with thin scope,  $AD=BC$ .

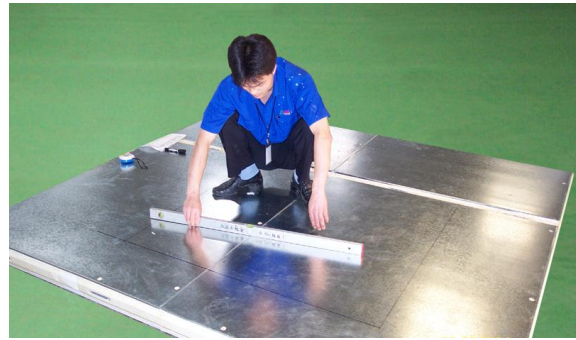


### 2. install the floor of the freezer.

- 1) fill the glass cement in the seam of the floor ( A ,B point as the picture ) before install. ①
- 2) Align each of the floor, and follow the serial number to fix the floors tightly with allen key.
- 3) Use the level gauge to check the planeness, and level up the ground, ensure that it can meet the requirement of the drawings.
- 4) Should clean the surface of the floor after installing.
- 5) Fill the cell foam in the seam of the freezer ( point C).



①



②

3 install the walls of the freezer.

1) Install one of the wall which is near to the door and in the corner, then it is stable. Align the wall on the edge of the floor.



①



②

2) check the verticality of the two board.



①



②



3) Install the other walls clockwise, door and division wall (use some of the coupler lock to avoid the walls falling down)

4) check if the wall is justify with the edge of floor. Cause the inaccuracy deviation and may be irregularity of some millimeter.

If the wall is short and the floor is long, then first lock the coupler lock of the floor, then lock the coupler lock of the walls. If the walls long and the floors short, then first lock the coupler locks of the walls, then lock the coupler locks of the floors.

Or move the walls horizontally, and ensure that it is justify between the walls and the floors which side is near to the door.

5) Check the verticality of the walls again.

4 Install the ceilings: if there are division walls, then first install the ceilings which are on the top of the division walls.

Then install the ceiling on both side of them. Align the ceilings with the walls (especially on the side of the door), if there are slide bases of the sliding doors are installed on the ceiling, then should pay attention to the alignment between the walls and the ceilings. If it is not justify between the ceilings and the walls, then justify them according to clause 2 and item 3.

5 Install the flat doors: it is the same with the installation of the walls, and need to make the plumb line. Or it will be not good for self-closing of the doors. there is a L-form pedal, should take it apart and cover it on the U- groove of the flat door, and should fix it with huck bolt. There are heating wires and wires of the lamp switch on the top the doorframe, and they should go through the hole on the ceilings. The voltage of the heating wire is printed on the wire, and they are as the following pictures.



①



②

6. Installation of the convex doors: there is a L-form pedal on the door, and should take it apart and cover it on the U-groove of the floor. Then fix it with huck bolt. There are two suite of heating wires pre-put in the doorframe, and one of them is spare. There is the outlet of the heating wires and wires for the lamp switch on the top of the doorframe ( same as the flat door ①), and they should go through the hole of the ceilings.



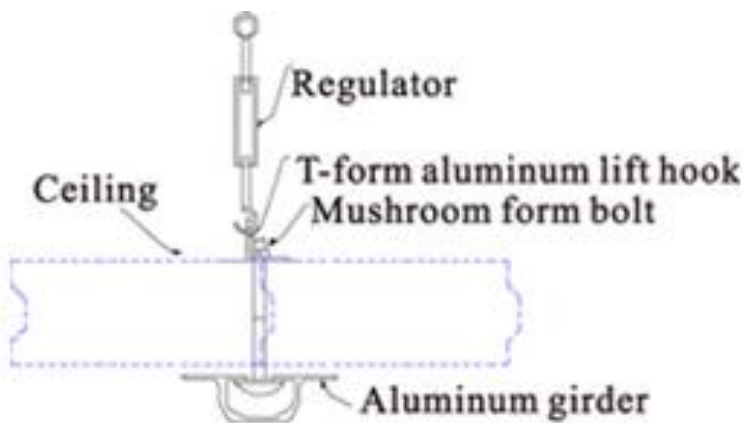
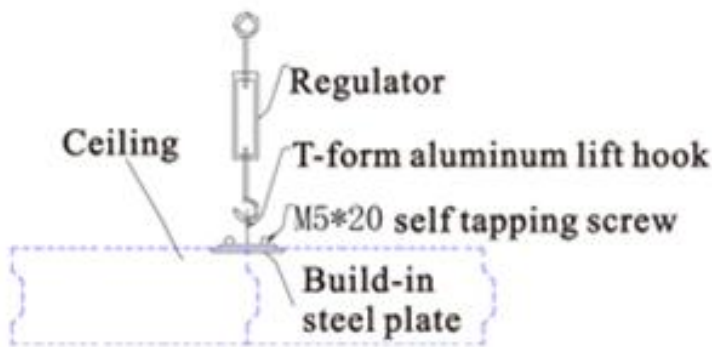
7. installation of the sliding door:

- 1) Fix the plate (or make a cement plateform) under the door.
- 2) Fix the slide base 1 and slide base 2 on the walls with threaded rod.
- 3) Install the door in the guide rail.
- 4) Install the slide base 3 and insert the guide rail 2 into the slide base 2, and fix it with threaded rod.
- 5) Install the back slide base, and pass the front slide base into the guide plate, and fix it on the plate (fix it on the cement plateform).
- 6) Install the stopper of the handle and the lock of the door.
- 7) Adjust the screw nut 1, and justify the lock hole. Ensure the distance between the door opening to the left / right door is 50mm. (it have been adjusted before sold and normally need not to adjust again).
- 8) Adjust the the front guide base, back guide base, screw nut 2 and screw nut 3 to ensure the door and the doorframe is tightly sealed. Pay attention to the glue edge under the door is sealed with the plate (or the cement plateform), and the slide door can move freely.
- 9) Install the heating wire in the the aluminum groove at the side of the doorframe, the lower heating wire is in the concave groove of the floor(if it is cement floor, and should prepare the concave groove for the installation of the heating wire). Check the attached picture of the slide door.



8. Lock all the coupler lock tightly, check all the plate on the floor to ensure they are sealed well, if some are not sealed, should fill the glass cement, then cover all the rubber plug. Fill the grease on all the guide rails and door hinges.

9. If the freezer need to hang, we have lift hook, and it can installed in the coupler lock, each lift hook can load 100 kgs (the lift hook can adjust automatically). Our T-form aluminum lift hook / aluminum girder, can load 400 / 600 kgs.



10. Attention:

- 1) the freezer should have balance windows, or the freezer will be out of shape easily, and it will be bad for sealing.
- 2) ensure the ground is flat.
- 3) before install the flat door should make plumb line to ensure the self-close.
- 4) should not over load on the top of the freezer.
- 5) the floor should fill the glass cement to avoid the water.
- 6) we have the record of installing for reference.
- 7) the voltage of the heating wire should be printed on the wire.

8) must follow our serial number and our drawings to install.

#### **4.the maintenance of the freezer**

1) maintenance of the freezer body:

(1) the surface of the walls.

1.1 wipe the surface with soft cloth which have dipped in neutral cleaner.

1.2 with the clean soft cloth to clean the residual cleaner.

1.3 With the soft dry cloth to clean the walls.

- do not use the cleaner which is with abradant, and do not use the corrosive cleaner.
- do not wipe the aluminum plate with ethyl alcohol.

(2) the sealing gasket:

Should always check the gasket, and always clean them to avoid them become deformed.

(3) the sealing plug:

If find the sealing plug lost, should stuff a new one. To avoid the water in.

(4) heating wires:

The heating wires of the doorframe and pressure relief vent should work normally, and avoid them to be frozen.

(5) the installation of the door:

Check and tighten the screw of hinge, lock, handle and the guard board. The hinge have been lubricated in the factory, and suggest you to lubricate one time in three month.

(6)the maintenance of the inside.

- there must be gap between the things in the freezer for airflow, and should form the air circle for the cold air which is from the cold air blower.
- Should clean and sterilize the freezer timely, and keep it hygiastic.

#### **5.guarantee for repair**

in the guarantee time, if not take apart by yourself and indeed can not use the freezer normally. If it is identified the problem is caused by manufacturing, and we guarantee for repair. If the problem is caused by transport, keep inappropriately, inconsistent voltage, or operate not follow the manual, we do not guarantee for repair. (for the guarantee clauses, please read the "guarantee card" and the contract)

If you install and operate correctly, and the problems occurred, please contact with our department of after-sell services, and we will offer the good service for you.

#### **6.matters need attention**

- try to open the door as few as possible, and try to open the door as short as possible. Can install the PVC portiere to reduce the waste of the cold temperature.
- can not hit the freezer body and the door
- should adjust in time if the assembly of the freezer body and the door is loosen.
- should lay the steel plate, rubber plate or inject cement on the platform of the freezer, especially in the place where should load heavy weight (for forklift or cart)
- the wires of the pressure relief vent and door should be connected by the specialized persons, and they will connect the wires corresponding voltage according to the diagram. When using the pressure relief vent, the heating wires must be electrified.
- the freezer can not use in the environment with the temperature higher than 80°C for long time.
- when two freezers are installed together, the distance between the two freezers must more than 500mm, and should be well ventilated.

- Except the specialized person, anyone can not take apart and improve the freezer. Or the freezer maybe leak the cold air or the strength of the freezer will be not enough.if you have any questions when you use, please contact with us at any time.

Thank you for using our freezer and assembly, to maintain the freezer work in the best status, please read this manual before using, and please keep this manual well for reference.

### Catalogue of freezer assembly

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Attention: we design the new item and improve the performance for all the time, if there are amendments in the instruction book, we would not inform our costumers.

#### 1.characteristic

this assembly is suitable for many types of high and medium temperature cold room ( for: super market, chain restaurant, food processing, hotel, subsidiary food, aquatic products, fruit and vegetables, hospitals, research institute) the main characteristic.

- ▲ New appearance and elegance.
- ▲ Small and save space.
- ▲ Optimized freezing system, and adjust the temperature rapidly.
- ▲ International top brand compressor: forceful, energy saving and long using life.
- ▲ Vane wheel (centrifugal) is with large diameter, and with high blowing rate, and the noise is low.
- ▲ Five type of rust-proof on the outside of the freezer, and the using life is long.
- ▲ This assembly is with negative pressure start, and extant the using life of the compressor.

Note: the mentioned information is little different with the publicity material, and hereby declare.

warning: the frozen assembly is with high voltage, and professional equipment, and it should be operated and maintained by the specialized workers. Please do not operate and check by other people in order to avoid the danger occur.

#### 2. installation

(1) position for installation

- ▲ Keep away from the flammable gas and corroded gas.
- ▲ Avoid the place of strong electricity, magnetic field.
- ▲ be well ventilated, and should not have barrier.
- ▲ Can bear the weight of the machine, and on the place where it can put horizontally. Should not in the noisy and vibrated place.



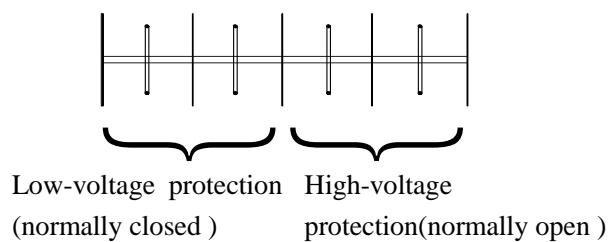
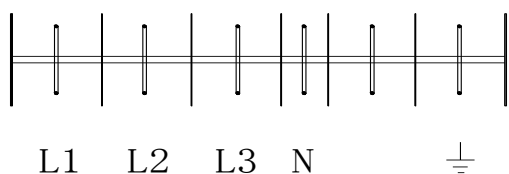
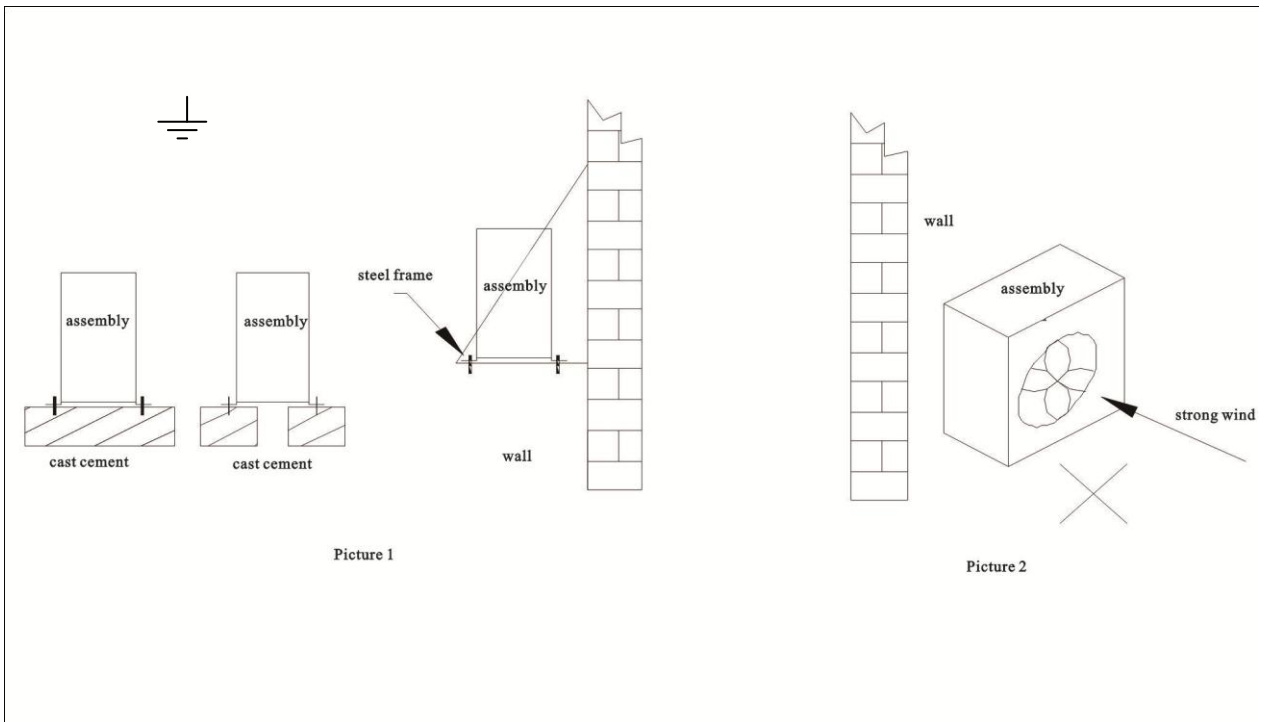
- ▲ Should not in the bad environment ( wind , straight sunlight, heavy soot and high temperature )
- ▲ Should in the place that children can not reach.
- ▲ Convenient for maintenance and repair, and be well ventilated.
- ▲ Can not block the public road and should not influence the others, and the noise and the exhaust air should not influence the others.

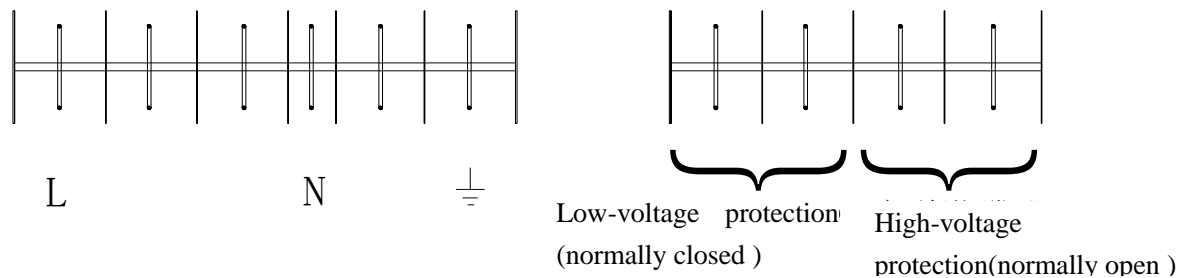
(2) attention for installing

- ▲ it should install on the solid base ( bricks or cast cement), to avoid the noise and vibration increasing. ( check the picture 1 )
- ▲ if installed on the seaside or have strong wind, and it should installed near the wall or make guard plate for it.( check the picture 2 )
- ▲ If the assembly is higher than the drought fan, to avoid the rain water flow into the room along the tube, should make a bend for the tube to ensure the lowest place is at the outside.

(3) connect the wires of the electric source:

- ▲ take apart the shield of the assembly, and can see one terminal for the wires, L1、L2、L3 (220V only L、N) is connected on the outlet terminal of the compressor, N connect with the neutral conductor directly, wire should connect with the grounding terminal of the electrical source, ensure the assembly is connected with earth. ( just like the picture 3 )





Picture 3

- ▲ Pay attention to the phase serial and avoid the compressor turning reversely ( check the high – low voltage or check the running current )

(4) connection of the tube

- ▲ The length of the tube should according to the specification chart, the diameter of the tube is depends on the diameter of the connection of the assembly.
- ▲ Pay attention to the bending place of the tube, and try to have less bending and can not damage the tube.
- ▲ When connecting should take off the screw nut from the stop valve, if the screw is taken off for long time, and the dust or other small things will get into the tube and cause problems.

(5) inspection

- ▲ insulation resistance: the wires, tubes should check the resistance after connected, and insulation resistance should  $> 2M\Omega$ , should not test the resistance if the compressor is in the vacuum status.
  - ▲ Ground connecting inspection: the installing staff should check the installed system by eyes and ground connecting instruments, and the ground connecting resistance should  $< 4\Omega$ .
- ▲ Inspection of leakage of electricity: when commissioning, the installing staff should inspect the shield and other places. If there is leakage of electricity, should stop and eliminate.
- ▲ Check the leakage: spread soap water on the suspicious places to check if have bubble. or use the leakage checking instrument to check. Can not use the oxygen or other air to check, only can use the dry nitrogen to check.

### 3 commissioning

(1)should pay attention when commissioning:

- ▲ Should not touch the electric element except the operating place.
- ▲ Can not touch the draught fan when it is working.
- ▲ Can not touch the compressor, exhaust pipe to avoid scalded when the assembly is working.
- ▲ Can not adjust the safety equipment to avoid damaging the assembly when it is working.
- ▲ Should turn off the running switch before checking the electric circuit, and turn off the electric source.
- ▲ If the running sound is abnormal, should stop the machine and have a check immediately.
- ▲ Ensure all the valves are open.
- ▲ Ensure the undulation range is in 10%.
- ▲ Ensure the temperature controller and other controllers are set correctly.
- ▲ When inject the refrigerant at the first time ( inject from the lower place ), must wait the pressure is balance then start the machine and start commissioning.
- ▲ The compressor should turn off only when after running for three minutes, and should restart only when three minutes later after turning off. And the compressor should not start and turn off frequently, and can not start more than five times in one hour. If start frequently, should enlarge the temperature difference of start / stop machine. Can not start the compressor in the vacuum status.

#### 4. maintenance

##### (1) electrical inspection

- ▲ Check the voltage of the electrical source is in the working range, and the phase serial is correct.
- ▲ Check the screw of fixing the wires is tight.
- ▲ Check if the contactor work normally, and if it wears.

##### (2) maintenance of the mechanical parts.

- ▲ When the assembly is used for sometime, the fin will be not good for heat radiation cause have lots dust attached. Should clean the fin with brush in the direction of the seam, then blow with the dry compressed air, and can not deform the fin.
- ▲ Check if the screw fix the air blower and compressor tightly.
- ▲ Check if the screw fix the tube tightly.

##### (3) check the parameters:

- ▲ check if the pressure gage is normal, and the pressure range is as the following:

Type of cold room	Refrigerant	Low pressure range (kg/cm <sup>2</sup> )	High pressure range (kg/cm <sup>2</sup> )
High temperature	R22	2~5	12~18
Medium temperature	R22	1~2	12~18
Low temperature	R502	0.4~1	10~16

#### 5. guarantee for repair

in the guarantee time, if not take apart by yourself and indeed can not use the freezer normally. If it is identified the problem is caused by manufacturing, and we guarantee for repair. If the problem is caused by transport, keep inappropriately, inconsistent voltage, or operate not follow the manual, we do not guarantee for repair. (for the guarantee clauses, please read the “guarantee card” and the contract)

If you install and operate correctly, and the problems occurred, please contact with our department of after-sell services, and we will offer the good service for you.



special attention:

- ▲ install and commissioning should be done by the specialized staff.
- ▲ except the refrigerant, can not let other things into the circulated tube.
- ▲ if it is abnormal or emergently, should stop and turn off the power.
- ▲ should keep the assembly upright when moving, do not hold the copper tube and other thin tubes.
- ▲ can not touch except the operator.
- ▲ keep the tube heat insulated, and keep the electric wires insulated.

#### 8.failure and reservation of the problems

Failure	reason	Resolve
The controller can not display	default phase, short phase, or the <u>fuse element</u> problem.	Check the electric wires and change fuse element.
	Three phase air switch or switch for controller do not turn on, or the controller or the electric deformer loose contact.	Check if there is 12 V output on the electric deformer of the computer.
	the controller of the computer failure	Change the controller of the computer.
the controller of the computer can	The <u>thermal relay</u> of the compressor break	Check the reason why the compressor is too hot, and eliminate the failure.

display but the compressor can not work	The protect switch of the high-low pressure protector is break.	Declare the reason that the freeze system is over pressure, and press the "RESET" after the failure is eliminated.
	The AC contactor or the coil failure.	Repair or change
	The temperature in the freezer is lower than the temperature set by the computer.	Reset the temperature of the working temperature.
	the thermal protector in the compressor break.	the compressor will restart automatically when it cooling down.
	the compressor failure	check the coil wires of the compressor.
the high pressure part of the freeze system is over pressure	the condensator is dirty	wash the condensator.
	the condensator blower do not work	check the the condensator blower and other control electric circuit
	the refrigerant is too much	let out some of the refrigerant
the pressure of high pressure section is too low	the refrigerant is less.	check if the system is sealed, and repair and inject the new refrigerant.
	the suck pressure is too low.	and check the resolve method of the suck pressure is too low.
the pressure of low pressure section is too high	it is over load	reduce the loading
	over supply of the <u>expansion valve</u>	adjust the over thermal value of the <u>expansion valve</u>
the pressure of the low pressure section is too low	the refrigerant is less	check if the system is sealed. Repair and inject the refrigerant again.
	the filter is jammed	change the dry filter
	evaporator is dirty or frozen.	wash the evaporator or defrost.
	the air blower can not work	check the air blower and other control circuit.
	the expansion valve can not supply enough	adjust the over thermal value of the expansion valve.
the temperature difference between the freezer and the display value of the controller is too large	the install place of the thermal sensor is not suitable, the wires are too long or the joint of the sensor contact bad.	change the sensor position, and use the wide diameter wires, and connect the wires of the sensor again.
there are too much ice on the fin of the evaporator	the time is too long for defrosting, and cause defrost incompletely each time.	defrost manually and adjust the time for defrost
the temperature of the freezer is too high and alarm	there are too many items in the freezer, and the door open frequently	reduce the items in the freezer and reduce the frequency of opening the door.
	freeze effect bad	check the resolve method of the freeze system failures.
	there are too many frost on the evaporator.	defrost manually and adjust the defrosting time
when defrosting,	the heating wires problems	Check the heating wires

the coiled tube of the evaporator do not work	defrost frequency is less.	adjust the defrost frequency of the controller.
the drain pan is frozen	the heating wires of drain pan failure or connected bad	check the heating wires
	the drain tube jammed.	wash the drain tube.

If have any questions when using our products, please contact with our company freely.

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