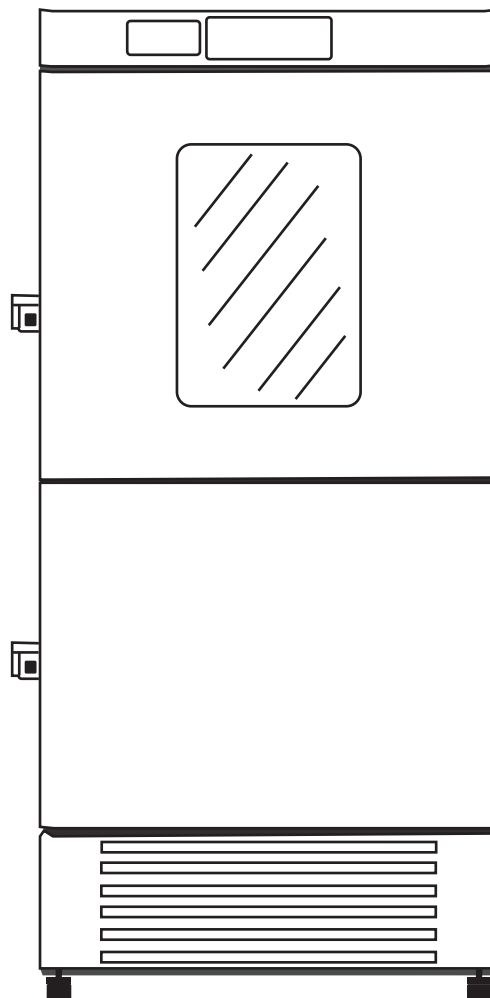


OPERATION MANUAL

Applicable model:

STFC-288 STFC-519

STFC-288A STFC-519A



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1. Operation Instruction

Dear Customer:

Thank you for choosing Antech products!

For your personal safety and better performance of this unit, please read this Operation Manual thoroughly and save it properly for future reference.

Failure to read, understand and follow the instructions in this manual may result in damage to the unit, injury to operating personnel and poor equipment performance, and we are not responsible for such damages caused.

Because of our quick product update, this manual may not comply with our products fully, please refer to the final product.







- The product can be operated by trained or authorized staff only.
- Maintenance of the equipment can be operated by Antech or its authorized agent only.
- If the operator comes across a situation that is not mentioned in this manual, please consult Antech or its authorized agent to get the right solution for your products.
- It may lead to damage to the protection of the products if not obey the regulations offered by the factory.
- Must use the spare parts supplied by Antech, such as compressor, thermostat, sensor, fan motor etc., if user need to use spare parts from others, it may lead to bad result, like performance influence, protection and its using life span.
- Must do inspection and maintenance at a regular time for the Combined refrigerator & freezers.














Warm tips:









- I. Please use proper protective equipment.
- II. Please keep good health habits.
- III. Everyone is bound to be responsible for his/her safety.












2. Safety Notices

For the first time to use this device, users must read the meaning of the following warning labels very carefully. Items and procedures are described so that you can use this unit correctly and safely. If the precautions advised are followed, this will prevent possible injury to the user and any other person.

 WARNING: Failure to observe WARNING signs could result in a hazard to personnel possibly resulting in serious injury or death.	 CAUTION. Failure to observe WARNING signs could result in injury to personnel and damage to the unit and associated property.
 CAUTION HOT. The sign inform the users about the danger of burns for high temperature.	 DANGER OF EXPLOSION The sign inform the danger of the application of volatile, explosive chemical substances.
 NO TILTING .	 STAY OUT OF SUN.

 WARNING. Failure to observe WARNING signs could result in a hazard to personnel possibly resulting in serious injury or death.
 As with any equipment that uses CO2 gas, there is a likelihood of oxygen depletion in the vicinity of the equipment. It is important that you assess the work site to ensure there is suitable and sufficient ventilation. If restricted ventilation is suspected, then other methods of ensuring a safe environment must be considered. <u>These may include atmosphere monitoring and warning devices.</u>
 Do not touch any electrical parts such as the power supply plug or any switches with a wet hand. This may cause electric shock.
 Only qualified engineers or service personnel should install the unit. The installation by unqualified personnel may cause electric shock or fire.
 Be sure to install the unit on a sturdy floor. If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over
 Carefully with the power cord to avoid short circuit or open circuit. When removing the plug from the power supply outlet, grip the power supply plug, not the cord. Pulling the cord may result in electric shock or fire by short circuit. Don't make the power line pack and pressed by furnish or heavy goods. Also please don't close to the compressor and heat source.
 Please insert the power plug firmly to avoid leakage.
 Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers. Don't lengthen the line randomly. If you need, To use 2.5mm ² copper line, you should keep 4mm ² line to connect the electrical outlet. Or may cause fire.
 Make sure a dedicated power source is used as indicated on the rating label attached to the unit. Out of the rate, should install a property transformer and a proper voltage stabilizer for securely operation. Or the freezer may be damaged, and may cause injury.
 Be sure to install the unit on a sturdy floor, no shaking and tilting.
 Never install the unit in a flammable or volatile location. This may cause explosion or fire.
 Never install the unit in a humid place or outdoor or a place where it is likely to be basked straightly. Deterioration of the insulation may result which could cause current leakage or electric shock.
 Do not place the device lateral tilt, do not impact the device; the device is equipped with refrigeration systems, roll or shock will easily damage the freezer.

	Be sure to install the device in a dry dust-free environment to avoid overheating, short circuit and other dangers
	If there is an unexpected sound, smell, smoke when the power is turned on, unplug the power and contact the manufacturer or supplier. Continued abnormal operation may cause electric shock or fire.
	Make sure to put the freezer in a dry and ventilated environment, to ensure that equipment vents and wall surface of the instrument or other items have not been blocked; Do not use the device in a poorly ventilated environment, or the equipment may be damaged by the release of heat.
	Never disassemble, repair, or modify the unit yourself. Any such work carried out by an unauthorized person may result in fire or injury due to a malfunction. Stalwart will be no responsible for such work.
	Never store volatile or flammable substances in this unit. This may cause explosion or fire. Never store corrosive substances in this unit. This may lead to damage to the inner components or electric parts.
	Use this unit in safe area when treating the poison, harmful or radiate articles. Improper use may cause bad effect on your health or environment.
	Never ground the unit through a gas pipe, water main, telephone line or lightning rod. Such grounding may cause electric shock in the case of an incomplete circuit.
	Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers

	CAUTION: Failure to observe WARNING signs could result in injury to personnel and damage to the unit and associated property.
	The equipment is not available to store non-living things, flowers, or other critical articles which is not suitable for low temperature storage.
	The temperature inside the freezer is very low during the normal working. Do not touch the interior surface of the chamber or the object inside without wearing protective gear.
	Always disconnect the power plug when the unit is not used for long periods.
	Make sure to prepare a safety check sheet when you request any repair or maintenance for the safety of service personnel. Be sure to check set point of the controller prior to restart the equipment.
	The Combined refrigerator and freezer is a storage device, not a production equipment!
	Always hold the handle when closing the door. This will reduce the likelihood of a trapped finger.
	Keep the key properly avoiding the children take it to open the back door which may result in unexpected injury.
	Select a level and sturdy floor for installation. This precaution will prevent the unit from tipping. Improper installation may result in water spillage or injury from the unit tipping over.
	Check the filter mentioned in this manual and clean it as necessary. A dusty filter may cause.
	Do not tilt the unit more than 45 degrees when moving the unit. All transportation should be carefully.

3. Precautions for Use

- ◆ Before you put the items to the combined refrigerator & freezer please make sure whether the temperature in the refrigerator/freezer has reached the set temperature and then put the items to the refrigerator/freezer in batches. No more than 1/3 of the refrigerator/freezer rating volume per time, in case the temperature rises too much.
- ◆ Combined refrigerator & freezer display value shows the temperature around the temperature sensors. Sometimes, there is certain difference between the display temperature and the actual temperature in the center of the refrigerator/freezer, but it will gradually close to the real temperature.
- ◆ Clean the refrigerator/freezer with the diluted neutral detergent. Do not use brushes, acid, gasoline, soap powder, polish or hot water to clean the combined refrigerator & freezer, as the above material may damage the painted surface and plastic rubber parts. Be careful not to use volatile solvents such as gasoline to wipe plastic rubber parts.
- ◆ The power should be cut off while the combined refrigerator & freezer does not use for a long time.

4. Installation

4.1 Installation environment:

- Ambient temperature: 16°C ~ 32°C, optimal ambient temperature : 18°C ~ 25°C, Air conditioning system is required if necessary.
- Relative humidity: ≤ 80%RH.
- No strong vibration and no corrosive gases around.
- Without the presence of a lot of dust.
- No shaking or vibrating of the refrigerator/freezer.
- Altitude of the place where the refrigerator/freezer is located ≤ 2000m
- Input voltage ≤ 220V ± 10% (V).
- No direct sunlight or any other cooling or heating source, no electromagnetic interference, or the equipment will not run properly.

4.2 Installation site :

This unit is a precision machine. When select a location to install this unit, keep the following conditions for perfect performance


- Should not be installed in a small confined space, the door of the room should not be less than height of the present equipment.
- Install the unit on a sturdy floor to avoid excessive vibration and noise.
- Installing the unit in direct sunlight may cause malfunctioning and may shorten the life of the unit. Keep good ventilation is necessary.
- Socket inputs should be connected to circuit protection facilities,
- Checking the working voltage of the place before start the freezer. A voltage stabilizer is suggested to be used at the place where the voltage is not stable. Make sure the normal input voltage stable at or 220V ± 10%, Power of voltage stabilizer should be more than 4KW.
- Be sure to ground the unit;
- If the power cord socket is equipped with grounding wire, check the connection before use.
- If the power supply outlets not grounded, it will be necessary to install a ground by qualified engineers

! Warning

- Dot through gas pipe, water pipe, line or lightning rod to product, it is easy cause electric shock
- After installation, power plug must be within reach, convenient unplug the power cord in time in case of an emergency
- Any articles shall not cover medical air vents of the equipment.

4.3 Preparation before using

- a. Remove all package components (include the protection foam inside the package)

 **Caution:** Do not put the packing plastic bag within reach of children as suffocation may result

- b. Check the device, accessories and document with the device as per list of packing
- c. Clean: make a clean of the device before use it.
- d. Before use, make sure the temperature control probe is immersed in the test liquid.

4.4 Standing

Do not turn on the freezer at once when the freezer is well located, must wait 24 hours for the first start.

4.5 Power on for the First Time

Operate as follows for the first start:

1. Connect the power cord to the appropriate socket during no-loading.
2. Check the temperature to achieve the required temperature, the equipment for normal open stopped more than 24 hours, after equipment performance is normal, can put a small amount of items placed in Cabinet. (please store items in batches of no more than 1/3 volume each time. Make sure the equipment is out of service, and have the normal opening and stopping for more than 12 hours before putting into the other no more than 1/3 of the cabinet volume items.
3. Do not open the door during the cooling process, will cause the temperature rise.
4. There must be an authorized person responsible for the freezer in customer's office, to check the operation status and make daily record. The inside temperature of cabinet will rise up during the failure problem, if it is not available to be repaired in a short time, take out the stored items and transfer to other safe locations.
5. Prior to put the articles inside the freezer, should check if the temperature set range of this device is matching the requirement of the articles.
6. Due to the inertia of refrigeration, there is a little difference between the actual temperature displayed on the controller and the set temperature. This is a normal phenomenon.
7. The equipment is storage device, do not put excess "hot" samples into the cabinet at one time, or will cause compressor damage after long time working without stop. Attention to put in samples and set temperatures in batches.
8. Do not put electric devices in the cabinet without permission.
9. Do not change the setting temperature frequently within a short time, or the current temperature may not reach the setting temperature as the inertance; Do not cover sensors in the freezer when you put in samples and keep some distances between the samples and the inner side of the freezer to make sure the cold air will circulate successfully in the freezer, or will cause the in stability of the inner temperature and in accuracy of the display temperature.

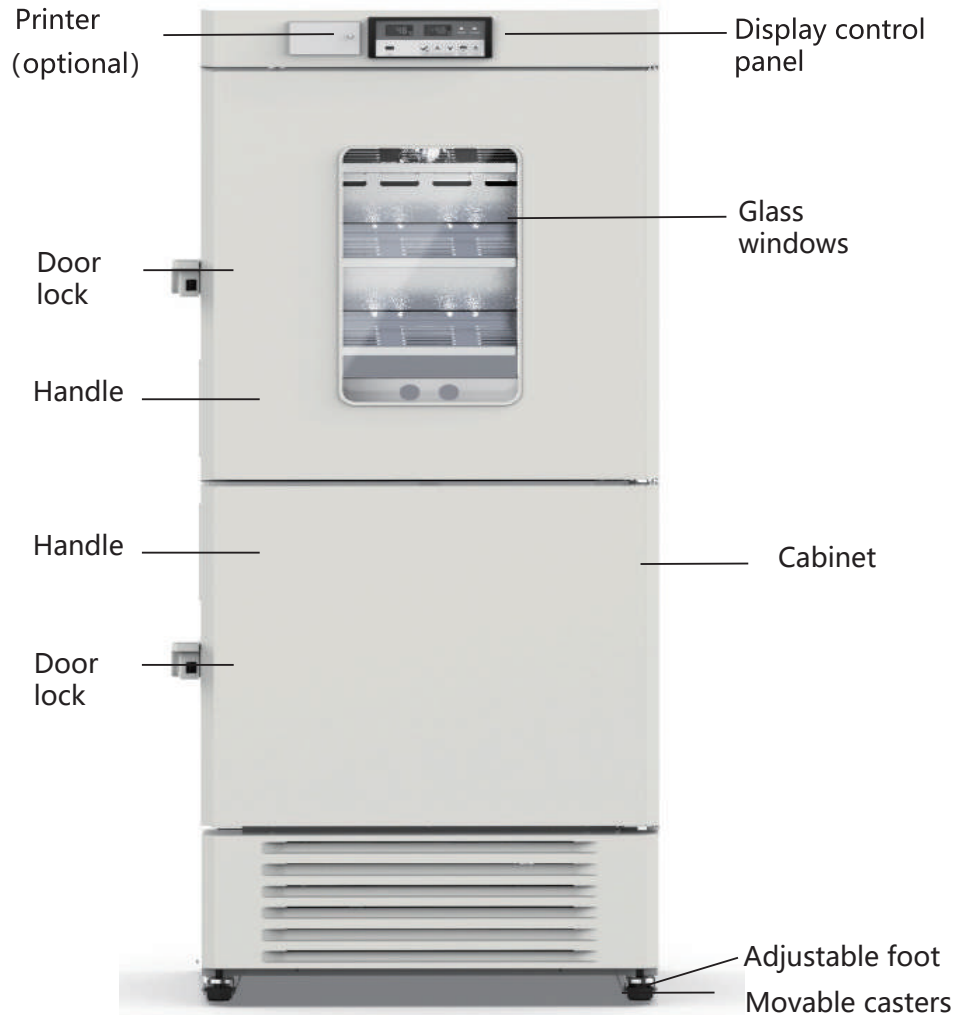
4.6 Operation after power failure.

The freezer controller has a memory function for the set value. When the machine is powered off and powered again, the freezer will continue to operate before the power is turned off.

Once the equipment is interrupted during use, it will take 5 minutes before it can be turned back on to avoid damage to the compressor.

※ Our company guarantees this equipment under certain conditions, and our company is not responsible for any loss or damage of the stored items.

5. Components and Overview



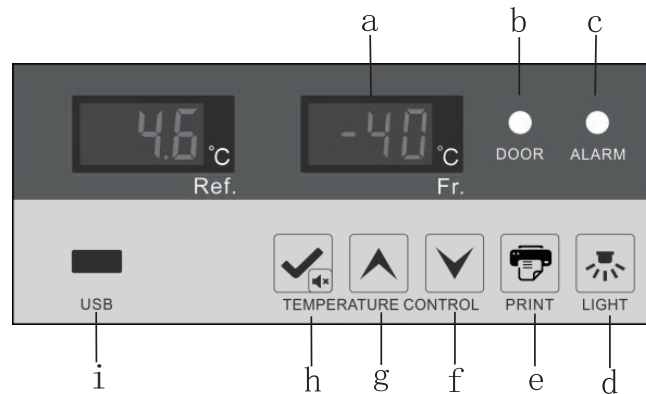
STFC-288/288A

1. Due to the improvement of the product and the different models, the actual product may be different from the diagram. The above figure is only an example of the identification function.

2. Structure and composition: Cabinet, door body, refrigeration system, control system and accessories. Combined refrigerators and freezers are suitable for hospitals, epidemic prevention stations, blood banks, research institutes, universities, genetic engineering, companies, etc.

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

6. Display panel function description



1. Introduction of the display panel


a. 4.6 and -40 are windows to display temperature. In normal operating, the average temperature of the refrigerator compartment and the freezer compartment on the cabinet are displayed in °C (-10 to -25 °C in the MRF-288/450); In set state, it displays different prompt characters (see below for details);


b. Door opening indicator: When the refrigerator compartment door is open, the indicator light is on. When it is more than 1 minute, the door open alarm indicator lights up and the buzzer sounds an alarm, the window indicating "door" .


c. Fault indicator: When the product is running normally, the indicator light is off; when abnormal operation is running, the indicator light is on.

d. "LIGHT" : After the unit is powered on, the light in the chamber is off by default. Press this button to adjust the light on and off. When the light is off, the light can be turned on when the door is opened, and the light is turned off when the door is closed. When the light is on, the light does not change when the door is opened or closed. This unit has two functions: automatic lighting and manual lighting. Under automatic lighting, the light is on immediately when the door is opened and the light is off after a delay of 5 seconds when the door is closed. The user can also manually turn on the light by press the light button, and the light is always on without being controlled by the switching door (the indicator above the button is turned on). Only when the button is pressed again to turn off the manual lighting and the automatic lighting is turned on, the light can enter the automatic lighting state (the indicator above the button is turned off).

e. "PRINT" : The system can keep 7 days of data for printing, press the print button to print the temperature within the set time period.

f. : 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 button to quickly decrease the parameter.


g. : In the parameter setting mode, increase the parameter value. For example, when setting the set temperature, increase the set temperature value. When setting the parameter value, press and hold the up key to increase the parameter quickly. Under normal use, press and hold the button for 3 seconds to import the data of the U disk for 12 months.

h. : is the setting/mute button; when there is no alarm and the button is not unlocked, press it to display the ambient temperature for 5 seconds and then return to the normal display; In the unlocked state, press it for more than 3 seconds to enter the user menu.

I. 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 of the current month and the previous month will be generated in the U disk. After data transmission, the buzzer will chirp once and display "End".




 Note: when the data is small, 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).



(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: In the normal running state, press the key  and  for 3 seconds at the same time, the digital tube will display the parameter code "0000", and input the password "0005" (enter the user menu password, enter "0099" to restore the key lock password to the default "0005"), Unlock at this time. Press the key  for 3 seconds after unlocking, the digital tube displays the parameter code "PS1" and enters the setting adjustment.


1. Use the up or down key to scroll through the parameters. The display order is b1-b2-Set1-H01-L01-Set2-H02-L02-n-y-r-S-F-Pt-tH1-P1-PS1.

2. Press  or  to increase or decrease the value

3. Press the  to temporarily store the modified value of the lock and return to the display parameter.

4. If you need to modify other parameters, repeat steps 1-3.

5. Press the  for more than 3 seconds to store the modified parameter and return to the display parameter category.

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

D. Parameter display

Serial number	menu	Parameter range	Suggest setting values	Remarks
1	b1	--	1.0	Hardware version
2	b2	--	1.0	Software version
3	Set1	0~10	4.0	Refrigerator temperature setting
4	H01	0.0 ~ 10.0	5.0	High temperature alarm set value set+H; H=0 when the alarm is cancelled. When the temperature is too high, the high temperature alarm display H01
5	L01	0.0 ~ 10.0	5.0	Low temperature alarm set value set-L; L=0 when the alarm is cancelled, when the temperature is too low, the low temperature alarm display L01
6	Set 2	288/450:-10~-26 288A/450A -10~-40	-20 -40	Freezer temperature setting
7	H02	0.0 ~ 10.0	5.0	High temperature alarm set value set+H; H=0 when the alarm is cancelled. When the temperature is too high, the high temperature alarm display H02
8	L02	0.0 ~ 10.0	5.0	Low temperature alarm set value set-L; L=0 when the alarm is cancelled, when the temperature is too low, the low temperature alarm display L02
9	Pt	0 ~ 240 min	20	Print interval
10	tH1	20.0 ~ 50.0°C	40.0	Upper limit of ring temperature alarm
11	P1	1. Automatic heating mode 1 2. Automatic heating mode 2 3. Automatic heating mode 3 4. Always open 5. Always off	1 (set to 4 when the door has condensation)	Mode 1: The door is opened and closed once, the machine is heated once for 5min (the time can be set). If the door is opened and closed again during the heating period, the heating time is refreshed again. Mode 2: When the compressor is running, the heater is turned on; when the compressor is stopped, the heater is turned off after one minute. Mode 3: When the humidity in the cabinet is greater than 80%, the heater is turned on; when the humidity in the cabinet is less than 60%, the heater is turned off. Mode 4: The heater is always on. Mode 5: The heater is always off.
12	PS1	0000 ~ 9999	0005	User menu password settings

Printer Settings:

(1) Automatic printing: When the printing interval Pt is not 0, the printer will print the current data every Pt minute.

Note: when the print interval Pt is less than the record interval SCy, print according to the record interval;The remaining print intervals are printed at integer multiples of the record interval SCy, i.e., the print interval Pt shall set the integer multiples of the bit record interval.

(2) Manual printing: keys unlocked state and normal working voltage, digital tube display "P01", press the print key press to raise or lower key adjustment "P00 ~ P07", press the set/mute reuse key or the print button, cancel the manual printer print (P00) or print the current push days (1 ~ 7) recorded data, print data with automatic printing intervals.

(3) Alarm code display

Alarm code	Error description
H01	Refrigerator high temperature alarm
L01	Refrigerator low temperature alarm
H02	Freezer high temperature alarm
L02	Freezer low temperature alarm
H03	High ambient temperature alarm
H04	Refrigerator condenser High temperature alarm
H05	Freezer condenser High temperature alarm
door	Door open alarm
Pf	Power failure alarm
bL	Low battery alarm
ER	Chart recorder not connected
LoF	Chart recorder not started
EE	Communication fault

➤ Just to switch on the power supply for Combined refrigerator and freezer do not immediately add items, make empty operation after a period of time (about 24 hours), then refrigerated goods into cabinet

➤ To add items, if the item is too much water or excessive drying will influence the change of the humidity, the best goods sealed; the same Combined refrigerator and freezer working environment humidity size will also affect the change of the humidity of the door and the door body ,especially too much not close well.

➤ For each store items can not exceed 1/3 cabinet capacity, achieve the actual temperature and normal operation after 24 hours, then add another 1/3 volume storage capacity.

➤ To add items please do not block the outlet and inlet.

The goods can not be placed directly on the bottom of the Combined refrigerator and freezer should be placed on the bottom shelf, otherwise the effect of Combined refrigerator and freezer cooling effect.

➤ The cooling process as far as possible not to open the door, otherwise it will cause temperature rise.

➤ Due refrigeration inertia, the product reaches a set value when stopping the display temperature and the set temperature may have a certain difference, this is the normal phenomenon.



Note: children are not allowed to play games in a combined refrigerator and freezer

7. Defrost • Unused • Maintenance



Caution

- For personal safety, please cut the power supply before any maintenance!
- Don't inhale medications or aerosols around the device while maintaining a Combined refrigerator and freezer, or it will endanger your health.

7.1 Defrost

After the product has been working for a period of time, its internal surface will be frosted, which will affect the cooling effect and increase the power consumption. It is recommended that defrosting should be performed when the frost layer is too thick.

- Cut off the power, open the door, and transfer the items to a cool place.
- Use a defrost scoop to gently remove the surface area cream (Also allow the temperature inside the tank to naturally rise, melt the frost)
- In order to speed up the defrosting process, flat bottom containers with less than 50°C hot water can be placed in a combined refrigerator and freezer
- Then use a dry cloth to wipe off any remaining ice water. Return items to the combined refrigerator and freezer.
- Power on, power on cooling.



Warning: Do not use sharp metal appliances during defrosting to avoid damage to the Combined refrigerator and freezer

7.2 Unused and Maintenance

If the product needs to be stopped for a long time, the power should be cut off, cleaned according to following methods, and sealed after opening and drying.

Before using it again, apply a dry cloth to dry the water around the door.

Do not place heavy objects on the top of the combined refrigerator and freezer to avoid deformation of the equipment.

At regular intervals, the equipment are cleaned and maintained once. (For safety reasons, the power plug must be unplugged before scrubbing.)

Wipe the inner and outer surfaces of the equipment with a soft, damp cloth.

When the dirt is serious, wipe it with a neutral detergent for washing utensils, then wipe the water with a soft cloth.

Once this product is activated, it is best to use it continuously.



Note: Do not spray water directly on the cabinet, so as to avoid degradation of electrical components and metal parts rust. Do not use hot water and corrosive cleaners or organic solvents to clean the cabinet.

7.3 Disposal



WARNING: If the equipment is left unused in an unsupervised area for extended periods of time, make sure that the child does not get close to the cabinet and that the door cannot be completely closed. Disposal of cabinets should be performed by appropriate personnel to prevent accidents such as asphyxiation.

8. After-sale Service

Any product has the possibility of failure. Please observe the operation of the Combined refrigerator and freezer in the process of use. If there is any abnormality, please check and compare the errors with the following table. If you can't fix the issue, Please inform our service center in time. We will serve you wholeheartedly to avoid any losses.

Term of use: 10 years

Troubles	Reason and solutions
The unit doesn't work	<ul style="list-style-type: none"> ➤ Does the power plug have electricity ➤ The power plug is inserted or loose. ➤ Is the power fuse disconnected? ➤ Is the power supply voltage too low or too high
Compressor doesn't work	<ul style="list-style-type: none"> ➤ Temperature setting is correct or not ? ➤ Is the temperature inside the chamber too low?
Temperature does not reach the set value	<ul style="list-style-type: none"> ➤ Whether the door is closed or the door is open too often? ➤ Do you have too many items at one time? ➤ Is the ambient temperature too high?
Big noise	<ul style="list-style-type: none"> ➤ Is the equipment placed on a flat floor? ➤ Does the cabinet hit the wall?
Glass window surface condensation	<ul style="list-style-type: none"> ➤ During the rainy and humid season, the window may condense, which is normal. Wipe it off with a dry cloth.

● Below are normal operations:

① There are some light clashes when the compressor starts up and stops.

② After opening the door and put in the hot subjects, the controlling system appears high temperature and high humidity alarm. solution: The hot subjects should be cooled by natural cooling and then put into the cooler. Do not put too many subjects at one time. After the system is stable, the high temperature and high humidity alarm will be relieved.

③ The slight flowing noise of running water in the refrigerant pipe.

④ Before call the service engineer, Please clean and disinfect the freezer.

Condition: Cannot shake heavily, strike, prevent to drenching.

The temperature of Storing machine: -40°C ~ +55°C, Relative humidity: 10% ~ 90%.

9. Specifications

Name	Combined refrigerator and freezer
Model	STFC-288 / STFC-288A / STFC-519 / STFC-519A
Outside cabinet	Epoxy polyester powder spray coated steel plate
Outside door	Epoxy polyester powder spray coated steel plate
Condenser	Wire tube condenser
Evaporator	refrigerator: Plate and tube evaporator/freezer: Wire tube evaporator
Insulation	Rigid polyurethane foam filling
Compressor	Fully enclosed
Thermostat	Microprocessor
Temperature sensor	NTC
Alarm system	High low temperature alarm, door ajar alarm, power failure alarm, low battery alarm, sensor error alarm.

Annex1: Rechargeable Battery Maintenance, Installation, Replacement and Disposal

Long term power failure or in the process of transportation, the main power switch must be turned off. Otherwise, long time discharge will cause battery loss or permanent damage, and it will be abnormal after re-energized.

Maintenance of rechargeable batteries: In order to prolong the battery life, please avoid product. It is better to run the product more than 24 hours monthly to recharge.

Battery Maintenance

A. If the freezer does not run in a long time, it should be connected to the power on a regular basis (monthly), turn on the power switch to charge the freezer for a period of time, and the charging time is not less than 24 hours.

B. When the power supply is interrupted, the power lock switch should be turned off in time, otherwise the battery will lose power, which may cause permanent damage to the battery.

C. The battery is expendable and the battery life is about 2 to 3 years. If the battery is not properly used, such as the loss of electricity or reach the battery life, it will lead to low battery alarm. (It does not affect the usage of the refrigerator but there is alarm failure and influence on printing function. It is suggested that users should contact company after-sales service staff to replace.

1. Battery Installation Position: Top inside of electrical box
2. Battery replacement

a. Turn off the power switch and pull the plug from the socket (Pay attention to the electrical components in the electrical cabinet. Power supply must be turned off and also unplug the power cord and turn off the power switch of the freezer before opening. The electrical cabinet must be opened by qualified engineer or maintenance personnel).

b. Remove the battery connection plug.(Before unplugging the cord, pay attention to the sequence of the battery's positive and negative levels and the connecting line, does not upside down the positive and negative levels to prevent the control system damage from the installation of new batteries.The red line is usually connected to the positive pole, and the black line is connected to the negative pole)

c. Remove two fixed screws from the battery plate with a screwdriver and remove the battery.

d. New replaced battery model: BT-12M4.0AC(12V4.0AH);

e. The replacement battery is recyclable, please contact the local battery recycling agency for processing.

Note: In order to effectively ensure that the replacement tank battery meets therequirements of the control system and to avoid the impact of improperoperation on the system during the replacement, it is recommended to contact the Antech after-sale service staff to replace or guide.

Anex2: About installation of printer paper for optional part printer.

The printing paper has been installed in the factory. When the paper is used out for a long time,you can buy and replace it with the same roll paper .

The installation steps are as follows:

1. Press the cylinder button on the printer and open the cover of the printer.
2. put print paper into the printer box and pull the paper roll end of the printer cover after the note slightly exposed on the box cover port;

Anex3: About the installation of optional printer paper for chart recorder.

The steps to replace the printing paper are as follows:

- 1.Please open the temperature chart recorder with the key (in the attached bag), as shown in figure 3 and figure 4;
- 2.Move the record holder to the vertical position, loosen the bolt in the middle and remove the old printing paper. Replace with new printing paper.
- 3.Reset the recording pen holder and bolts and lock the recorder door.

Note: do not damage the tip of the record holder. It has been calibrated before leaving the factory. Please do not adjust it without special circumstances.



figure 3



figure 4



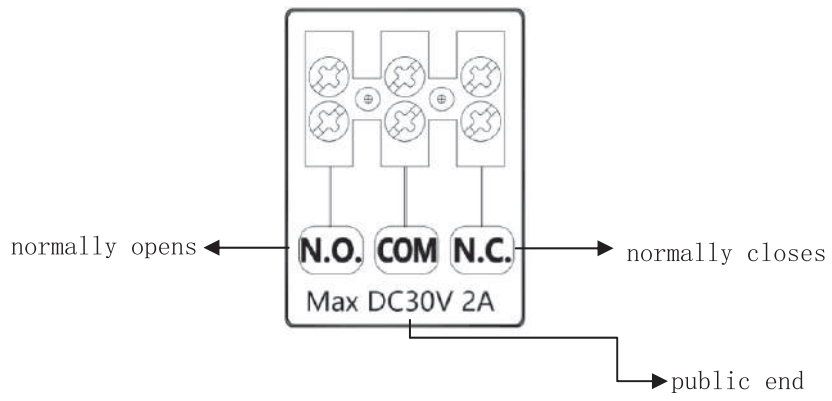
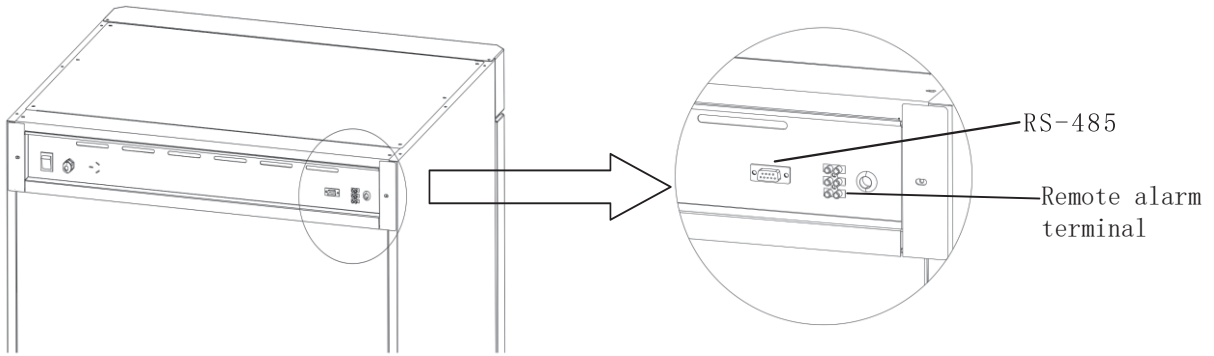
figure 5



figure 6

Anex4: Remote alarm terminal and RS485 interface

The remote alarm terminal is installed in the back of equipment and the alarm signal is output by the terminal. The terminal bearing capacity is DC 30V, 2A.



10. Performance

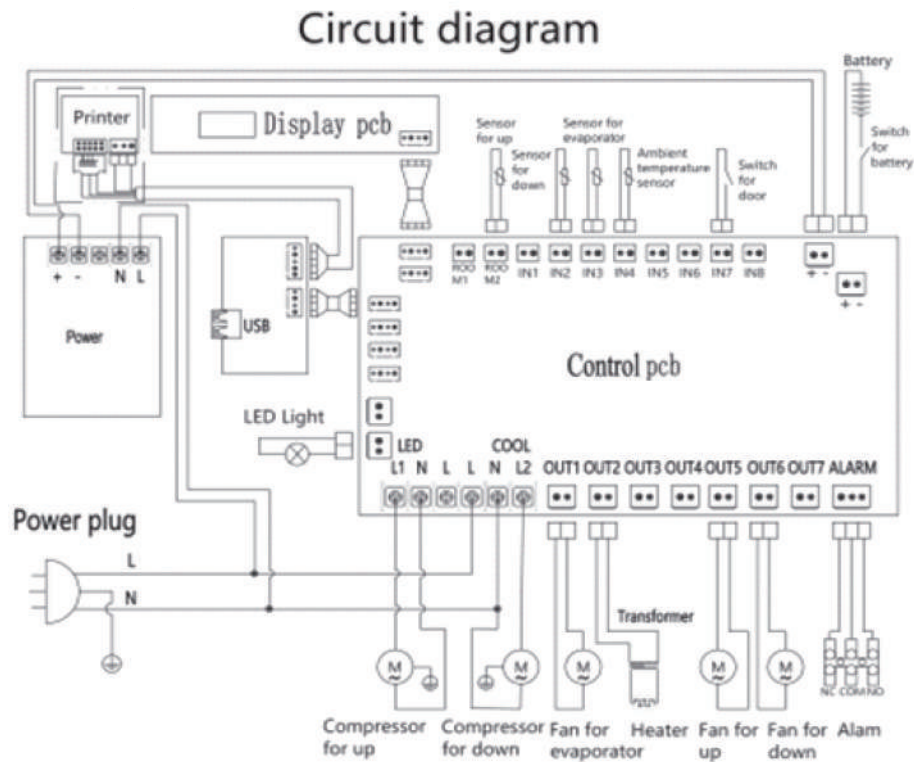
10.1 Main Technical Parameter

Model	Ambient temperature	Climate type	Rated voltage (V~)	Rated frequency (Hz)	Storage temperature (°C)	Net capacity (L)
STFC-288	16 ~ 32°C	N	220	50/60	2 ~ 8°C/ -10 ~ -26°C	289
STFC-288A	16 ~ 32°C	N	220	50/60	2 ~ 8°C/ -10 ~ -40°C	289
STFC-519	16 ~ 32°C	N	220	50/60	2 ~ 8°C/ -10 ~ -26°C	519
STFC-519A	16 ~ 32°C	N	220	50/60	2 ~ 8°C/ -10 ~ -40°C	519

10.2 Packing List

Name	Operation manual	Defrost shovel
Number	1	1

10.3 Electrical Diagram



If the product is improved, the technical data and circuit diagram shall be subject to the final product nameplate and cabinet circuit label.