Simplewell昇微

Temperature humidity test chamber

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01

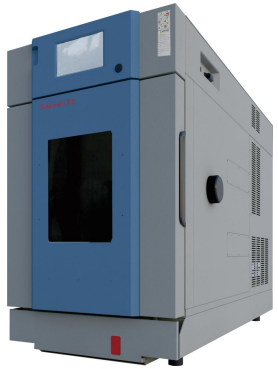
Part

Production description

1.1 Production description

Energy-saving temperature humidity test chamber

Temperature humidity test chamber



Bench-top temperauter humidity test chamber

Battery temperature humidity test chamber

1.1 Production description

一、ESTH/ENTH/LSTH/LNTH introduction

Energy-saving temperature humidity test chamebr

1.Self-developed controller
2.Electronic expansion valve, energy saving and environmental protection
3.Small humidification water consumption

ESTH series

ENTH series

Temperature humidity test chamber

1.Self-developed controller
2.Good temperauter uniformity
3.Small humidification water consumption

LSTH series

LNTH series

1.1 Production description

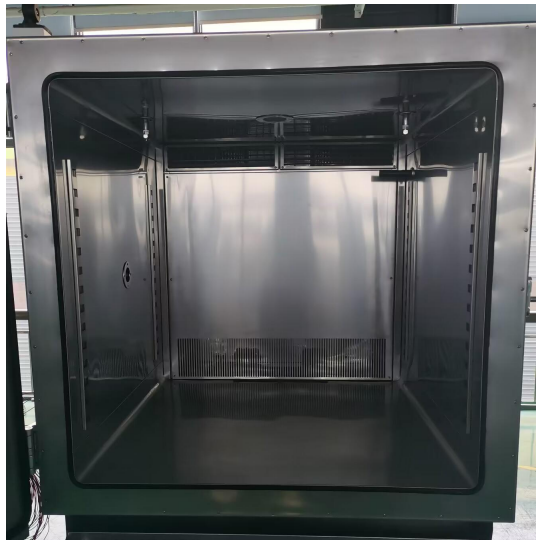
Content

1.Inner cabin and electric box structure
2.Electronic control system
3.Display module
4.Door handle
5.External parts
6.Inner cabin parts
7.Water tank
8.Water system
9.Electronic components
10.Refrigeration components
11.Optional components

1.1 Production description

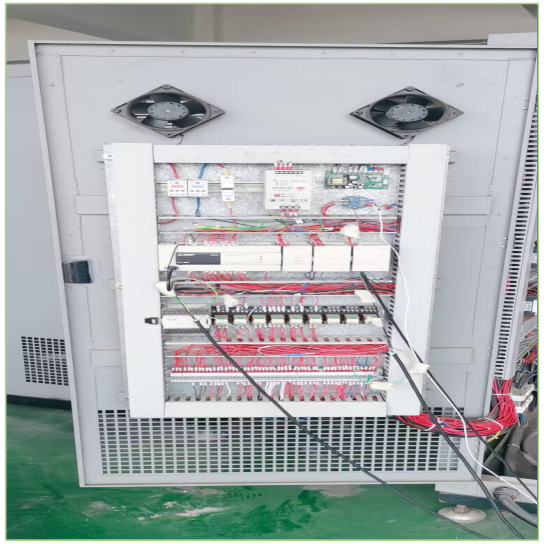
1. Inner cabin and electric box structure

ESTH/ENTH series inner cabin



LSTH/LNTH series inner cabin

ESTH/LSTH series electric box

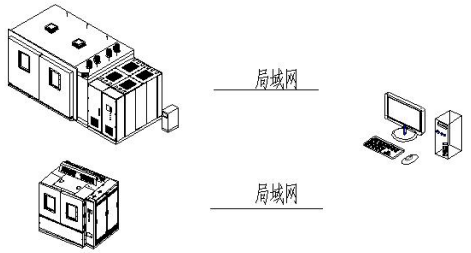


ENTH/LNTH series electric box

1.1 Production description

2. Electronic control system

1.Control: Adopt Japanese Mitsubishi new generation high-performance FX3U series PLC, 7.0 inches 600×480 dot matrix TFT color LCD display, Chinese/English menu, touch-type man-machine dialogue.The control unit adopts Japanese Mitsubishi PLC module to enter each system control, the control temperature is accurate and the equipment runs stably.



2、Connect to PC (optional): Through the centralized monitoring software, the test data can be recorded and automatically displayed as a curve in the PC, which can be printed directly, and the recording time is unlimited.File size depends on hard drive capacity. The PC can also be used as an operation terminal to realize remote monitoring.

1.1 Production description

Control box and panel: The electric box is sprayed with electrolytic board, the color is standard color, and the panel is equipped with touch-type man-machine dialogue interface, emergency stop switch, power indicator, USB, data exchange interface, over-temperature protector etc

3.Display module

Display

Cermate Taiwan

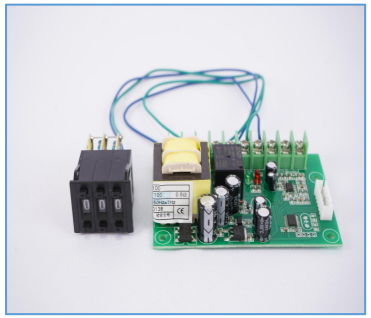
Benlee China

Emergency stop swith

Power Indicator

Benlee China

Yatai Shanghai

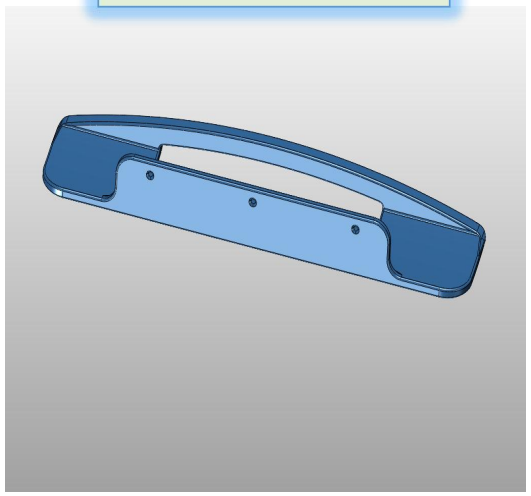


Over-temperature protector

1.1 Production description

4. Door handle

Applicable series-ESTH



Customized handle

Features: light material, good hand feeling, temperature and humidity resistance

Applicable series-ENTH/LNTH/BAT-NT

Squeeze handle

Features: The lever principle makes the opening and closing of the door easier, stainless steel material, good corrosion resistance

1.1 Production description

5. External parts

Window glass

Built-in heating wire, temperature and humidity resistance

Three-color light

Onnled brand indicator light, the angle can be adjusted freely

Motor

Drive the wind wheel to rotate, high temperature and low humidity resistance

Swivel casters

Good load bearing, with brake

Leveling feet

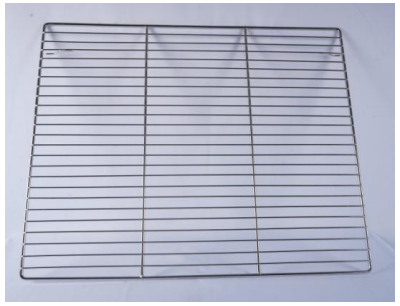
Good load bearing,adjustable height

Door hinge

The position can be adjusted, and the fixed angle can be limited

1.1 Production description

6. Inner cabin parts

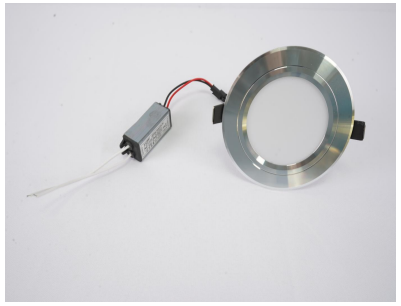


Sample holder

Lightweight structure, good load-bearing performance

Water tray

One-piece stamping, good sealing performance



Lamp

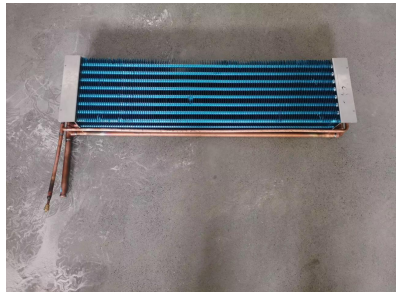
Wide range of light, temperature and humidity resistance

Humidifier

Seamless titanium tube, good humidification effect

Cooling tube

Conveying coolant



Evaporator

Increase the return pipe to save energy

Heating pipe

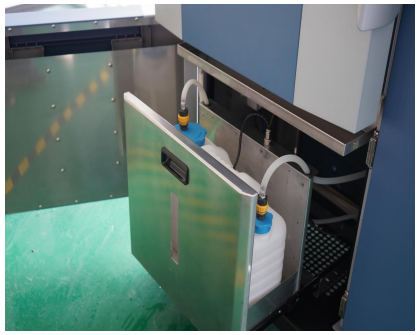
321 seamless stainless steel pipe

Multi-wing wind wheel

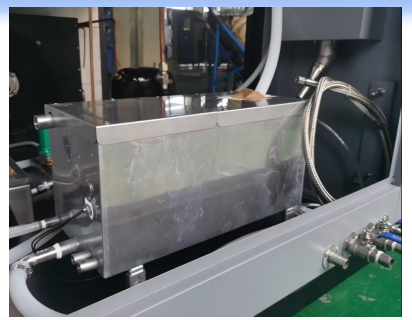
Galvanized material, strong wind, low noise

1.1 Production description

7. Water tank



ESTH/ENTH series water tank



LSTH/LNTH series water tank

1.1 Production description

8. Water system

Gauze humidity sensor (ESTH/ENTH) (custom made)

Plastic Humidity Sensor (LSTH/LNTH)

Ball guide rail (ESTH/ENTH) (Cobbe China)

Water inlet (LSTH/LNTH)

Supply pump

Waste water filter

Hydration water box

Automatic refill cup

Waterway solenoid valve

1.1 Production description

9.Electronic components

Flame retardant wire

Overload protector (Schneider)

Temperature sensor (Switzerland/Finland)

Solid State Relay (Carlo gavazzi)

Contactor (Schneider)

No fuse switch (Schneider)

Gas switch

PLC controller (Mitsubishi)

1.1 Production description

10.Refrigeration components

1“Tecumseh/Bitzer、Bock”Full/semi-hermetic low-noise piston compressor with reliable and stable performance

4. store refrigerant and reduce condenser load

Liquid storage tank

3.Customized comdensor with Mar fan

5、Danfoss solenoid valve/thermostatic expansion valve is adopted to effectively prevent the migration of refrigerant in the refrigeration system during shutdown

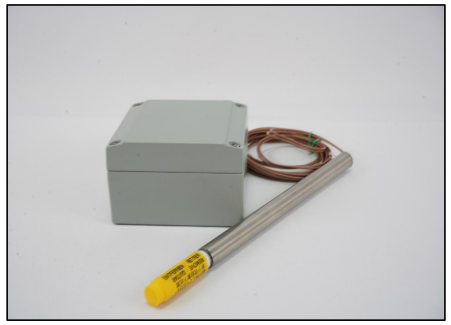
2、Emerson's high-efficiency oil separator is used to separate the lubricating oil in the high-pressure steam discharged from the refrigeration compressor to ensure the safe and efficient operation of the refrigeration system.

6、Hexnovo brand

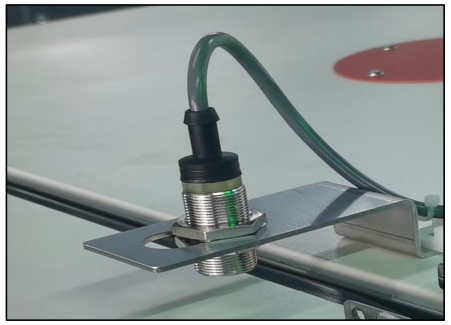
Plate heat exchanger

1.1 Production description

11.Optional components



Electronic Humidity Sensor



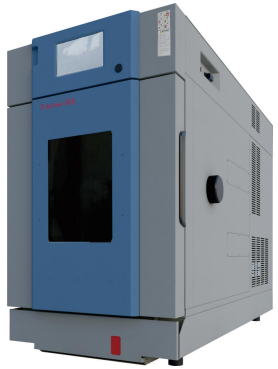
Door sensory switch

Pure water machine
(automatic replenishment)

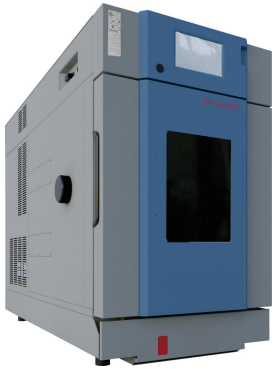
Air source dryer
(low humidity)

1.1 Production description

二、Bench-top temperature humidity test chamber



1.Self-developed controller
2.Good temperature uniformity
3.Fast heating and cooling
4.Stable control, strong anti-interference performance
5.Humidification water storage tank adopts 3D printing, personalized design, beautiful, easy to add water
6.Small humidification water consumption



1.1 Production description

Content

1.Chamber structure
2.Electronic control system
3.Display module
4.Door handle
5.External parts
6.Inner cabin parts
7.Water tank
8.Water system
9.Electronic components
10.Refrigeration components

1.1 Production description

1.Chamber structure

Inner cabin

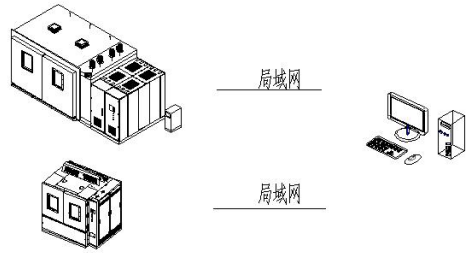
Refrigeration unit

Electric box

1.1 Production description

2. Electronic control system

1.Control: Adopt Japanese Mitsubishi new generation high-performance FX3U series PLC, 7.0 inches 600×480 dot matrix TFT color LCD display, Chinese/English menu, touch-type man-machine dialogue.The control unit adopts Japanese Mitsubishi PLC module to enter each system control, the control temperature is accurate and the equipment runs stably.



2、Connect to PC (optional): Through the centralized monitoring software, the test data can be recorded and automatically displayed as a curve in the PC, which can be printed directly, and the recording time is unlimited.File size depends on hard drive capacity. The PC can also be used as an operation terminal to realize remote monitoring.

1.1 Production description

Control box and panel: The electric box is sprayed with electrolytic board, the color is standard color, and the panel is equipped with touch-type man-machine dialogue interface, emergency stop switch, power indicator, USB, data exchange interface, over-temperature protector etc

3.Display module

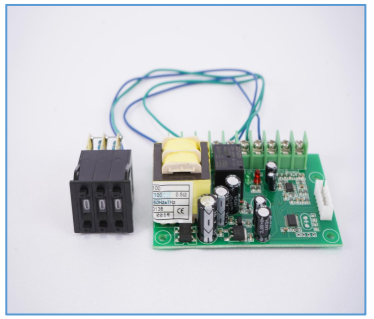
Cermate Taiwan

Display

Emergency stop swith

Serial interface

Yatai Shanghai

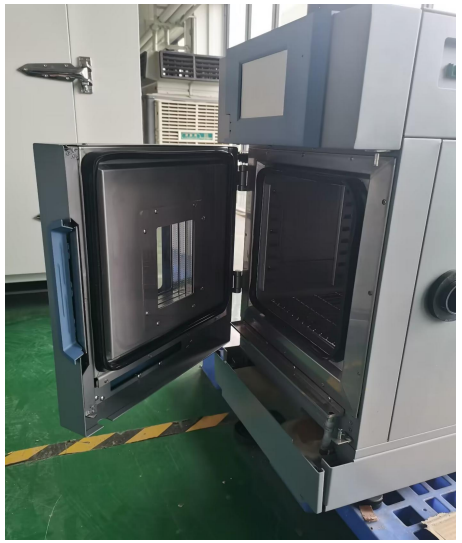


Over-temperature protector

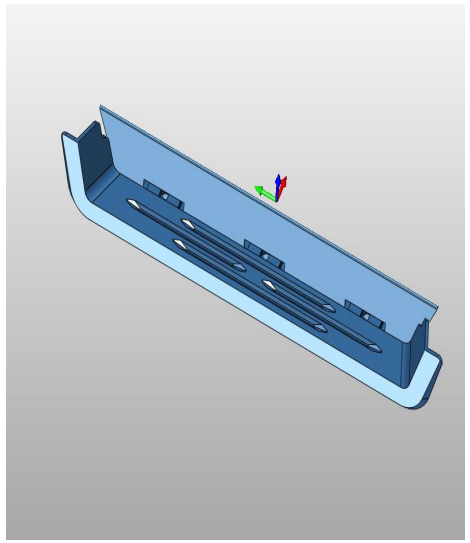
1.1 Production description

4. Door handle

Renderings



Renderings



Customized handle

Aluminum-magnesium alloy, hard texture, good hand feeling, friction resistance, high temperature resistance, low humidity resistance

1.1 Production description

6. Inner cabin parts

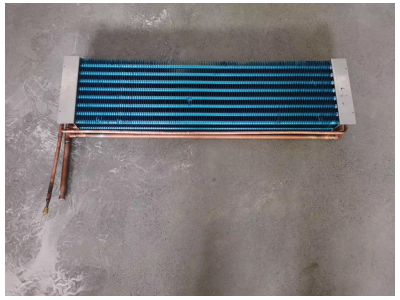
Sample holder

Lightweight structure, good load-bearing performance

Water tray

Humidifier

Seamless titanium tube, good humidification effect



Evaporator

Increase the return pipe to save energy

Heating pipe

321 seamless stainless steel pipe

Multi-wing wind wheel

Galvanized material, strong wind, low noise

1.1 Production description

5. External parts

Window glass

Hollow glass, built-in defrosting heating wire, high temperature resistance, low humidity resistance. During the test, no fog or condensation can be achieved

Fengyu hardware brand, high horsepower, hard material, suitable for working in high temperature and low humidity environment

Motor

Leveling feet

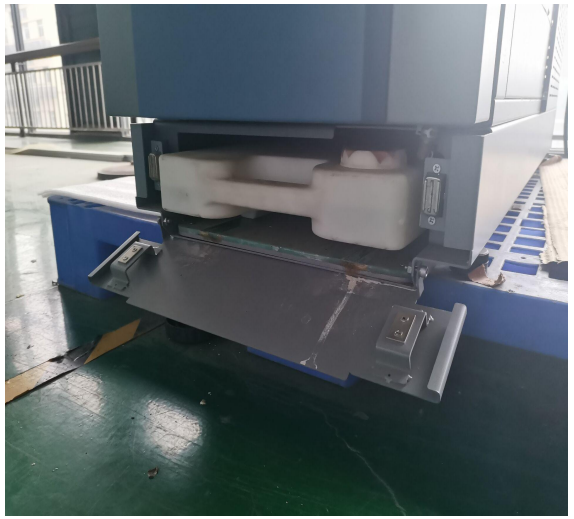
LAMP brand. Nylon base, high anti-skid resistance, stable use, wear-resistant.

Takigen brand.Alloy material, anti-oxidation and corrosion resistance, high hardness, strong bearing capacity.

Door hinge

1.1 Production description

7. Water tank



Water tank

Simplewell Customized water tanks - good looking, durable and resistant to wear and tear

1.1 Production description

8. Water system

Electronic Humidity Sensor (Swizerland / Finland)

Supply pump

Waterway solenoid valve (AiTac brand)

Automatic refill cup (ShangKun brand)

1.1 Production description

9.Electronic components

Flame retardant wire

Overload protector (Schneider)

Temperature sensor (Switzerland/Finland)

Solid State Relay (Carlo gavazzi)

Contactor (Schneider)

No fuse switch (Schneider)

Gas switch

PLC controller (Mitsubishi)

1.1 Production description

10.Refrigeration components

1“Tecumseh/Bitzer、Bock”Full/semi-hermetic low-noise piston compressor with reliable and stable performance

4. store refrigerant and reduce condenser load

Liquid storage tank

3.Customized comdensor with Mar fan

5、Danfoss solenoid valve/thermostatic expansion valve is adopted to effectively prevent the migration of refrigerant in the refrigeration system during shutdown

2、Emerson's high-efficiency oil separator is used to separate the lubricating oil in the high-pressure steam discharged from the refrigeration compressor to ensure the safe and efficient operation of the refrigeration system.

6、Hexnovo brand

Plate heat exchanger

1.1 Production description

三、BAT-NT series test chamber

1.Self-developed controller is perfectly compatible with various charging and discharging systems
2.Linkage control with charging and discharging system and fire protection system
3.Explosion-proof pressure detection and automatic pressure relief
4.Equipped with flammable gas H2/HC detection sensor, the control system displays in real time
5.Electronic expansion valve, automatically balance battery charge and discharge heat

1.1 Production description

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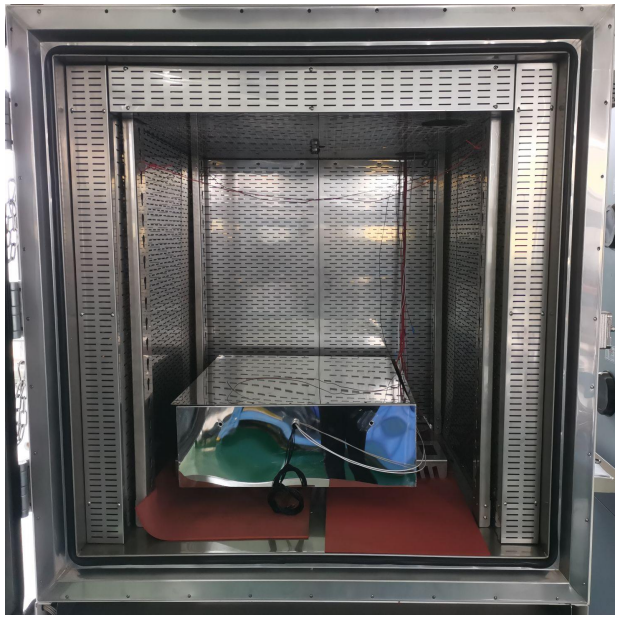
1.Chamber structure
2.Electronic control system
3.Display module
4.External parts
5.Inner cabin parts
6.Principles of fire fighting
7.Fire components
8.Smoke exhaust element
9.Water system
10.Electronic components
11.Refrigeration components

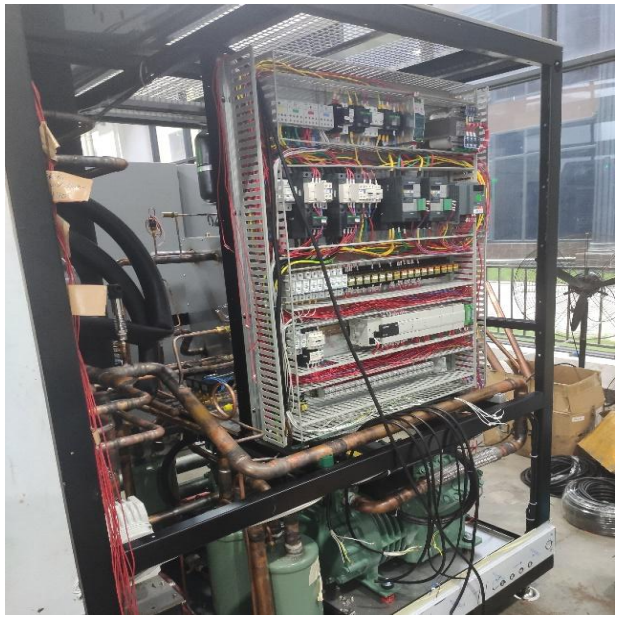
1.1 Production description

1.Chamber structure



Inner cabin

Refrigerated cabinet

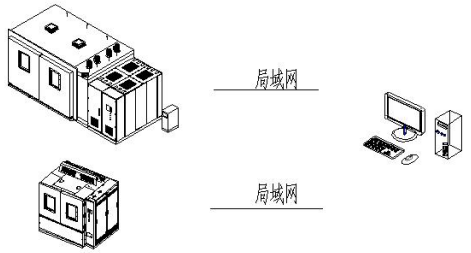


Electric box

1.1 Production description

2. Electronic control system

1.Control: Adopt Japanese Mitsubishi new generation high-performance FX3U series PLC, 7.0 inches 600×480 dot matrix TFT color LCD display, Chinese/English menu, touch-type man-machine dialogue.The control unit adopts Japanese Mitsubishi PLC module to enter each system control, the control temperature is accurate and the equipment runs stably.



2、Connect to PC (optional): Through the centralized monitoring software, the test data can be recorded and automatically displayed as a curve in the PC, which can be printed directly, and the recording time is unlimited.File size depends on hard drive capacity. The PC can also be used as an operation terminal to realize remote monitoring.

1.1 Production description

Control box and panel: The electric box is sprayed with electrolytic board, the color is standard color, and the panel is equipped with touch-type man-machine dialogue interface, emergency stop switch, power indicator, USB, data exchange interface, over-temperature protector etc

3.Display module

Display

Cermate Taiwan

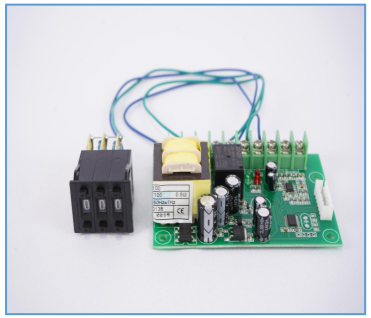
Benlee China

Emergency stop swith

Power Indicator

Benlee China

Yatai Shanghai



Over-temperature protector

1.1 Production description

5. External parts

Window glass

Hollow glass, built-in defrosting heating wire, high temperature resistance, low humidity resistance. During the test, no fog or condensation can be achieved

Fengyu hardware brand, high horsepower, hard material, suitable for working in high temperature and low humidity environment

Motor

Swivel casters

ShangKun brand. Good material, strong load-bearing, with brakes, no noise during activities.

ShangKun brand.Alloy material, anti-oxidation and corrosion resistance, high hardness, strong bearing capacity.

Leveling feet

1.1 Production description

4. External parts

Door handle

The lever principle makes the opening and closing of the door easier, stainless steel material, good corrosion resistance

Door hinge

The position can be adjusted, and the fixed angle can be limited

Three-color light

Onnled brand indicator light, the angle can be adjusted freely

Explosion-proof chain

Hard material, strong load-bearing, explosion-proof and anti-static

Rings nut

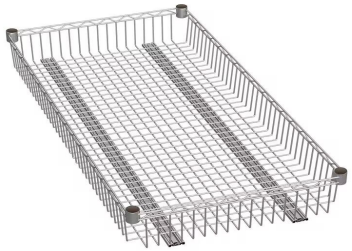
Solid structure, strong and smooth, tightly fixed

Damper controller

Intelligent angle switch, five-speed adjustment

1.1 Production description

5.Inner cabin parts



Sample holder

Lightweight structure, good load-bearing performance

Lamp

Wide range of light, temperature and humidity resistance

Water tray

Evaporator

Increase the return pipe to save energy

Heating pipe

321 seamless stainless steel pipe

Multi-wing wind wheel

Galvanized material, strong wind, low noise

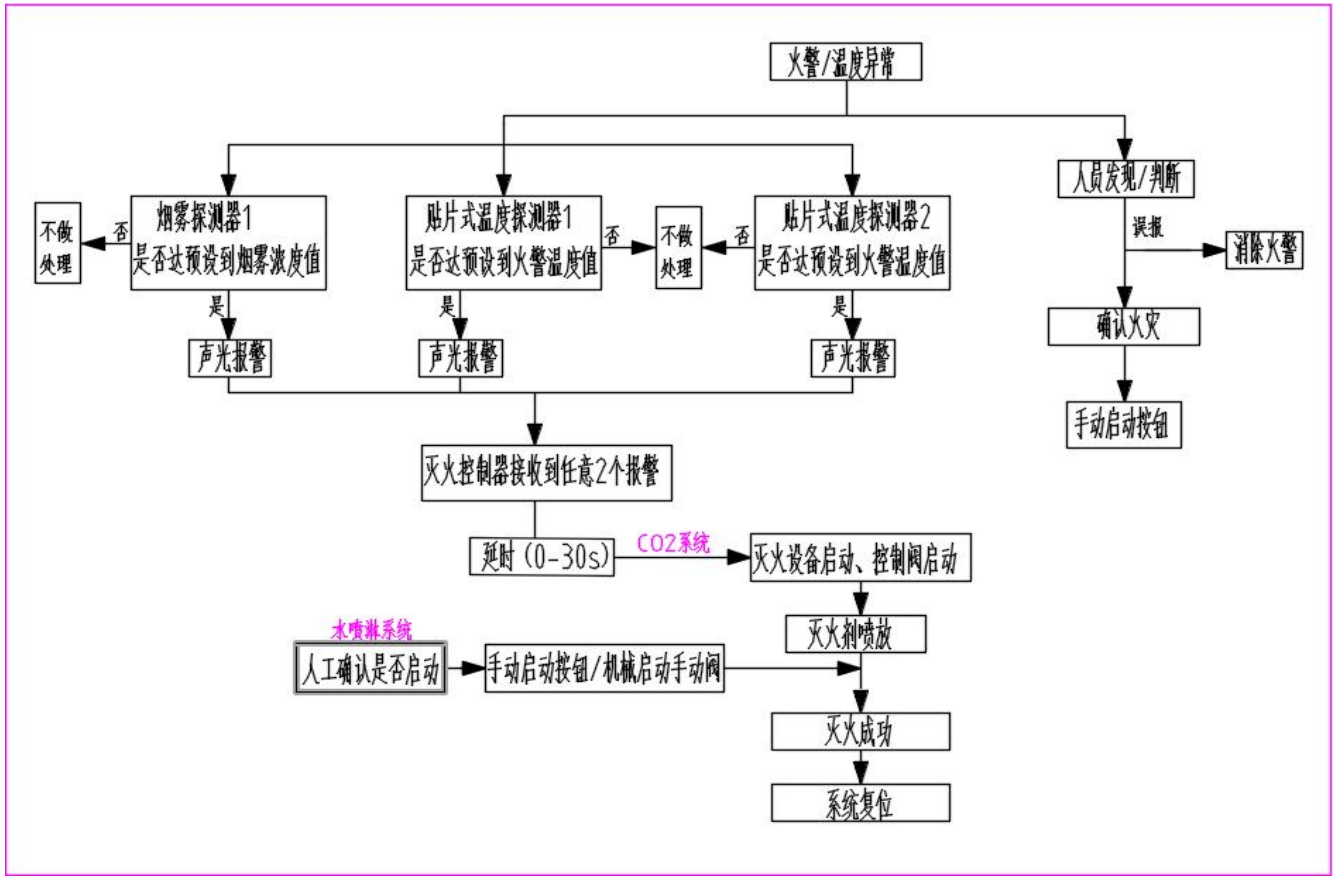
1.1 Production description

5.Inner cabin parts

Battery chamber pressure relief system：
1. When the battery explodes, the pressure in the box increases sharply due to abnormal working conditions, and the pressure relief device is automatically pushed open to relieve the destructive pressure in the box and quickly discharge high-pressure gas;
2. After the pressure is balanced, the pressure relief device automatically returns to its original position, making the cabin airtight；
3. One pressure relief port is located on the top, which is safe and reliable; the picture shows the external view of the pressure relief device, and the top opening is connected to the exhaust gas filtration system

1.1 Production description

6. Principles of fire fighting

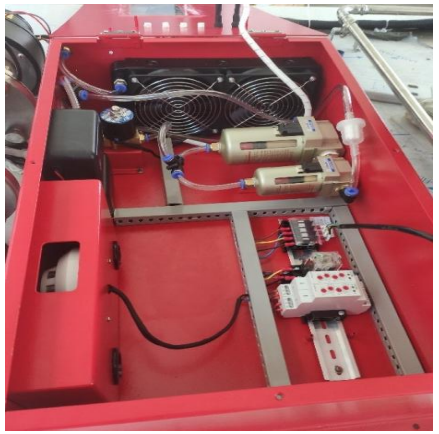


1.The carbon dioxide cooling system adpots a 70L bottle group, and a nozzle is installed in the environmental test chamber. After receiving the start signal, the valve is opened to spray CO2 into the chamber。

2.The water fire extinguishing system consists of manual valves, electric valves, open water nozzles, Y-type filters, pipelines, etc. The water supply of the system needs to be provided by the user. The water fire extinguishing start is manually started. After the CO2 is sprayed, the fire continues to burn and the water fire extinguishing system is manually started. The water fire extinguishing system is stopped manually. Press the stop button and the fire extinguishing system stops spraying water.

1.1 Production description

7.Fire components

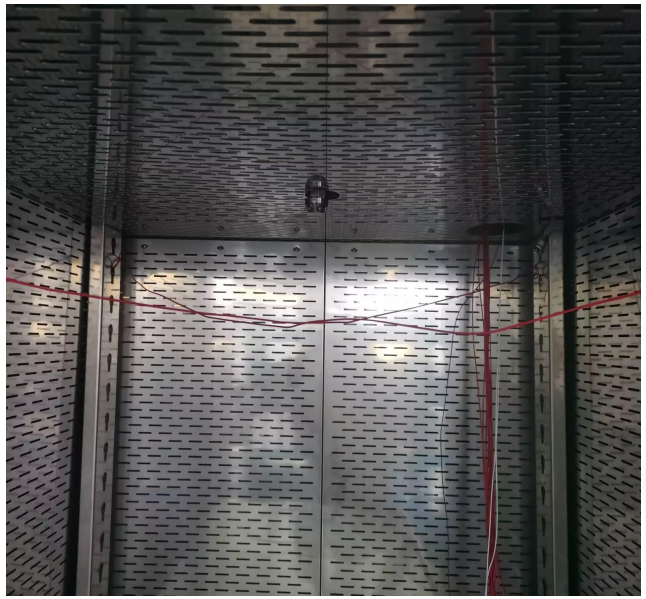



Fire fighting system：

1. Fire extinguishing controller (built-in independent power supply)；
2. Detection system (suction sampling device, smoke detection, patch temperature detector, 8-way temperature controller)
3. Water spray manual ball valve switch, solenoid valve；
4. CO2 extinguisher

1.1 Production description

7.Fire components



Water spray nozzle: The fine water mist nozzle makes the water go through a strong rotating motion in the vortex type, and instantly converts into fine water mist and sprays it to the battery under high pressure. Wide range and low water consumption.

Carbon dioxide trachea joint: When the battery cannot extinguish the fire under water mist, carbon dioxide is introduced at this time, and the carbon dioxide can exclude air and surround the surface of the burning object, reducing the oxygen concentration in the combustible space. suffocate fire

1.1 Production description

7.Fire components

Audible alarm

Y-type filter

SMD temperature sensor

Electric button

Round head valve main unit

1.1 Production description

8.Smoke exhaust element

Blower

Electric valve

Smoke Detector

Exhaust hose

Smoke exhaust system:

1.When the experimental sample spontaneously ignites, a large amount of harmful gas and smoke will be produced. After the smoke detector is detected, the solenoid valve is automatically opened, and the blower is started to extract the smoke and harmful gases from the cabin and discharge them to the waste gas for filtration and purification.

2、After the smoke in the cabin is exhausted, the solenoid valve is automatically closed and the blower is stopped to prevent a large amount of external humid air from entering the test chamber。

3、The smoke exhaust system can be directly controlled by the switch on the control panel, or other equipment can give a control signal to control the opening and closing of the exhaust fan.

1.1 Production description

9.Water system

Water tank
(custom made)

Humidifier

Ball guide rail

Supply pump

Waste water filter

Hydration
water box

Automatic refill cup

Waterway solenoid valve

1.1 Production description

9.Electronic components

Flame retardant wire

Overload protector (Schneider)

Temperature sensor (Switzerland/Finland)

Solid State Relay (Carlo gavazzi)

Contactor (Schneider)

No fuse switch (Schneider)

Gas switch

PLC controller (Mitsubishi)

1.1 Production description

10.Refrigeration components

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4. store refrigerant and reduce condenser load

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3.Customized comdensor with Mar fan

5、Danfoss solenoid valve/thermostatic expansion valve is adopted to effectively prevent the migration of refrigerant in the refrigeration system during shutdown

2、Emerson's high-efficiency oil separator is used to separate the lubricating oil in the high-pressure steam discharged from the refrigeration compressor to ensure the safe and efficient operation of the refrigeration system.

6、Hexnovo brand

Plate heat exchanger

1.2 Product Standard Introduction

一个周期(见图 1)持续 720 min (12 h),由下面的温度 – 空气湿度的曲线构成:

—	60 min, 升温相位,	温度为＋80℃,相对湿度为 80%.
—	240 min, 保持时间	温度为＋80℃,相对湿度为 80%
—	120 min, 降温相位,	在－40℃处, 当达到冻点附近约 30%空气湿度时, 从 T＜0℃起保持空气湿度不变, 即不再调节温度, (由于设备条件的限制, 从 T＜10℃开始, 湿度调节失效是允许的).
—	240 min, 保持时间,	在－40℃左右, 保持空气温度不变, 不调节温度.
—	60 min, 升温相位,	在＋23℃处,约在 T=0℃时, 相对湿度调到 30%.

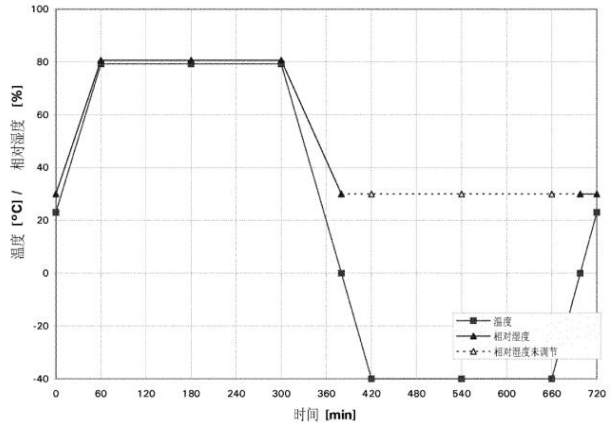


图 1. PV 1200 试验周期

PV1200 standard, at -40℃,the relative humidity is <30%RH,the technical point is that the humidity is not controlled below 0℃,and the relative humidity is maintained at <30%RH

The temperature humidity test chamber for interior parts meets the environmental test requirements for auto parts and materials in mainstream car companies and industry standards as follows (selected):

PV2005、PV1200

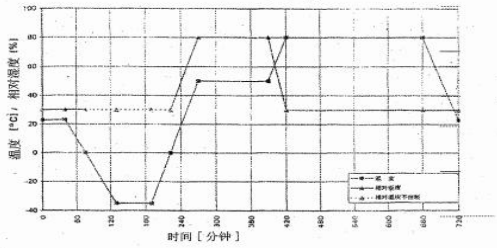
PR303、PR308

1 个循环持续 12 个小时（见过程图 1）包括以下温度和气候条件

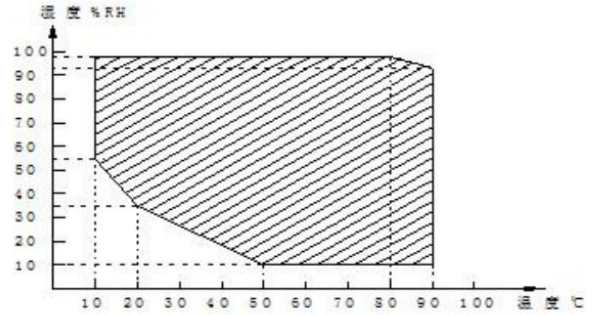
- 40 分钟	保持时间	+23℃，30％相对湿度
- 90 分钟	冷却过程	从 23 到 - 35℃，30％相对湿度
- 60 分钟	保持时间	- 35℃，最大相对湿度 30％
- 80 分钟	加热过程	升温到 + 50℃，80％相对湿度
- 120 分钟	保持时间	+ 50℃，80％相对湿度
- 30 分钟	加热过程	升至 + 80℃，30％相对湿度
- 240 分钟	保持时间	+ 80℃，30％相对湿度
- 60 分钟	冷却过程	至 + 23℃，30％相对湿度

在升温过程 - 升至 + 80℃，30％相对湿度，空气中的实际含水量不得超过 95g/m³进行汽车内饰件试验时，在任何时间都不能出现露水。

PV2005 单个零件



PV2005, at -40℃, the relative humidity is <30%RH, the technical point is that the humidity is not controlled below 0℃, and the relative humidity is maintained at <30%RH, and the temperature rises linearly from -40℃ and control the humidity from 0℃.

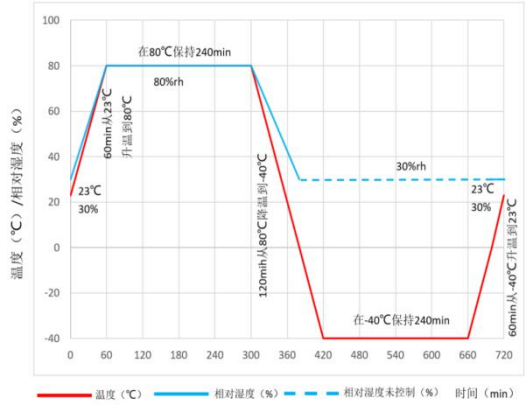


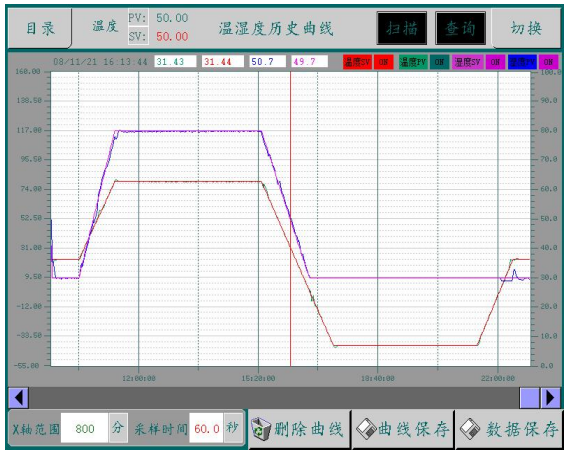
1.2 Product Standard Introduction

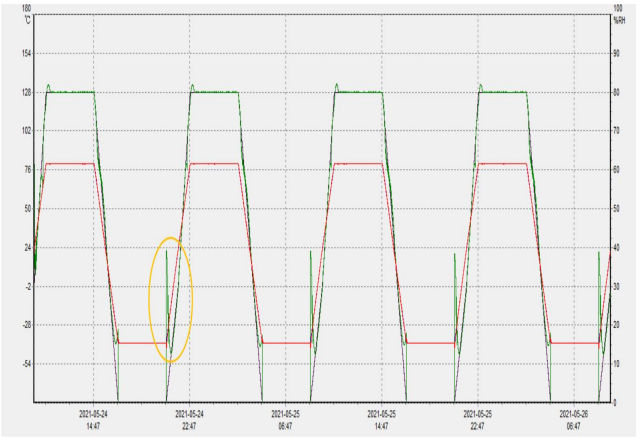
Simplewell curve

Peer curve

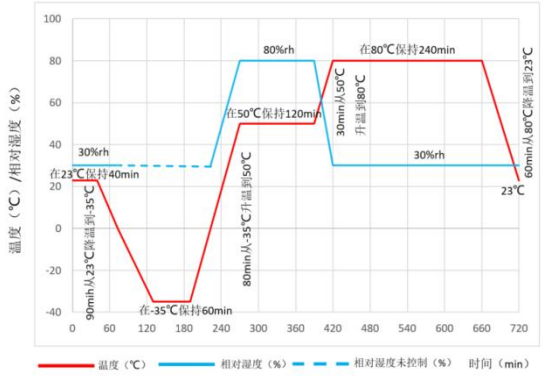
PV 1200

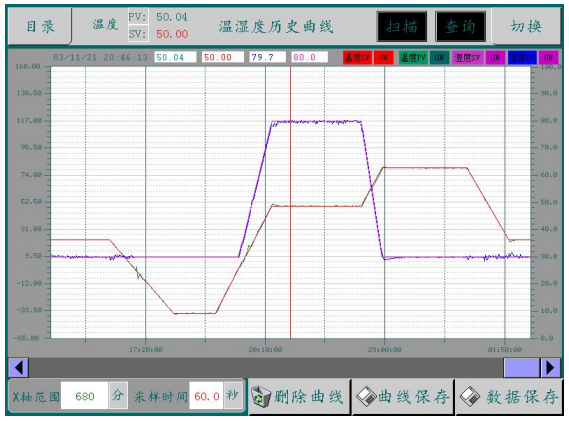


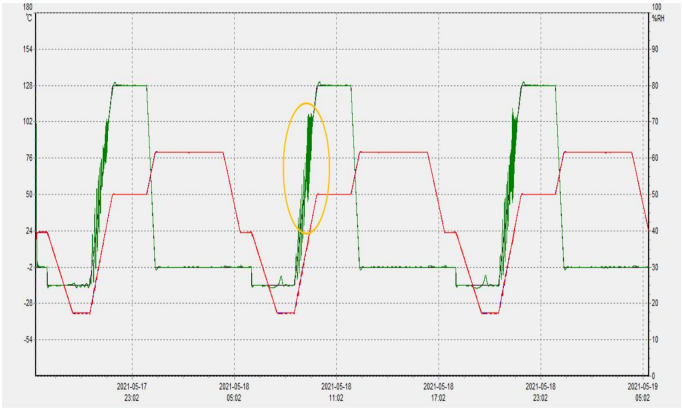




PV 2005





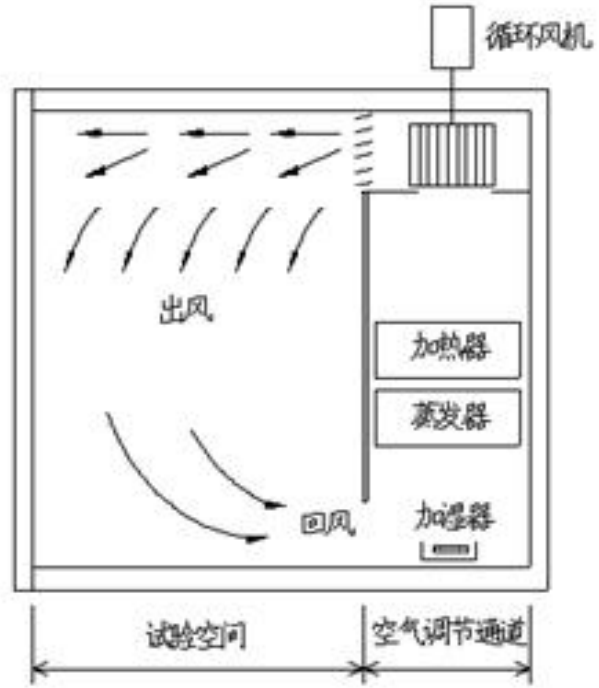


2. Features

Content

2.1.Air circulation system
2.2.Evaporator return pipe
2.3.Base air inlet
2.4.Hidden drawer water tank
2.5.Process advantage
2.6.Simulated road condition vibration test
2.7.Confirmation of each process
2.8.Wire Flame Retardant Certificate

2.1 Air circulation system

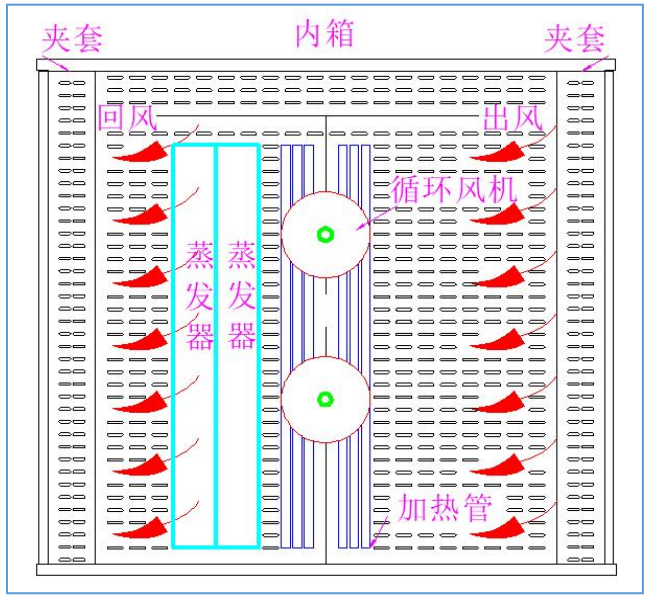


Applicable models:
ESTH/LSTH/ENTH/LNTH/Bench-top

working principle：

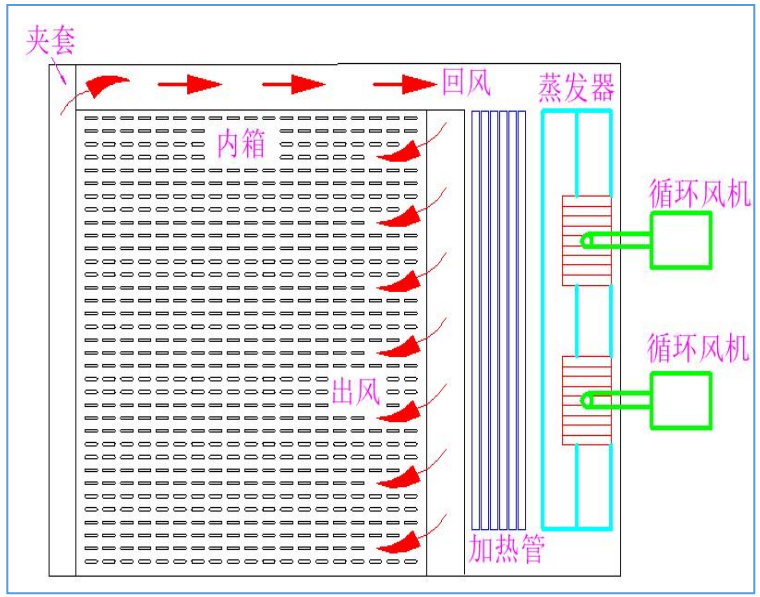
1. Adopt the method shown in the figure to transfer heat to ensure the temperature uniformity of the test space.The centrifugal fan placed on the top of the air conditioning channel is the power source of air circulation。The air enters the channel from the bottom of the regulating channel, passes through the humidifier, standard evaporator and heater for heat exchange, is stirred and blown out by the centrifugal wind wheel, then passes through the split air outlet evaporator, and enters the inner cabin.

2.1 Air circulation system



left and right ventilation

When the battery is placed vertically, the left and right air ducts of the box are opened, and the upper and lower air ducts are closed at this time to peform the test



Up and down ventilation

When the battery is placed horizontally, the upper and lower air ducts of the box are opened, and the left and right air ducts are closed at this time to conduct the test.

Applicable models:
Battery temperature test chamber

Working principle：

1. Adopt the method shown in the figure to transfer heat to ensure the temperature uniformity of the test space.The centrifugal fan placed on the top of the air conditioning channel is the power source of air circulation. The air enters the channel from the bottom of the regulating channel, passes through the humidifier, standard evaporator and heater for heat exchange, is stirred and blown out by the centrifugal wind wheel, then passes through the split air outlet evaporator, and enters the inner cabin.
2.When the left and right circulation is performed, the wind blows out from the left mesh and returns to the air-conditioning room through the right mesh. At this time, the upper and lower air ducts are closed.
3.When the up and down circulation is carried out, the wind blows out from the rear side mesh and returns to the air conditioning room through the front side mesh. At this time, the left and right air ducts are closed

2.2 Evaporator return pipe

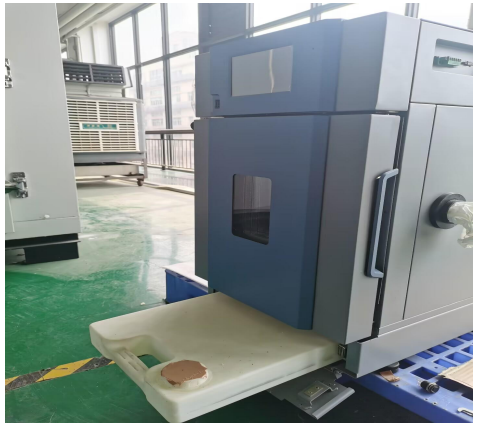
The evaporator adds return pipe to save energy. Sealing boards are added around to reduce gas loss and improve cooling efficiency.

2.3 Base air inlet

The air inlet structure of the base, the mesh can ensure the air volume required by the condenser, can play a shockproof role and can also prevent mice from entering the base and eating wires

2.4 Hidden drawer water tank



The bottom is a revolving door with a built-in drawer-type water tank. When water needs to be added, unplug the water tank or unscrew the water cover to add water without lifting the water tank separately

2.5 Process advantage

1. Pipeline welding process: high-quality copper tube nitrogen shielded welding method is adopted, which avoids the damage to the compressor caused by the oxide impurities on the inner wall of the copper tube entering the refrigeration system caused by the traditional welding method.

2. Damping measures: Install damping springs and anti-vibration soft rubber pads at the bottom of the compressor and pipeline to reduce vibration.

3.Pipeline protection measures: The pipeline of the refrigeration system adopts the method of adding anti-vibration hose and C-shaped elbow to avoid copper pipes and cracks caused by vibration and temperature changes.

5. When the equipment is running, detect the circuit temperature of the power distribution cabinet.

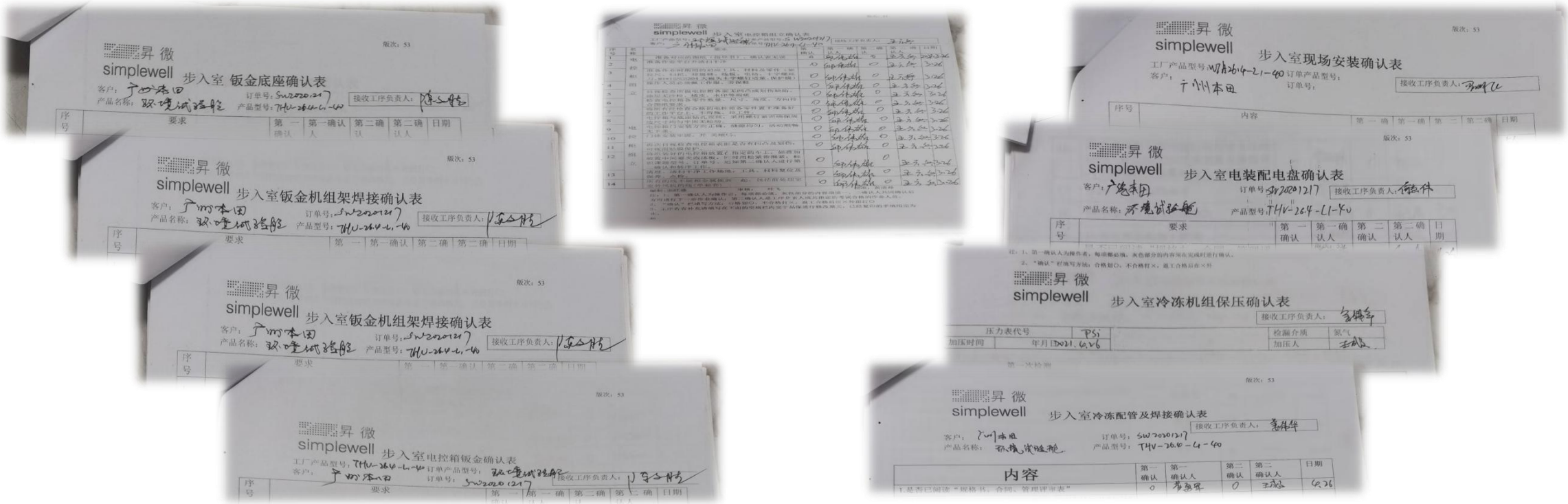
4. Noise control: The condenser adopts the German Marl low-speed high-air volume condensing fan, and installs wave-shaped sound-absorbing sponge around the refrigeration unit to achieve lower noise.

2.6 Simulated road condition vibration test

Parts such as evaporators are subjected to vibration tests before installation

Vibration test for small equipment before shipment

2.7 Confirmation of each process



The environment chamber is strictly controlled in every step of detail confirmation from sheet metal cutting, bending, welding, electric control wiring, freezing assembly, assembly, debugging, and quality inspection.Correct the problems in the production process in time, trace the source at the same time, optimize the production process, improve production efficiency and ensure the quality of each equipment produced

2.8 Wire Flame Retardant Certificate

Adopt flame retardant wires, the picture shows the wire flame retardant certification

3.1 Advancement of related technology

Energy saving

The refrigeration system of related equipment (R404 and R23) adopts electronic expansion valve energy-saving control, and the temperature is stabilized by automatically adjusting the valve opening through software. The heater does not work during the stable process of low temperature (below 0° C), and the compressor consumes less with the cooling flow. The power is correspondingly reduced to achieve the purpose of energy saving. The energy-saving control effect of related equipment has passed the China CQC energy-saving product certification.

中国节能产品认证

试验报告

Energy Conservation Certification Report

报告编号：20210103W00644X 第 4 页 共 5 页

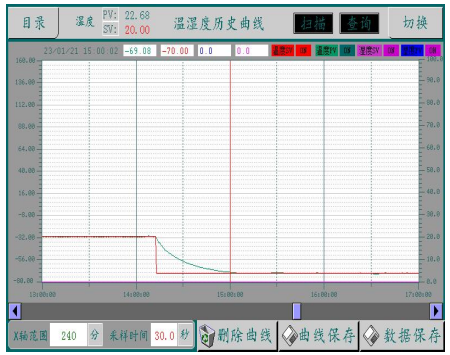
试验结果及判定

序号	检验项目	技术要求	型号	实测值
1	125℃耗电量（kW·h/h）	按照委托方技术要求进行检测。	NTH（AYH,ST）-420-（20～70）	0.785
2	25℃耗电量（kW·h/h）	按照委托方技术要求进行检测。	NTH（AYH,ST）-420-（20～70）	1.818
3	-25℃耗电量（kW·h/h）	按照委托方技术要求进行检测。	NTH（AYH,ST）-420-（20～70）	1.303

Energy saving test results and judgment

3.1 Advancement of related technology

Just set the temperature (humidity) conditions, the automatic control function can reach the set value with the maximum power before reaching the set value, and maintain the operation with the minimum power after reaching the set value.It can respond quickly to the opening and closing of the door and the change of heating load during the test to maintain a stable test environment



Running screen

3.1 Advancement of related technology

Temperature:

The refrigeration system can control the output refrigeration capacity with high precision to achieve high performance and greatly save electricity consumption; in the stable normal temperature and low temperature range, the energy saving can reach more than 50% compared with the traditional mode

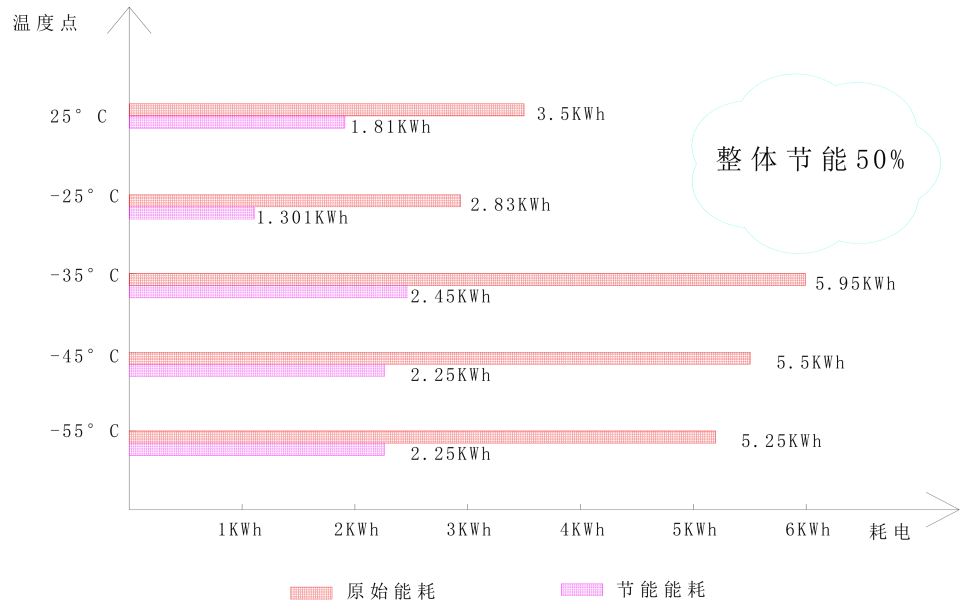
STH408-70 Comparison of Electricity Consumption of Cascade Refrigeration Units

Serial number	Temperature point	unit turned on	Old model power consumption	New model power consumption
1	25℃	R404A	3.5kWh	1.81kWh
2	-25℃	R404A	2.83kWh	1.303kWh
3	-35℃	R404A+R23	5.95kWh	2.45kWh
4	-45℃	R404A+R23	5.5kWh	2.25kWh
5	-55℃	R404A+R23	5.25kWh	2.25kWh

3.1 Advancement of related technology

Temperature:

The refrigeration system can control the output refrigeration capacity with high precision to achieve high performance and greatly save electricity consumption; in the stable normal temperature and low temperature range, the energy saving can reach more than 50% compared with the traditional mode



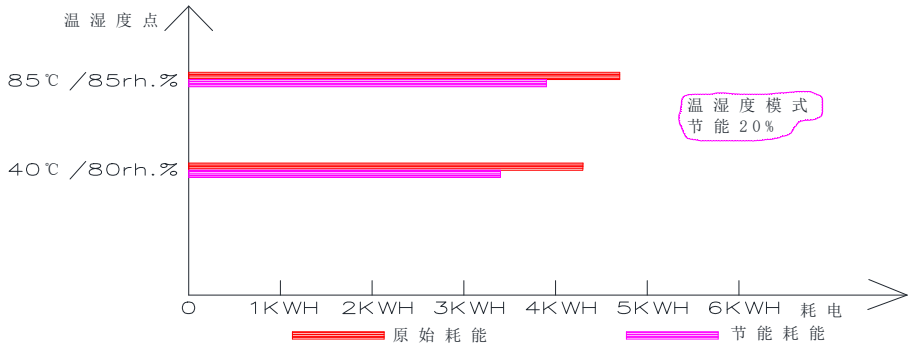
3.1 Advancement of related technology

Temperature and humidity:

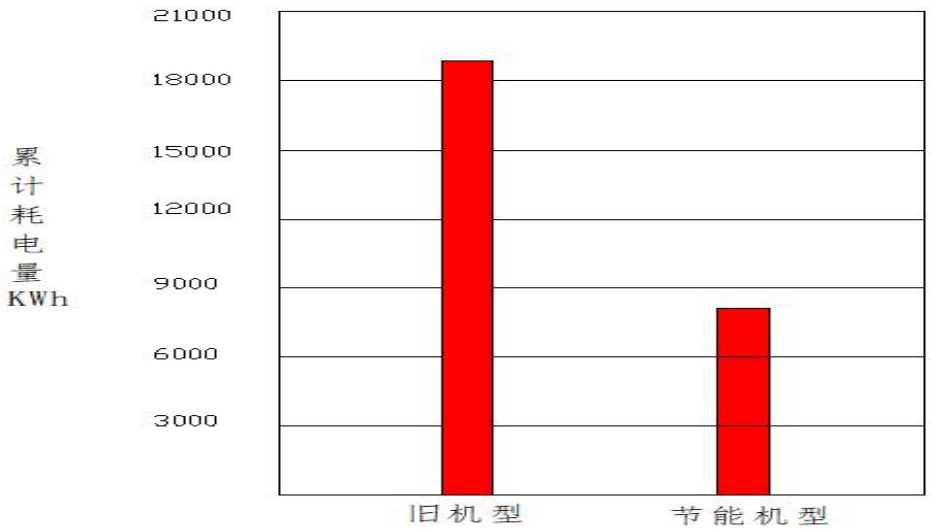
Adopt traditional control method at low humidity and high humidity extreme (Because the humidification output itself is small at the low humidity limit, and the heating tube output is small at the high humidity limit)

When the temperature and humidity are in other ranges, the evaporation pressure of the evaporator is adjusted according to the dew point corresponding to the set value to control the stability of the humidity, so that the output power of heating and humidification becomes smaller. The power becomes smaller accordingly to achieve the purpose of energy saving

	STH408-70 Comparison of Electricity Consumption			
Serial number	Temperature point	Humidity point	Old model power consumption	New model power consumption
1	85℃	85rh%	4.7kWh	3.9kWh
2	45℃	80rh%	4.3kWh	3.4kWh



3.1 Advancement of related technology



Device:ESTH408-70
Control temperature at -55℃ without load
Environment condition：25℃ 50%RH
Annual power consumption:
300 days*12*power consumption

4 .Customer case








Simplewell昇微

Thanks for watching

Simplewell Technology Co., Ltd

Team

Cooperation

Persistence

Honor

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