HZ-2019 High and low temperature testing machine[80L]

Technical Proposal

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Add: Xinhe Management of area, Wanjiang District, Dongguan city, Guangdong province, China
• Equipment: High and low temperature testing Chamber
• Model: HZ-2019
• Machine appearance (for reference)

(The above pictures are available for our two models.)
Appearance

Chamber debugging before shipment
Equipment summary:

The equipment mainly consists of a tank, a refrigeration system, a heating system, an air circulation system and a control system. The outer casing of the cabinet is made of cold-rolled steel plate with electrostatic spray or matte stainless steel. The inner tank is made of high-quality mirrored stainless steel plate. The middle of the box door has a large observation window and is equipped with an observation lamp, so that the user can clearly see the sample. Test situation. The overall appearance is beautiful and generous. The insulation layer is made of rigid polyurethane foam with a small amount of ultra-fine glass wool, which has the characteristics of high strength and good heat preservation. The main temperature control instrument of the device adopts intelligent digital display temperature and humidity control instrument, and the user-friendly design operation method is easy to learn and use, and the instrument operation of different functional grades is compatible with each other. The input uses a digital correction system, built-in common thermocouple and thermal resistance nonlinear correction table, the measurement is accurate and stable. With position adjustment and AI artificial intelligence adjustment function, 0.2 level accuracy, a variety of alarm modes.
Temperature rise, temperature drop, humidification, dehumidification independent, unique BTHC balance temperature adjustment and humidity control. The refrigeration system adopts a fully enclosed imported compressor unit, a mechanical single-stage refrigeration or a combined low-temperature loop system, and a fully automatic control and safety protection coordination system. The heating uses a stainless steel finned heating tube.

**Main function:**

The equipment is mainly for the electrical, electronic products, as well as their original devices, and other materials in the high temperature, low temperature environment storage, transportation, use of the adaptability test. The test equipment is mainly used to carry out environmental simulation test on the physical and other related characteristics of the product under low temperature, high temperature and condition according to the requirements of national standards or user’s own requirements. After the test, the performance of the product is judged by testing. Whether it can still meet the predetermined requirements for product design, improvement, identification and factory inspection.

**Main characteristic:**

1. The chiller adopts the French original “Tecumseh” fully enclosed compressor.
2. The refrigeration system is designed with a unit or binary low temperature loop system.
3. The multi-wing blower powerful air circulation, avoid any dead angle, can make the temperature distribution in the test area uniform.
4. The wind path is designed to return to the wind and return to the wind. The wind pressure and wind speed are in compliance with the test standards, and the temperature can be stabilized at the instant of opening the door.
5. Heating, cooling, system completely independent can improve efficiency, reduce testing costs, increase life, reduce failure rate.
6. The temperature control adopts all imported touch button type instruments, and the operation setting is simple.

7. After inputting the data and test conditions, the controller has a locking function to avoid changing the temperature value due to human touch.

8. With the function of P.I.D automatic calculation, the temperature change condition can be corrected immediately, making the temperature control more precise and stable.

**Standard:**

1. GB 10589-89 low temperature testing condition

2. GB 10592-89 high temperature testing condition

3. GB 11158-89 high temperature testing condition

4. GB/T5170.2-1996 basic parameters of environmental testing method for Electrical and electronic products,

5. GB2423.1-89 The basic test regulation for electrical and electronic products, Test A: low-temperature test method

6. GB2423.2-89 The basic test regulation for electrical and electronic products, Test B: high-temperature test method

7. The basic test regulation for electrical and electronic products, Test: high-low-temperature test method

**Applicable industries:**

Applied to test the products quality, such as electronic, plastic products, electrical appliances, instruments, food, vehicles, metals, chemicals, building materials, aerospace, medical care ... and so on.
Technical parameters:

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</thead>
<tbody>
<tr>
<td>Inner size W<em>H</em>D (cm)</td>
<td>40x50x40</td>
<td>50x60x50</td>
<td>60x75x50</td>
<td>80x85x60</td>
<td>80x95x80</td>
<td>100x100x80</td>
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<tr>
<td>External size W<em>H</em>D (cm)</td>
<td>90x136x94</td>
<td>100x146x104</td>
<td>100x161x117</td>
<td>110x171x137</td>
<td>130x181x137</td>
<td>150x186x137</td>
<td>150x186x157</td>
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**Performance**

- **Temperature**: -70°C~150°C (A:+25°C B:0°C C:-20°C D:-40°C E:-50°C F:-60°C G:-70°C)
- **Fluctuation**: ≤±0.5°C/+1°C-2°C
- **Heating rate**: About 3°C/min
- **Cooling rate**: About 1.5°C/min
- **Controller**: LED digital P.I.D, +S,S,R.microcomputer controller( import type)
- **Accuracy**: Setting accuracy temperature ±0.1 o C,directed accuracy temperature ±0.1 o C, resolution ±0.1 o C
- **Temperature sensor**: Platinum resistance PT100 Ω/MV
- **Heating system**: Independent system, nickel-chromium alloy electric heating type heater
- **Cooling system**: Fully enclosed air-cooled single-stage compression refrigerate mode / original from French "Taikang" / Fully enclosed air-cooled re-compression refrigerate mode
- **Cycling system**: Temperature, low-noise, air-conditioning-type motor. Multi-vane centrifugal wind wheel

**Material**

- **External material**: High-quality carbon steel plate. Phoshide electrostatic spray treatment / SUS304 stainless steel hairline treatment
- **Inner material**: SUS304 High-quality stainless steel light board
- **Insulation material**: Rigid polyurethane foam, ultra-fine glass fiber cotton
- **Door frame insulation**: Double-resistant high-temperature aging of silicone rubber seal

**Standard configuration**

a set of Multi-heated glass window attached lighting, product shelf 2 pcs, test leads holes (25,50 mm) 1 pcs

**Safety protection**

- Leak current, short circuit, over temperature, motor overheating, over-pressure compressor, overload, over-current protection

**Timing function**

0.1～999.9（S、M、H）可调

**Power supply**

AC380V±10% 50±0.5Hz ,Three-phase five-wire system

**Note:**

1. The above data are measured at ambient temperature (QT) 25 ° C. The studio is under no load conditions.
2. Can be customized according to the specific requirements of users, non-standard high and low temperature, low temperature laboratory.
Detailed configuration and software features:

Structure and materials:

1. **Inner material**: Mirror stainless steel plate (SUS 304, thickness 1.0mm);
2. **External material**: Foundation paint (thickness 1.0mm);
3. **Insulation layer design**: Effectively avoid condensation on the top of the box;
4. **Insulation**: Insulation (Hard PolyurethaneFoaming, 100mm thickness);
5. **Chamber door**: Single door, single windows. The double-channel insulation is tight and tight, effectively isolating the heat exchange inside and outside the box;
6. **Observation window**: Three layers of vacuum glass for easy observation of test samples. Size: 320X250X40mm;
7. **Window anti-sweat**: Electric heating device to prevent moisture condensation;
8. **Lighting design**: High-brightness window lighting energy-saving lamp, easy to observe the sample;
9. **Test hole**: 50mm diameter on the left side of the body, 1 stainless steel hole cover, 1 silicone plug (optional multiple or 100mm);
10. **Machine pulley**: Easy to move (adjust the position) with the powerful bolt (fixed position);
11. **Chamber built-in rack**: Stainless steel SUS #304 square punching steel plate rack 2 pieces and track 2 sets (adjustment spacing);
12. **Weight**: About 200KG

Temperature electrothermal circulation system:

1. Heating system: Heat sinking electric heater;
2. Heating tube: It adopts all-stainless steel seamless casing, insulation resistance is more than 50MΩ, and has anti-dry control;
3. Circulation system: The wind adopts multi-wing centrifugal rewinding fan, strengthens the shaft center and is resistant to high and low temperature. The blade is made of aluminum alloy, and the stainless steel lengthens the shaft circulating motor to achieve forced circulation convection.
4. Air deflector design: It can be adjusted up, down, left and right to ensure uniform temperature and humidity distribution;
5. Control mode: Balanced temperature control system (BTHC), control SSR solid state relay by P.I.D. to realize high-precision non-contact switch control, so that the heating and humidification amount of the system is equal to the amount of heat loss, so it can be used stably for a long time.

Cooling system:

1. Refrigeration system: Original French “Tecumseh” compressor (determined power according to low temperature range);
1.1. **Summary**: The heart of the compressor refrigeration system uses a refrigeration cycle of
compression → condensation → expansion → evaporation (endothermic) to reduce the ambient temperature.

1.2. Structure:
A. Case
B. Electric motor
C. Cylinder block
D. Piston
E. Starter and thermal protector
F. Cooling system composition

1.3. Features:
- High-efficiency, low-gap large-volume F-class insulated motor ensures high cooling capacity, low power consumption and operational safety.
- Series 1/12-12, 10 series, hundreds of models. The most prestigious in the commercial freezer industry.
- It has long-term application under different climatic conditions in different regions of China and Southeast Asia. It has been tested and tested, and its performance is stable and reliable.
- The best balance design makes the compressor vibration less, low noise and smoother operation.
- Wide voltage design, single camera working voltage 180-240V, three cameras 340-440V, suitable for Chinese voltage requirements.

2. Cold and heat exchange system: Ultra-high efficiency SWEP refrigerant cold heat exchange design (environmental refrigerant R404A);

3. Heating load adjustment: Automatically adjust the refrigerant flow, effectively taking away the heat generated by the heating load;

4. Air-cooled condenser: Fin-type cooling motor;
4.1 Summary: Air-cooled condenser A heat-dissipating device for cooling equipment that uses air for cooling in Freon refrigeration equipment.
4.2 Features:
- The shell is made of high-quality steel plate with surface spray, corrosion resistance, beautiful appearance, high strength, corrosion resistance and easy assembly.
- High-efficiency external rotor fan with low speed and high air volume. Smooth operation and low noise.
- Independent switch, safe and convenient. The fan motor has high water resistance (IP65) and
long life.
◆ The copper tube adopts high-purity seamless copper tube, which has long service life and is not easy to be broken and corroded.
◆ Large contact surface, enhanced fin strength and air spoiler effect.
◆ Applicable to refrigerants such as R22\R134A\R404A\R407C

Safety device
1. Leakage and overload protector, compressor overload protector
2. Over temperature, super wet power protection
3. Water shortage and phase loss protection
4. Compressor high and low voltage protection
5. Humidifier (compressor) overheat protection
6. Temperature limit protection device, compressor current protection

Standard accessories:
1. Two sets of adjustable stainless steel slabs, which can change the distance arbitrarily
2. Vacuum glass perspective window, explosion-proof type
3. Wide-angle projection lighting equipment, using energy-saving high-efficiency fluorescent lamps
4. The fuselage is equipped with adjustable fixed shaft and movable wheel 4 group and control indicator
5. Test cable outlet 50mmΦ hole a pair

Power supply:
Three phase, 380V±10% ,Power frequency: 50Hz±2%  4KW

It is strictly forbidden to put the following items into the test box:
◎ Explosives: such as nitrates, other explosive nitric acids, explosive nitro compounds, explosive organic peroxy compounds;
◎ Corrosive substances, there are strong corrosive substances, such as powder, easy to contaminants;
◎ Combustible substances: such as metals Li, K, Na, P, oxides, chlorides, nitrates;
◎ Flammable products: such as gasoline, kerosene, methanol, xylene, etc. and substances with a burning point greater than -30 degrees;
◎ Combustible gases such as hydrogen, acetylenes, alkanes and others that are combustible at 15 degrees;
It is strictly forbidden to put corrosive substances into the box! Otherwise, the following conditions may occur:

◎ The service life of the box may be greatly shortened
◎ Humidification tube, the evaporator may not work properly
◎ Electrical equipment may appear premature aging
◎ Safety devices may not work reliably
◎ The sealing device accelerates aging
◎ The water supply and drainage pipeline will be corroded and cracked

(Note: can be customized based on customers requirement)

Certificate reference:
Thank you for your reading, and warmly welcome to visit our company!