

Put My Heart In Your Hand

广东纽格尔仪器有限公司

Guangdong Newgoer Instrument Co., Ltd



Add: NO.16, Shuijiao Gongye Road, Lichuan, Dongcheng,
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Temperature and Humidity Test Chamber



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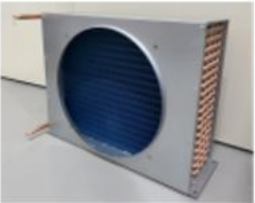
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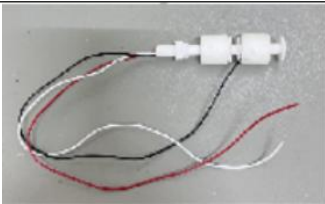
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Main Parts and Components

Compressor		 
Evaporator		
Condenser	 	
Refrigerant		
Refrigerant Oil	 	
Condenser Fan		
Oil Separator		



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Dry Filter		
Water Level Float		
Water Pump		
Time Relay		
Intermediate Relay		
Transformer		
Protective Relay		
Solid State Relay		

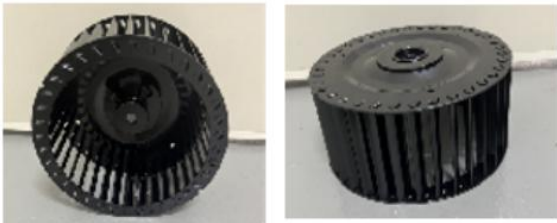
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Thermorelay		
Temp Humidity Sensor		
No Fuse Switch		
Humidifier Pipe		
Circulation Fan		
Solenoid Valve		
Heating Tube		
Electricity Leakage Breaker		



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Summary

This test chamber provides high temperature, low temperature, high humidity, low humidity simulation environment to detect rubber, plastic, electronic products before and after the test of material and strength decay degree. The machine can also simulate the container environment to detect the fading and shrinking of rubber and plastic under high temperature and humidity. Test the heat resistance, cold resistance, dry resistance and moisture resistance of various materials. Suitable for electronics, electrical appliances, batteries, universities, research institutes, inspection and quarantine Bureau, paper products, food, vehicles, auto parts, metal, chemical, building materials and other industries factory unit quality control testing.

Main Features

1. Colorful Chinese and English LCD touch screen, easy to operate.
2. With R232,485,USB interface, Ethernet communication function, so that the test process of the whole record monitoring and export printing.
3. Adopt the popular energy-saving control mode, automatically adjust the compressor refrigeration power, compared with the traditional heating balance control energy consumption is reduced by 30%.
4. The main accessories of the whole machine are used, so that the overall quality of the equipment has been improved or guaranteed.
5. Size/parameters/functions can be customized according to user requirements.

Standards

1. **GB11158**: Specifications for high temperature test chambers
2. **GB10589-89**: Specifications for low temperature test chambers
3. **GB10592-89**: Specifications for high / low temperature testing chambers
4. **GB/T10586-89**: Specifications for damp heat testing chambers
5. **GB/T2423.1-2008 / IEC60068-2-1**: Environmental testing for electric and electronic products
Part 2: Test methods -- Test A: Cold



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6. **GB/T2423.2-2008 / IEC60068-2-2:** Environmental testing for electric and electronic products
Part 2: Test methods -- Test B: Dry heat
7. **GB/T2423.3-2006 / IEC60068-2-78:** Environmental testing for electric and electronic products
Part 2: Test methods -- Test Cab: Damp heat, steady state
8. **GB/T2423.4-2008 / IEC60068-2-30:** Environmental testing for electric and electronic products
Part 2: Test methods -- Test Db: Damp heat, cyclic (12h + 12h cycle)
9. **GB/T2423.22-2002 / IEC60068-2-14:** Environmental testing -- Part 2: Test methods -- Test N:
Change of temperature
10. **GJB150.3:** Environmental test methods for military equipment -- High temperature test
11. **GJB150.4:** Environmental test methods for military equipment -- Low temperature test
12. **GJB150.9:** Environmental test methods for military equipment -- Damp heat test

Chamber Structure

The whole is divided into three combinations of laboratory, electric control cabinet and machine bin: the upper left side is the laboratory, which is composed of the inner chamber of the thermal insulation layer, and the single door type is used to the left; The electric control cabinet is located on the right side, and the panel is mainly composed of temperature controller, switch button and fault protection indicator light. The machine compartment is placed under the test room and is composed of accessories such as filter, solenoid valve, line part and compressor.

Insulation Material: 100mm rigid polyurethane foam or glass fiber, fire resistance, in line with environmental requirements;

Inner Box Material: SUS #304 stainless steel;

Outer Box Material: Steel Plate Paint or Stainless Steel;

Chamber Door: Hinged single door, in order to prevent condensation or frost on the edge of the door frame and door during low temperature test, the edge of the door frame and door is provided with an electric defrost device;



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Test Hole: The chamber is equipped with 1 Φ 50mm hole, 1 soft plug and 1 hole cover. It can be used for external test power cord or signal cable; (Can be customized Φ 100mm hole)

Sealing: The door and frame of the test box are sealed with double silicone rubber strips, which are resistant to high and low temperature, anti-aging, and have good sealing performance;

View Window: The single door is equipped with a 3-layer vacuum large glass observation window, and there is no frost and condensation on the surface during any test.

Illumination: LED AC220V 1 energy-saving lamp, installed on the window, explosion-proof and moisture-proof.

Trundle: The bottom of the machine adopts 4 sets of high-quality fixed universal movable wheels (easy to move) and flat foot cups (adjust the balance of the body);

Commodity shelf: There are 2 stainless steel storage racks with adjustable height in the box.





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Specifications

Model	NG-TH80	NG-TH150	NG-TH225	NG-TH408	NG-TH800	NG-TH1000
Inner Size (cm)	40*50*40	50*60*50	50*75*60	60*85*80	100*100*80	100*100*100
Volume	80L	150L	225L	408L	800L	1000L
Temp. Range	a: -20℃ ~ +150℃ (+180℃); b: -40℃ ~ +150℃ (+180℃); c: -70℃ ~ +150℃ (+180℃)					
Humidity Range	20~98% R•H adjustable (or custom low humidity)					
Temperature and Humidity Control Range						
Control Stability	Temperature $\leq \pm 0.5^{\circ}\text{C}$; Humidity $\leq \pm 2\%$					
Uniformity	Temperature $\leq \pm 2^{\circ}\text{C}$; Humidity $\leq \pm 3.0\%$					
Heating Speed	Average $2.5^{\circ}\text{C}/\text{min}$					
Cooling Speed	Average $1^{\circ}\text{C}/\text{min}$					
Npose	72dB					
Inner Material	#SUS 304 Stainless Steel					
Outer Material	Steel Sheets with Paint					
Protection Device	Compressor overload protection; Fuse protection; Overheat protection; Humidifier dry-combustion protection; High/low pressure of refrigerator; Over-humidity and temperature protection; Water shortage protection; Over- current protection; Over-current circuit breaker; Earth leakage protection etc...					
Power	AC1 Phase 220V 50/60Hz (or custom)			AC3 Phase 380V 50/60Hz (or custom)		

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Model

NG-TH (80/150/225/408/608/800/1000)



NG-TH Series:

Outer Material: Steel Plate Paint

NG-THB (80/150/225/408/608/800/1000)



NG-THB Series:

Outer Material: Stainless Steel

Other Appearance Optional (Steel Plate Paint)



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Customized Service are Available as Per Client's Needs

Small Size Desktop Test Chamber, the size support customization.



Working Volume: 22L

Working Volume: 44L

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Large Size Test Chamber, the size support customization.



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Walk-In Environmental Test Room, the size support customization.



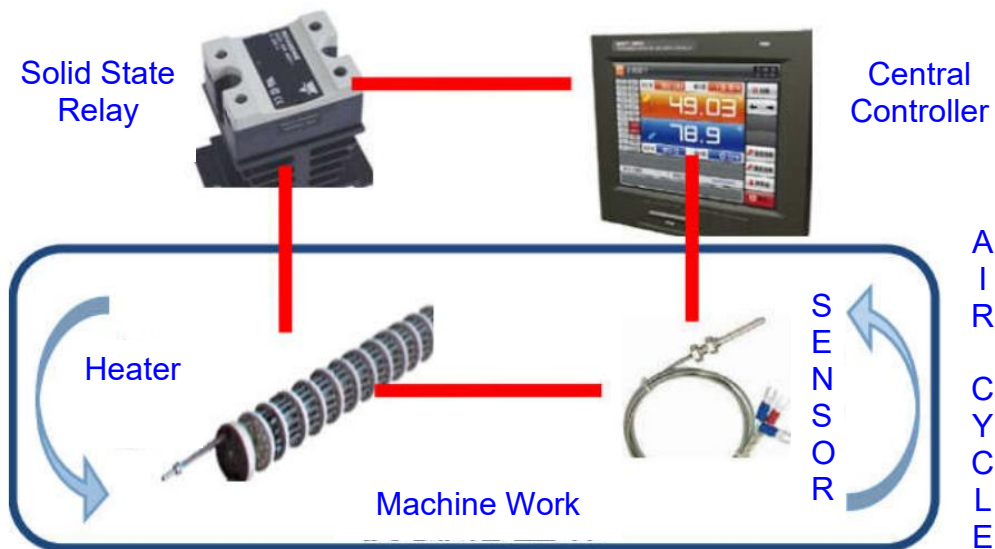


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Temperature and Humidity System

Heating Control Mode

The closed-loop feedback heating control system is composed of temperature sensor, central controller, solid-state relay drive module and heater actuator. Through P.I.D control calculus, precise and rapid temperature compensation control can be carried out for the test chamber studio in real time.

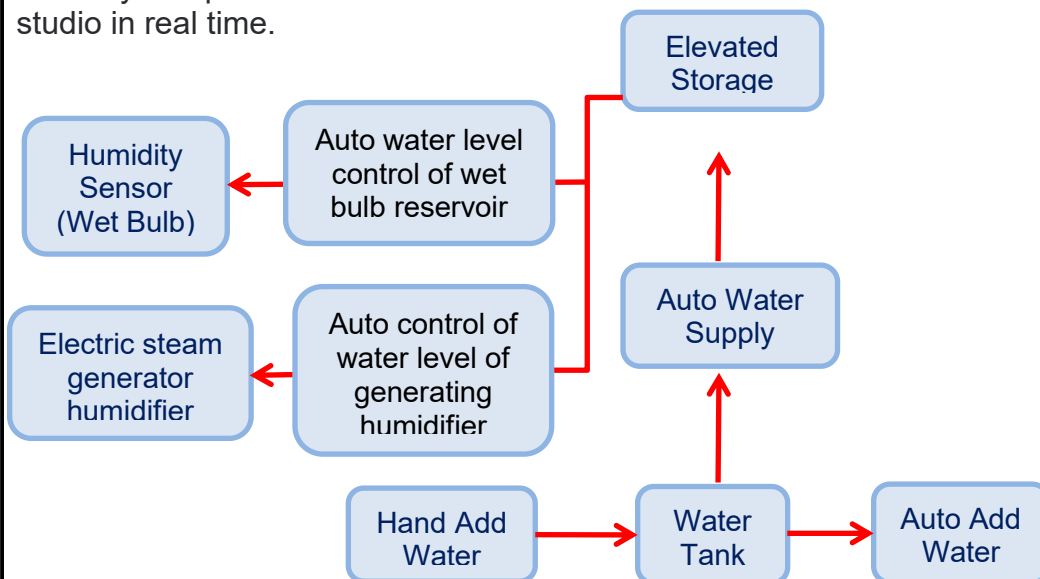


Heater

Taiwan imported stainless steel fin type heating pipe

Humidification Control Mode

The closed-loop feedback heating control system is composed of humidity sensor, central controller, solid-state relay drive module and humidifier actuator. Through P.I.D control algorithm, precise and fast humidity compensation control can be carried out on the test chamber studio in real time.





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	Remark: If adopted wet bulb humidity sensor, a matching tank is required to provide automatic add water control; If adopted electronic humidity sensor, automatic add water control is not required.	
Humidification System	Water tank to pumping motor, pumping motor has double float control, the lower float ball falls to start pumping, the upper float ball floats to pump off, the advantage of the double float control pumping motor, the motor will not pump frequently. Split humidifier tank Large transparent glass window It can clearly observe the water level and the cleanliness of the humidifier barrel	
Humidifier Drum	Filter the dirt inside the water, but also easy to disassemble and clean	
Water Suction Pump	Delta quiet self-priming pump, low noise, stable performance, with filter (easy to clean water pump)	
Water Tank	Built-in movable water tank 1 (easy to clean) Water shortage warning device	
REMARK	Automatic water inlet function is optional	



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Air Circulation System	
Air Control System	Air forced circulation balance temperature and humidity control: Air forced circulation balance temperature and humidity control → Target temperature and humidity ↓ ↑ Air Circulation System Air Heating System Air Cooling System Air humidification System Assisted Control System
Air Circulation Uniform Distribution Device	1. Centrifugal fan, long axis external motor drive 2. Specially designed centrifugal fan blade 3. Specially designed circulating air duct structure and components
Motor	"Yizheng" synchronous acoustic mute motor



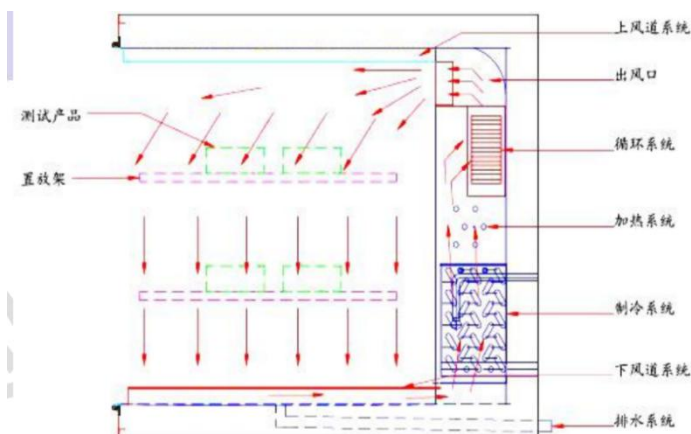
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Air Transport Mode

The high-temperature circulating fan is adopted, the motor is installed outside the inner box, the stainless steel extended shaft extends to the box, and the multi-wing aluminum alloy fan wheel is installed at the end of the long shaft.

Special heat insulation measures and heat dissipation system improve the safety of the motor, and the motor has a high temperature self-protection function.

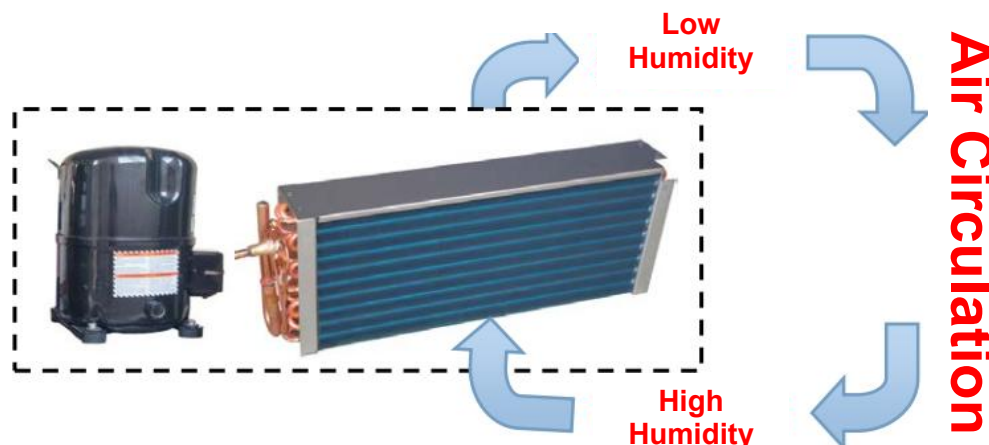
Special adjustable sheet air supply circulation system to ensure the temperature uniformity in the box.



Refrigerating System

Principle of Refrigeration Dehumidification

The air circulation system of the test chamber forces the humidity air to precipitate the water vapor of the air through the condensation of the refrigeration evaporator, so that the air of the studio is desiccated; The dehumidification is controlled by controlling the cooling capacity of the evaporator.

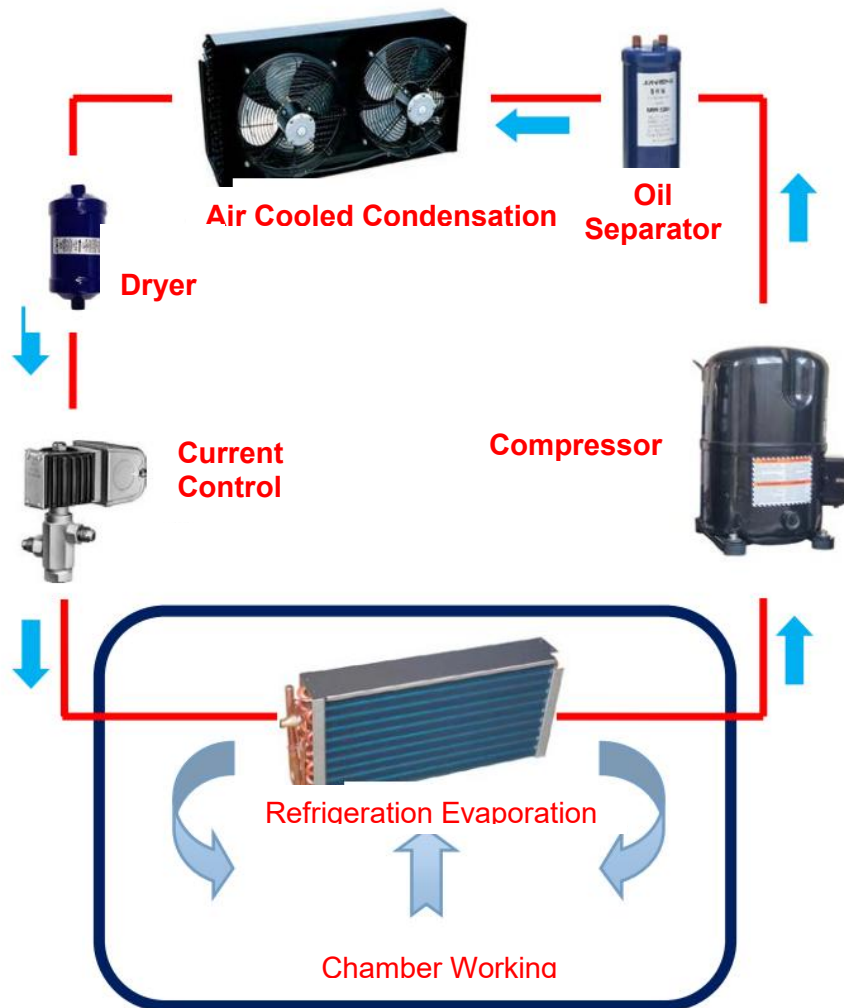




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Refrigeration Working Mode

The steam body compression conversion refrigeration method uses the cyclic gasification and liquefaction physical energy conversion process of the refrigeration medium in the closed-loop refrigeration system for refrigeration. The simple schematic diagram is as follows:



Refrigeration Compressor



Imported from France "TECUMSEH" fully enclosed compressor or
"Emerson" fully enclosed compressor



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Condenser	The high temperature and high pressure vapor discharged from the compressor is cooled into a liquid; The heat released is carried away by water or air. Can be divided into water-cooled condenser.	
Evaporator	Vaporize a liquid into a gas; Absorb heat or dehumidify	
Dry Filter	Absorb the residual water and acidic substances in the refrigerant of the refrigeration system and filter out the solid impurity particles in the system, copper cutting, etc., protect the normal operation of the expansion valve and the capillary tube, and avoid ice blockage and water blockage	
Oil Separator	The Emerson oil separator separates the refrigerant and liquid sprayed from the compressor to protect the compressor from the loss caused by the accumulation of refrigerant liquid (generally used in overlapping systems or large single systems).	
One-way Valve	The main function of the check valve is to prevent a large number of high temperature and high pressure steam inside the rotary compressor from flowing back to the evaporator when it is shut down, so that the evaporator heats up, resulting in reduced refrigeration efficiency, that is, to control the flow of refrigerant under different conditions of hot and cold.	



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Refrigeration System Technology	The low-temperature connection pipe is made of high-quality oxygen-free copper pipe, and the well-known "Rosenberg" electric pipe bender is used for pipeline production, nitrogen filling welding, and 48-hour high pressure and leakage prevention process to ensure welding quality. Pipe welding: High quality copper pipe nitrogen protection welding method, so that the copper pipe inside smooth and no oxidation, to avoid the traditional welding method caused by oxide impurities in the inner wall of the copper pipe into the refrigeration system to the compressor damage. Vibration reduction measures: the compressor bottom installation of the vibration reduction spring and anti-vibration soft cushion combination vibration reduction; Anti-vibration hoses and C-shaped elbows are added to the pipes of the refrigeration system to prevent the rupture of copper pipes caused by vibration and temperature changes, resulting in refrigerant leakage and affecting the overall performance of the system. Noise control: Low speed and high air volume condensing fan is used on the condenser to achieve low noise effect.
Control System	
Controller	
Control Mode	Balanced temperature and humidity control system (BTHC), control SSR by P.I.D. mode, so that the heating and humidification amount of the system is equal to the heat and humidity loss amount, so it can be used for a long time.



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Controller Characteristics	* Independent research and development design * Programmable controller * LCD, color screen display * Touch screen direct button type * Temperature and humidity can be programmed simultaneously * Chinese and English display * 7 inch true color screen * Large LCD controller with high contrast and adjustable backlight function.
Controller Specification	* Accuracy: Temperature $\pm 0.1^{\circ}\text{C}$, humidity $\pm 1\%\text{R.H}$ * Resolution: Temperature ± 0.1, humidity $\pm 0.1\%\text{R.H}$. * With upper and lower limit standby and alarm function * Temperature & humidity input signal PT 100$\Omega \times 2$ (dry ball and wet ball) * 9 groups of P.I.D control parameter setting, P.I.D automatic calculation * Automatic wet and dry bulb correction.
Picture Display Function	* Screen conversation, no key input, screen directly touch options. * The temperature and humidity setting (SV) and the actual (PV) value are displayed directly. * Can display the current execution program number, segment, remaining time and number of cycles. * Run cumulative time function. * Temperature and humidity program setting values are displayed by graphical curve, with real-time display program curve execution function. * With a separate program editing screen, each page can input at least 5 segments of temperature and humidity and time. * English and Chinese can be switched at will. * The fault prompt screen is displayed. * The screen can be backlit. * The screen display protection function can be used for timing, TIMER or manual shutdown Settings.
Program Capacity and Control Functions	* Groups of programs available: up to 120 PATTEN * Available memory capacity: Total 1200 SEGMENTS * Repeatable commands: Each command can be executed up to 999 times. * The program is made in conversational style and has the functions of editing, clearing and inserting. * SEGMENTS is set to 0 to 99Hour59Min



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	* With power off program memory, automatically start and continue to execute the program function after the restart. * The graphic curve can be displayed in real time when the program is executed. * It has the function of booking start and shutdown * With date, time adjustment function * Key and screen LOCK function
Protection Devices	
Protector	1. Zero crossing thyristor power controller
	2. Heating air burn protection switch
	3. Compressor overpressure protection switch
	4. Compressor overload and overcurrent protection switch
	5. Phase loss protection switch
	6. No fuse overload protector
	7. Water tank protection switch

List of Main Parts

Item	Brand	Origin Place
Controller	Research Joint Venture	China
Compressor	TECUMSEH	France
Evaporator	Kewely	China
Condenser	Kewely	China
Refrigerating Fluid	Honeywell	America
Refrigerant Oil	Emkarate	America
Heat Exchanger	Feks	China



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One-way Valve	Danfoss	Denmark
Condenser Fan	MaEr Fan	China
Oil Separator	Emerson	America
Standard Nonwoven Fabric	Chung Wah Chow	China
Dry Filter	Danfoss	Denmark
Wind Wheel	Yizheng	China
Water Level Float	Zetian	China
Water Pump	EC	China
Time Relay	CKC	China
Intermediate Relay	Schneider	France
Transformer	Chint	China
Phase Break and Phase Sequence Protection Relay	OMRON	Japan
Solid State Relay	MGR	China
Thermorelay	Schneider	France
Temperature Sensor	Tiankang	China
Humidity Sensor	Tiankang	China
No-fuse Switch	Chint	Taiwan
METM - SERIES	Customization	China
Circulating Fan	Yizheng	China
Solenoid Valve	HONG-SEN	China
Button Switch	Gangbo	China
Heating Tube	Weide	China

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After-sales Service



- 1) 12 months product warranty. Free components will be provided if any performance failure occurs within 12 months caused by non-human damage.
- 2) If you face any problems in future during testing process, We will serve as a technical adviser for lifetime, give you a reply within 48 hours and the solution provided within 3 working days.
- 3) We will provide some guidance for the normal use of the machine, and in the case of the machine is not used for a long time, protection guidance provided, then keep the good performance of the machine.
- 4) We can offer operation video and operation manual, also can provide video-conference.
- 5) If necessary, on-site service will be provided, but the transport and travel expense shall be borne by customer.

PRODUCTION LOGISTICS



1.Design



2. Production Material



3. Accessories Processing



4. Product Assembly



5. Product Debugging



6. Packaging & Shipping



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OUR SERVICE



- **Unbeatable prices**, we are constantly trying to find ways to reduce our production costs and give you through price!
- Strong brand awareness, our company is gradually building our brand, for which we will seriously treat every customer, and ensure the quality of each product.
- Special Offers In order to maintain our competitive edge, **we are constantly running special offers on our promotion tester machine, consumer goods, and design services**. Contact our sales team to see how we can help you save a lot of money.

OUR SERVICES

- **One year Warranty** including free maintenance and changing Instrument components
- We will offer operation video, English operation manual, life-long technical assistance and video teaching
- **Future testing solutions consultation and laboratory free test**, you can send samples to us, and we can test it for you



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OUR CUSTOMERS



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