Lab Companion

Two-Zone Thermal Shock Test Chamber TS2-60-40A

Custom Solution

Brief Introduction

Two-zone(Basket Type) Cold and Thermal Shock Test Chamber is a device designed to replicate a range of environmental conditions a product might face throughout its lifespan. It features two distinct compartments: one for hot and one for cold environments. The hot compartment is heated by a heating element, while the cold compartment is chilled by a refrigeration unit. Each box's temperature is independently controlled, enabling the creation of various temperature scenarios. Products are placed inside and exposed to alternating hot and cold conditions to simulate thermal shock, which is especially critical for electronic components sensitive to temperature fluctuations. This chamber is also valuable for testing product durability under extreme temperatures, relevant for industries such as aerospace and automotive. In essence, the Two-zone(Basket Type) Cold and Thermal Shock Test Chamber is crucial for product testing and quality assurance, ensuring that items can endure the environmental stresses they will likely face in real-world applications.

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Technical Features:

Dimensions (mm)	Width	Height	Depth
Useful	460	350	300
Overall	1006	2120	1800

Temperature and humidity range:

Test tank temperature range: -70℃~180℃.
Thermal shock range: -40℃~150℃
Temperature setting range of high temperature tank: 60℃~180℃
Temperature setting range of low temperature tank: -70℃~-10℃.
High temperature tank heating time from RT (room temperature) to 180℃: ≤ 45/min
Low temperature tank Cooling time from RT (room temperature) to -70℃: ≤50min
Temperature stability: ±0.5℃.
Temperature uniformity: ±2.0℃.
Temperature recovery time from -40 to 150 ° C: ≤ 3min(no-load)
The constant thermal shock time of high and low temperature is more than 15 min

Standard conditions of use:

Use environment temperature: 5~30℃

Other parameters:

1. Controller model: Q8 color touch screen
2. Compressor model: ZF13KQE*2
Refrigerant: R-404A/R23
3. Temperature electric heating (H) : 10.8 KW
Temperature electric heating (L) : 7.2 KW

Power supply specifications:

AC 380 V, 50/60 HZ, 3 ∮ 5 wire

Rated current:

AC 27 A, power 18 KW

This machine is dedicated to the above marked power supply, please use according to the rated power distribution. If the use area is changed, please contact our company. Service phone 400-628-2786.

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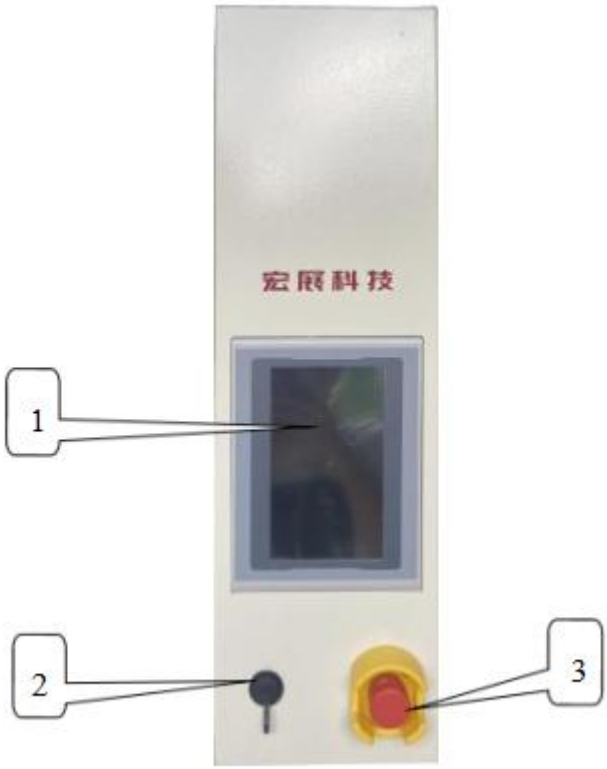
Appearance Introduction and Description:

1. Front and side of the machine

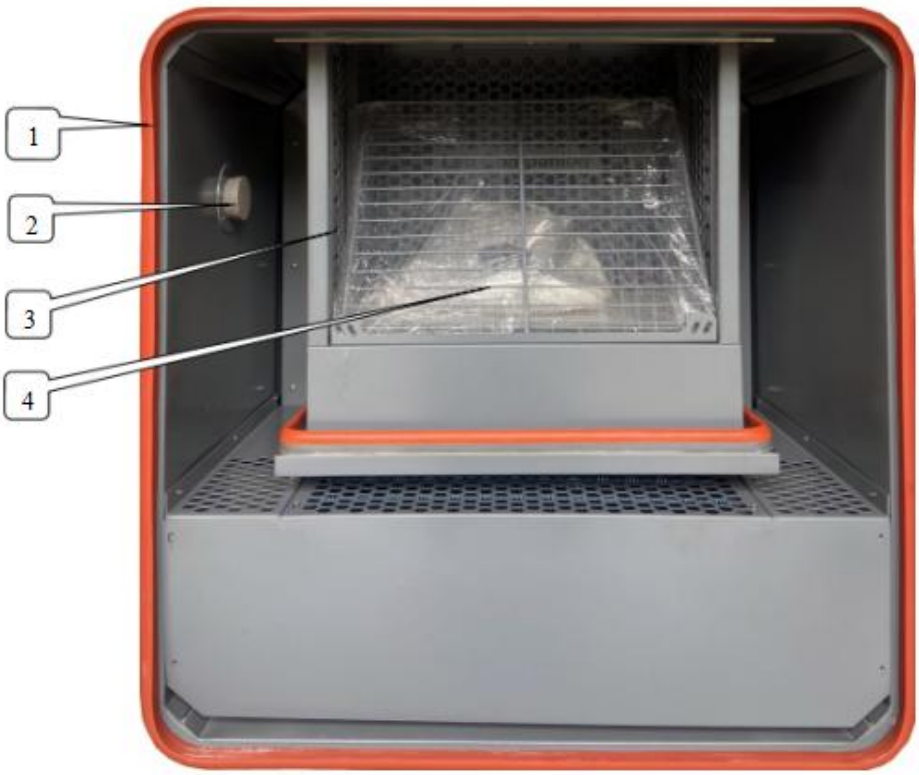
Number	Name	Illustration
1	Tricolor light	Green light means running, yellow standby, red fault
2	The control panel	Operation panel for machine operation
3	The door lock	Pull the handle door up with your hand to open it
4	The control panel	Leakage protector and safety control
5	Glass window	To observe the inner workings of the laboratory

2. Control panel



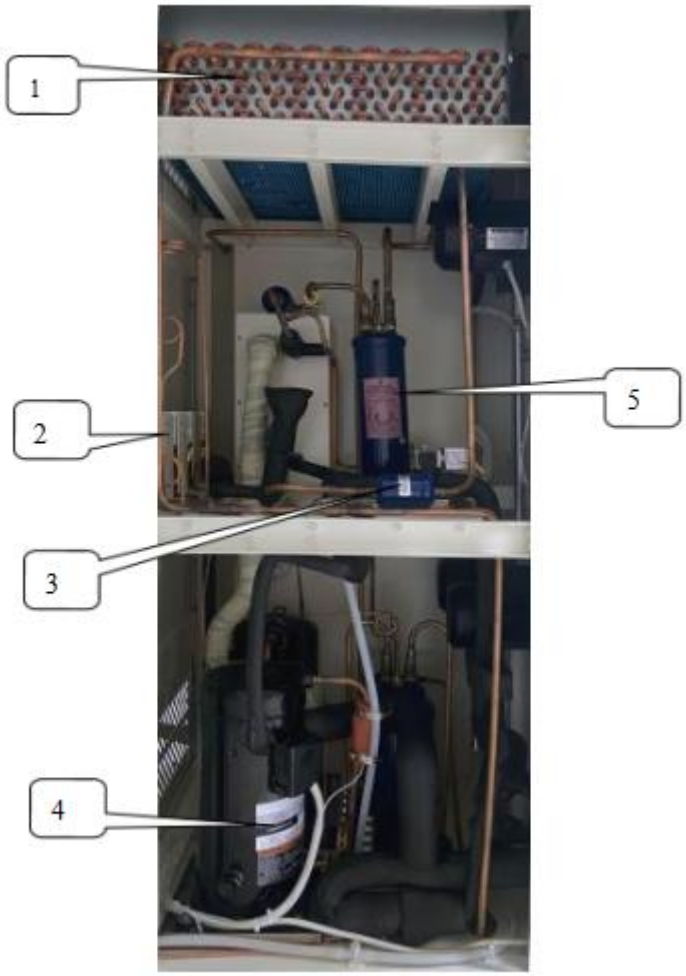
Number	Name	Illustration
1	Controller	Touch screen programmable controller (Refer to controller manual)
2	USB interface	Used to copy curves or document-related data
3	Scram switch	Used to connect the device and cut off the power supply

3. Test area



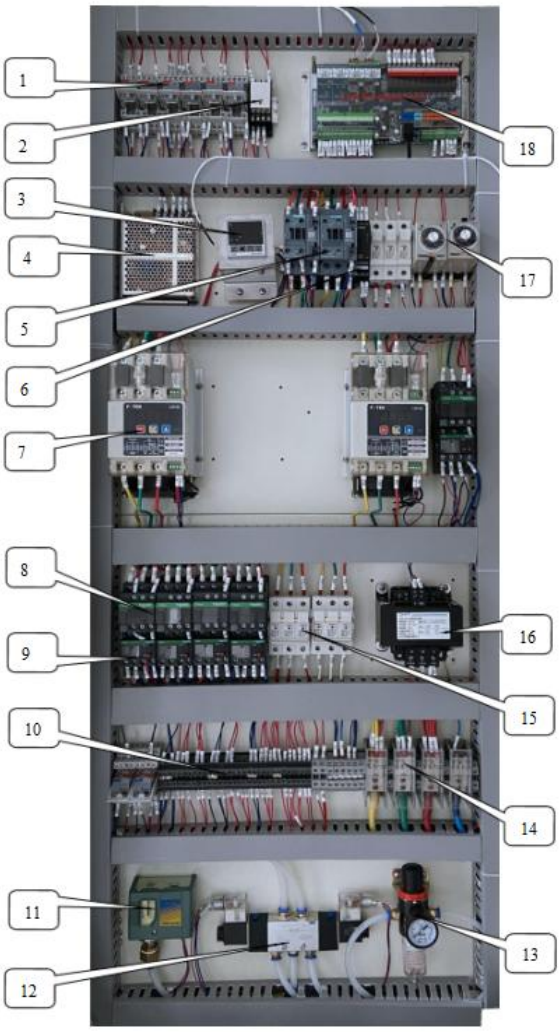
Number	Name	Illustration
1	Sealant	Heat preservation and air leakage prevention
2	Test hole	An external power supply can be plugged in from the test hole for live product testing
3	Sample rack track	Used to secure the sample holder
4	Sample holder	Used to place test products

4. The cooling machine room



Number	Name	Illustration
1	Condenser	Cool the refrigerant
2	Pressure protection controller	When the pressure in the pipeline is too high or too low, the controller will alarm
3	Filter dryer	Remove debris from the cooling system
4	Compressor	Compression refrigeration
5	Oil separator	Separate refrigerant and chilled oil

5. Power distribution room



1	Intermediate relay
2	Cold and hot valve relay
3	Temperature controller
4	Dc power supply
5	Ac contactor
6	Underinverting phase protector
7	Power regulator
8	Ac contactor
9	Thermal overload relay
10	Connector terminal
11	Pressure switch
12	Solenoid valve
13	Pressure regulating valve
14	One in six out terminals
15	Fuse
16	Transformer
17	Time relay
18	Temperature controller

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Test Report:

Temperature Sensor ℃	-40℃	-20℃	0℃	40℃	85℃	150℃
1	-38.9	-20.3	0.6	40.2	85.7	150.3
2	-39.2	-20.5	0.9	40.5	85.4	150.0
3	-39.5	-20.1	1.0	40.7	85.6	149.8
4	-39.7	-20.5	1.2	41.0	85.8	150.1
5	-39.9	-20.6	1.1	41.3	86.0	150.3
6	-40.0	-20.8	0.9	41.5	86.2	150.4
7	-40.3	-21.0	0.5	40.9	86.0	150.7
8	-40.7	-21.1	0.3	40.5	85.8	150.8
9	-40.1	-20.8	0.7	40.7	85.6	151.0
Temperature deviation	1.1	1.1	1.2	1.5	1.2	1.0
Temperature uniformity	1.8	1.0	0.9	1.3	0.8	1.2