
Three Zone Thermal Shock Test Chamber

Product Introduction:

Thermal Shock Test Chamber is used to test the bearing extent of the material structures and composite material in an instant and continuous high temperature and extremely low temperature environment, which is in the shortest time to test its thermal expansion and contraction caused by chemical change or physical harm.

The equipment is widely used in metal, plastic, rubber, electronics and other materials and it can be used as an important reference for improving product quality. It meets the standard of MTL, IEC, JIS, GJB...

Features:

1. Perfect appearance and easy to operate.
2. Japan LCD English microcomputer temperature controller, with high memory capacity, can save 100 programs, max 9999 cycles, each cycle max time 999hrs.
3. Three chamber structures, high temperature chamber, low temperature chamber and test chamber, control automatically, stay and switch time adjustable.
4. Perfect protection alarm functions: short-circuits, Leakage, over temperature of work chamber; compressor over pressure, over load, short water...
5. Control interface will display alarm reason and provide check methods, machine has emergency stop button.
6. Cold and hot shock temperature recover within 5 minutes, which complies with MTL, IEC, JIS, GJB and other international standards.
7. With RS-232C communication port for connecting PC to control, record and save test report.

Main parameters:

Test method	Pneumatic operated door switch 3 chambers
Inner dimension (W*D*H)	500*450*450mm
External dimension (W*D*H)	1380*1370*1980mm
Temperature range	-40 ~ +80℃
High temperature chamber pre-heating range	60 ~ 100℃
Heating speed	+60→+100℃ about 10 minutes
Low temperature chamber pre-cooling range	-65 ~ 0
Cooling speed	Ambient →-65℃ about 65 minutes
Temperature deviation	±3℃

Thermal recovery time	Within 5 minutes
External material	Antirust processing cold-rolled steel sheet
Internal material	SUS#304 stainless steel
Thermal insulation material	Polyurethane foam and fiberglass
Coolant	R404A / R23
Cooling method	Air cooling
Pressure	0.2 - 0.5Mpa
Power supply	Three phase, 380V, 50Hz

High temperature chamber:

Heater: NI-CR alloy electric heater

Draught fan: Share centrifugal fan when high temperature and do environmental temperature, preheating with axial flow fan.

Low temperature chamber:

Cooler: Fin cooler, regenerator

Draught fan: centrifugal fan

Drive device:

Pneumatic cylinder: Drive the air door of high, environmental, low temperature

Air compressor: Provide the compressed air for driving pneumatic door (supplied by buyer)

Refrigerating device:

Cooling method: mechanical compression refrigeration

Refrigeration compressor: Semi-closed piston

Refrigerant: R23/R404A

Condensation: Stainless steel welded plate heat exchanger

Controller:

Operate interface: 6" color LCD touch screen

Program memory capacity: 100 groups (modify by operator)

Setting range: Time: 1 minute ~ 99 hour 59 minute, cycles: 1~ 999 cycles

Resolution: temperature: 0.01 °C; time: 1 minute

Input: T thermocouple

Control method: P.I.D control

Additional functions:

Timer, over temperature and power failure protection, alarm, record test curve, emergency stop, display test time

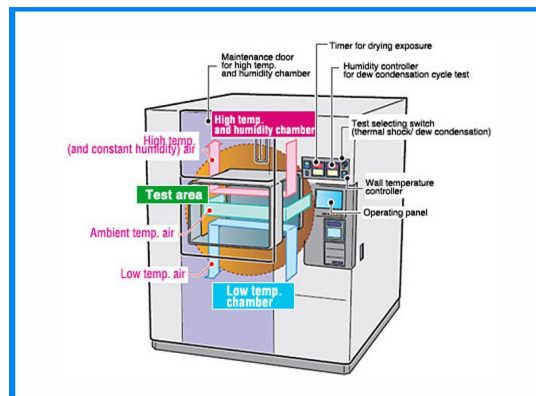
Circulated cooling water: pressure: 0.2~0.4MPa, temperature: ≤30℃

Standard configuration: indication lamp of test chamber, time meter, test hole for wire routing, 6pcs castor, 4pcs adjust wheel.

Safety devices:

Leakage and breaker, over temperature, low temperature protect device, exhaust valves, sample power control terminal, over temperature protection of high and low chamber, compressor over pressure, over heat protection, out of water relay, heat relay of fan, compressed air pressure switch, fuse, external alarm terminal

Chamber structure:



Working principle image:

