

# Lab Companion

▶ **Three-Zone Thermal Shock Test Chamber**

**TSU-80W**

**Custom Solution**

▶ **Brief Introduction**



This kind of test chamber consists of 3 zones: heat zone, cold zone and ambient zone. Three temperature zones can be simulated in the same chamber. This makes optimum stress conditions possible without having to move the test specimen.

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## Particularities:

\*One chamber for everything

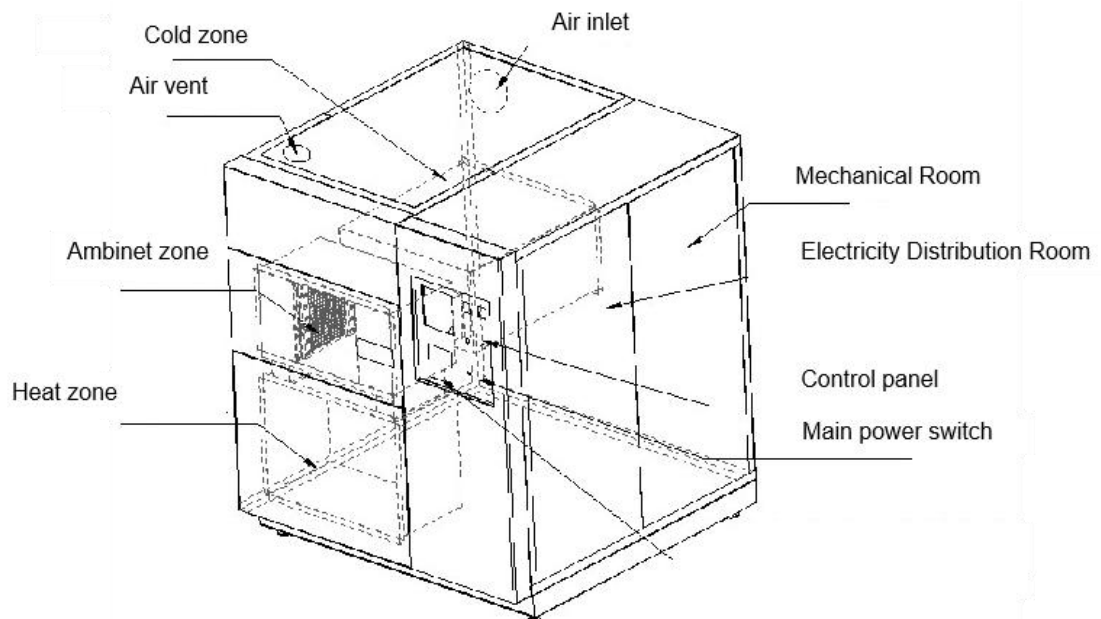
Using the damper shock method, 3 temperature zones (cold, hot, ambient) can be simulated in the same chamber. This makes optimum stress conditions possible without having to move the test specimen

\*Load test equipment easily

The basic version has an access port on the left with a 50 mm diameter for the placement of cables and connections. Movements of the loaded cables are avoided by the stationary test space.

\*Well distributed, efficiently tested

The test specimens can be distributed on up to seven insert grids, making an increased test throughput of up to 150 kg possible.



## Technical Features:

Dimensions (mm)	Width	Height	Depth
Useful	500	400	400
Overall	1501	1850	1870

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## **Temperature and humidity range:**

Test tank temperature range: -55°C~125°C.

Temperature setting range of high temperature tank: 60°C~200°C

Temperature setting range of low temperature tank: -70°C~RT°C.

High temperature tank heating time from RT (room temperature) to 200°C: ≤ 60/min

Low temperature tank Cooling time from RT (room temperature) to -70°C: ≤80min

Temperature stability: ±0.5°C.

Temperature uniformity: ±2.0°C.

Temperature recovery time from -55 to 125 ° C: ≤ 5min

High and low temperature exposure time: 30min

## **Standard conditions of use:**

Use environment temperature: 5~30°C

## **Other parameters:**

1. Controller model: Q8 color touch screen

2. Compressor model: ZF28KQE\*2

Refrigerant: R-404A/R23

3. Temperature electric heating (H) : 11.7KW

Temperature electric heating (L) : 9 KW

## **Power supply specifications:**

AC 220 V, 50/60 HZ, 1 φ 3 wire

## **Rated current:**

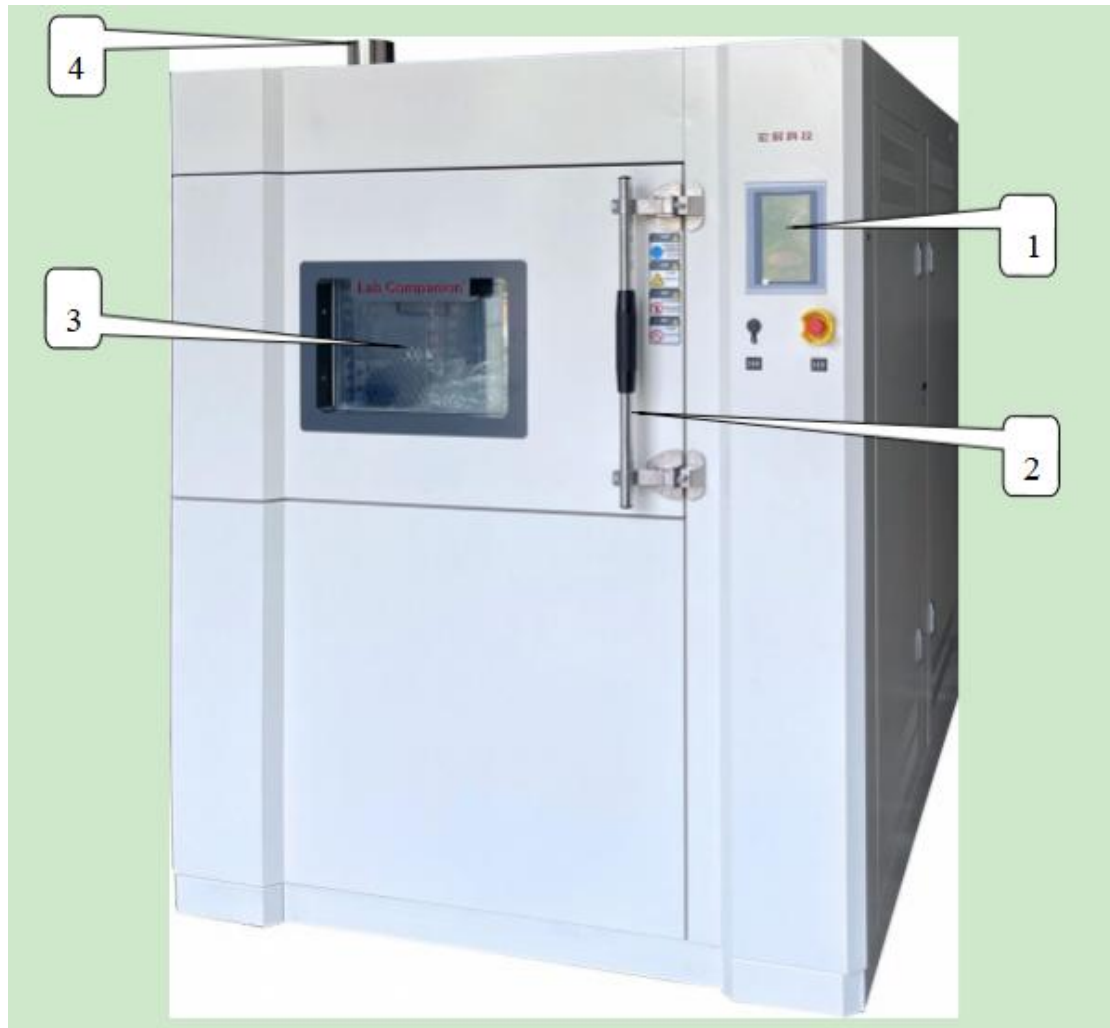
AC 5.5 A, power 1.2 KW

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	The control panel	Operation panel for machine operation
2	The door lock	Pull the handle door to the right to open it
3	Glass window	To observe the inner workings of the laboratory
4	Exhaust duct	To discharge the hot gas generated during the operation of the equipment

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## 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	Overtemperature setting (L)	Set the upper temperature limit in the low temperature zone
4	Overtemperature Setting (H)	Set the upper temperature limit in the high temperature zone
5	Scram switch	Used to connect the device and cut off the power supply

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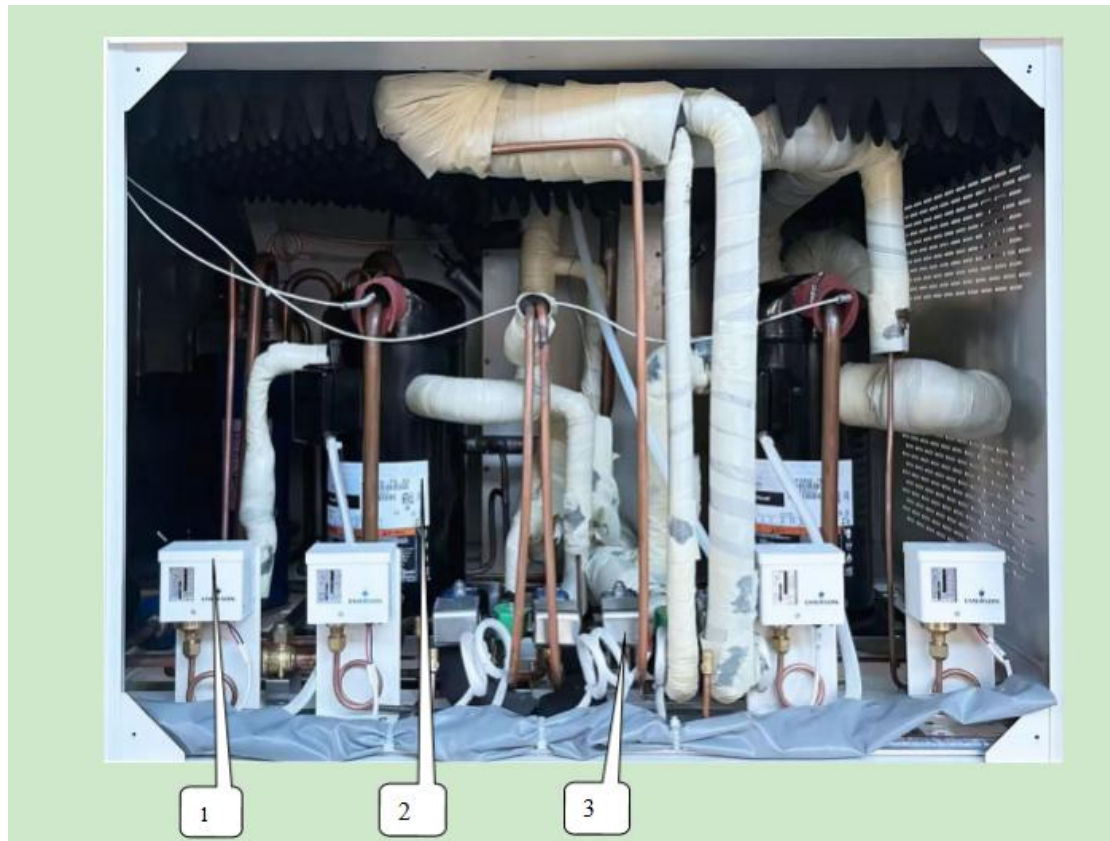
## 3. Test area



Number	Name	Illustration
1	sealant	Heat preservation and air leakage prevention
2	Air outlet	Test area circulates air outlet
3	Test hole	An external power supply can be plugged in from the test hole for live product testing
4	Sample holder	Used to place test products

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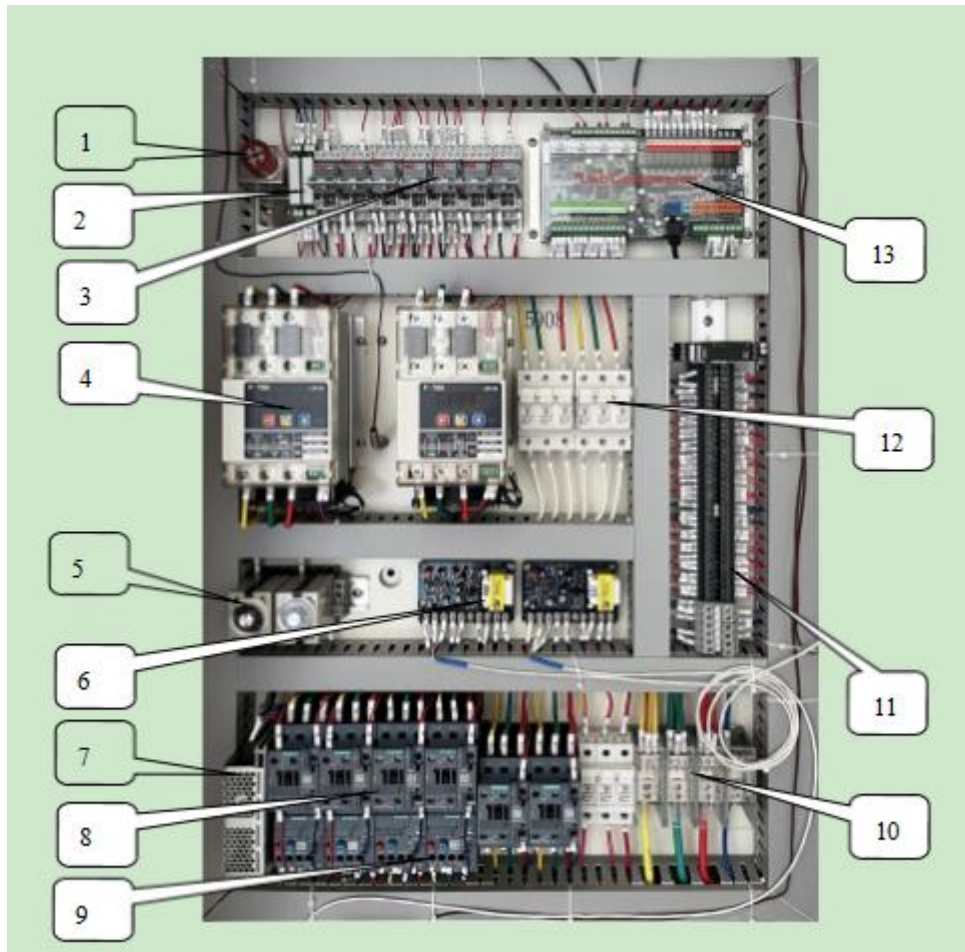
## 4. The cooling machine room



Number	Name	Illustration
1	Pressure protection controller	When the pressure in the pipeline is too high or too low, the controller will alarm
2	compressor	Compression refrigeration
3	Refrigeration solenoid valve	Used to control the flow of refrigerant in the pipeline

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## 5. Power distribution room



Number	Name	Number	Name
1	Buzzer	8	Ac contactor
2	Cold and hot valve solid state relay	9	Thermal overload relay
3	Intermediate relay	10	Terminals(One in six out)
4	Power regulator	11	Connector terminal
5	Time relay	12	Fuse
6	Overheated plate	13	Temperature controller
7	Dc power supply		



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## Test Report:

Temperature Sensor °C	-55°C	-20°C	0°C	40°C	85°C	125°C
<b>1</b>	-53.2	-19.7	0.5	40.7	85.3	123.8
<b>2</b>	-53.0	-20.3	0.8	41.0	85.0	124.0
<b>3</b>	-53.4	-20.0	1.0	40.5	85.4	124.3
<b>4</b>	-53.6	20.4	0.8	40.1	85.7	124.7
<b>5</b>	-53.8	20.7	0.5	40.3	86.0	125.0
<b>6</b>	-54.1	-20.3	0.1	40.5	86.2	124.9
<b>7</b>	-54.0	-20.5	0.6	40.1	86.0	125.1
<b>8</b>	-53.9	-20.1	0.8	39.9	85.8	125.3
<b>9</b>	-53.7	-19.8	1.0	40.3	85.4	125.5
Temperature deviation	2.0	0.7	1.0	1.0	1.2	0.5
Temperature uniformity	1.1	1.0	0.9	1.1	1.2	1.7