ESPEC Quality is more than a word


With increased modularization and digitization, more electronic parts are used on automobiles in various locations. However, these parts are constantly exposured to high temperatures due to the heat generated by the engine and gears, and the parts are rapidly cooled down by water splashes from the road and rainwater. The developed "Air to Liquid Thermal Shock Chamber" is ideal for reliability and endurance testing of electronic parts exposured to such rapid thermal shocks. The cold chamber adopts a water chamber to apply the specimen to rapid thermal shock. It is impossible to achieve with an air to air thermal shock chamber, thereby creating a thermal shock environment that is more similar to the actual environment.

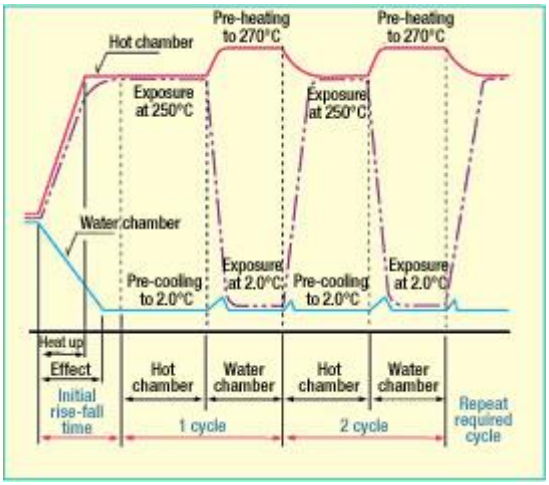
**Unique thermal shock system**

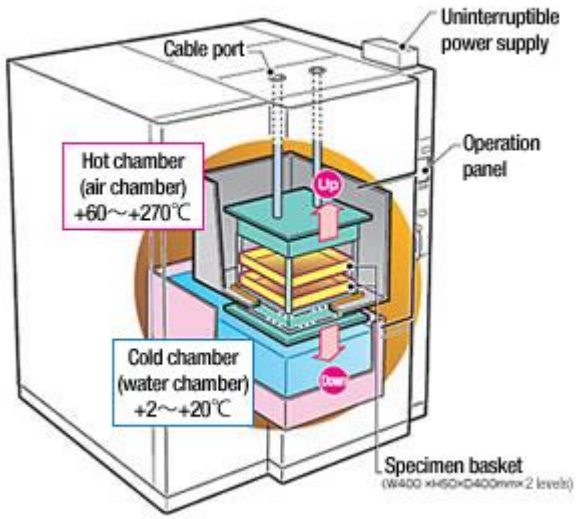
This unique thermal shock system uses different types of chambers for both the hot and cold chambers, an air chamber for the hot chamber and a water chamber for the cold chamber.

**Labor-saving thermal shock testing**

Conventional thermal shock tests using a water chamber were required manual operation into the water chamber. The specimen is transferred between chambers automatically; the testing can be performed simply by setting the program and reduces labor and time.

**Temperature profile (example)** **Device construction**




**Main specifications**

| | | | |
|---|---|---|---|
| Model | | | TSAB-50 |
| Power supply | | | 200 V AC, 3 ohm, 3W, 50/60 Hz<br>(Supporting any power supply voltage as an option)<br>(Power supply voltage fluctuation: ±10% of rated value) |
| Maximum load current | | | 200 V AC 58A |
| Method | | | Two-zone method by transferring specimen up and down |
| Performance*1 | Hot chamber | Temperature range | +60°C to +270°C |
| | | Control range | +60°C to +270°C |
| | | Temperature heat-up time | From ambient temperature to +270°C within 150 minutes |
| | | Temperature fluctuation width | ±0.5°C |
| | Water chamber*2 | Temperature range | +2°C to +20°C |

| | | | |
|---|---|---|---|
| | | Control range | +2°C to +20°C |
| | | Temperature heat-up time | From +20°C to +2°C within 150 minutes |
| | | Temperature fluctuation width | ±2°C (reference value) |
| | | Brine | Water and sewage (city water) only |
| Between chamber transfer time | | | Approx. 5 seconds (transfer between hot chamber and water chamber) |
| | | | Approx. 10 seconds (transfer between hot chamber and water chamber) |
| Dimensions, capacity, weight | Outside dimensions | | W1600×H1892×D1500mm |
| | Test area dimensions | | W400×H160×D400mm |
| | Test area load capacity | | 10kg |
| | Specimen basket dimensions | | W400×H50×D400mm×2 levels |
| | Weight | | Approx. 720 kg (not including weight of water) |
| | Water chamber (weight of water) | | Water supply rate 250 L = water and sewage (city water) |
| Controller | Setting method | | Interactive input using touch panel |
| | Display | | Backlit LCD panel (color TFT) |
| | Temperature input | | T thermocouple and K thermocouple (JIS C1602) |
| | Control method | | PID control |

| | |
|---|---|
| Other information | Emergency stop switch, specimen power supply control terminal, time signal, service plug socket, specimen transfer mechanism at power cut, drawing cycle counter (w/o resetting function) ×1, cycle counter (w/ reset function ) ×1, integrating hour meter, lamp (status display, fault indication) |

*1 Performance is without a specimen at an ambient temperature of +23°C.

*2 Indicates the performance of each individual chamber at a control point.

* The model is for operational purposes and may be changed after order. Thank you for your understanding.

## Recommended products for customers viewing this product

TSA Series Thermal Shock Chamber