



Essential element for performance and safety tests of secondary batteries

Battery Test Chamber / Chiller



Company Profile

About JEIO TECH

Welcome to JEIO TECH Co., Ltd.

We are a premier global technology company specializing in the development and manufacture of industrial laboratory equipment including environmental test chambers and battery safety testing equipment. Established in 1988, leveraging South Korea's vast legacy in technology, JEIO TECH serves a diverse set of industries including automotive, battery and energy storage systems, aerospace, communications, consumer and industrial electronics, etc. as well as at scientific and government research institutes.



Our Product Quality is Second to None

JEIO TECH products are put through rigorous quality control from the most basic metal processing to final inspections. Based on over 28 years of technical experience in instrument manufacturing, our highly integrated team of engineers strive to deliver outstanding quality to our clients. Our professional know-how is the basis of our reputation as the primary partner for the customers research needs across the globe.

Immaculate Service

We endeavor to enhance customer value through superior service to our customers. Our ergonomically designed products minimize maintenance and mechanical issues. Our worldwide service teams, made up of highly trained service engineers, are ready to provide you a tailored customer service experience.

Modernized One-stop Manufacturing System

All of our processes are systematically managed, with continued investment into manufacturing facilities ensuring quality and productivity.



01 Sheet metal fabrication

Primary fabrication of detailed parts using advanced automated machinery for the manufacturing of various products.



02 Painting

Painting to improve the corrosive resistance of fabricated parts using automated machinery to maintain stringent quality standards.



03 Assembly

Assembly of a wide range of products from compact to large-scale with all processes under direct operation, reliability ensured by long experience in manufacturing.



04 Testing

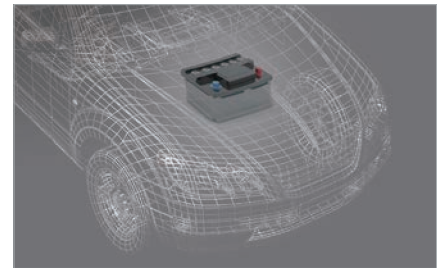
Tests performed to deliver promised quality and performance to our customers, with reliability and quality as our top priority.

Battery Test Chamber

Battery Testing Applications for EV

One of the most visible and exciting applications in the field of battery testing is electric vehicles. JEIO TECH products offer a comprehensive range of testing capabilities adhering to key international evaluation standards in performance and safety.

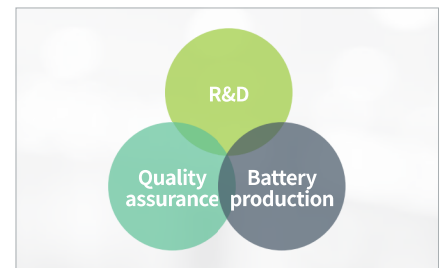
- Performance tests include cycle life, shelf life, temperature characteristics, and constant current load characteristics tests.
- Safety testing in both nominal as well as failure states (i.e., abuse situations) includes electrical, mechanical, and environmental testing, particularly in relation to temperature, continuous heat and gas generation (a.k.a. thermal runaway)



Battery drawing attention as an environment-friendly means of energy supply

Battery Test Chamber for Battery Performance and Safety Tests

JEIO TECH's battery test chambers can be used to perform various tests including temperature cycling tests, altitude tests, and heat resistance tests. These test chambers are applicable to R&D, quality assurance, and battery production. In addition, the chambers are suitable for performance and safety tests of batteries. They are equipped with separate safety devices to protect against ignition and explosion, which may occur during the testing processes.



Scope of applications of battery test chambers



TC-JT-446LS



TC-JT-6570L

Specification

Model	TC-JT-446LS	TC-JT-6570L
Chamber Volume	446L / 15.8 cu ft	6570L / 232.0 cu ft
Temperature Range	-10°C ~ 80°C	-50°C ~ 80°C
Air Flow	Vertical	Horizontal
Interior Dimension	750 x 700 x 850 mm / 29.5 x 27.6 x 33.5 inch	3000 x 1500 x 1500 mm / 118.1 x 59.1 x 59.1 inch
Exterior Dimension	1300 x 1350 x 1800 mm / 51.2 x 33.1 x 70.9 inch	3900 x 3100 x 2200 mm / 153.5 x 122.0 x 86.6 inch
Door Type	Single Door	Double Door
Cable Port	Φ80 mm / 3.15 inch x 1ea	Φ100 mm / 3.94 inch x 4ea
Safety Option	Signal Lamp, Vent Blast Door, Pressure Relief Exhaust Duct, Flame Sensor, Smoke Sensor, Fire Suppression System	

※ Custom-built chambers

Automatic Sensors for Preventing Fire During Charging



Smoke Sensor

The Smoke sensor is automatically activated to extinguish fire.



Flame Sensor

A flame is detected and automatically extinguished.



Automatic CO₂ Purge

The automatic fire extinguishing system (carbon dioxide spray) engages if abnormal temperature, smoke, or fire detected.



Automatic/Manual Spray Control

The CO₂ purge system triggered automatically or manually (internal or external).



Vent Blast Door

Upon explosion, ducts are automatically opened to relieve pressure and gas.



Gas Discharge Duct

After an explosion event, pressure and gas are automatically vented to the building's ventilation/scrubbing system.

Safety Devices for Protecting Users



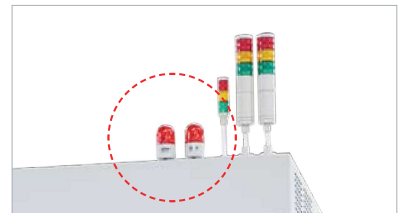
Window Cover

A cover for the inspection window is provided in the event of a fire or explosion.



Door Locking Mechanism

The door is locked during testing or after an event.



Automatic/Manual Spray Control

Audiovisual alarms are provided to check the operation of the fire extinguisher system.

Solid and Convenient Structure



Heavy Load Shelf Structure

Punched shelf made of insulative epoxy can bear a maximum load of 200 kg.



Fixable Caster

Casters make products easily movable and can support heavy loads.

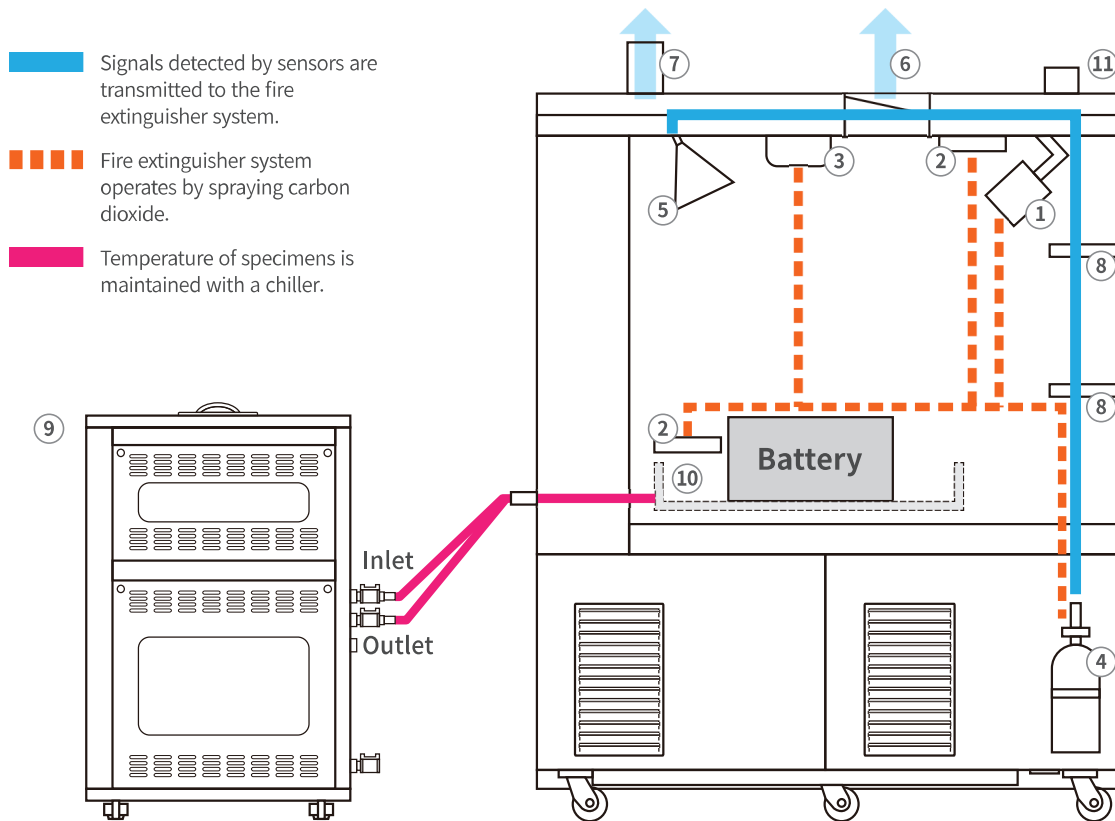


Ports with Easy External Connections

Additional cable ports of various sizes are available.

Battery Test Chamber Use Configuration

Signals detected by sensors are transmitted to fire extinguisher system. Fire extinguisher system operates by spraying carbon dioxide. Temperature of specimens is maintained through connection with a chiller.



- ① Flame Sensor: Detects infrared and ultraviolet rays and analyzes their wavelengths.
- ② Temperature Sensor: Detects if temperature of chamber and battery specimen is higher than setup temperature.
- ③ Smoke Sensor: Detects smoke manually or automatically.
- ④ CO₂ Fire Extinguisher System: Automatically operates when chamber temperature is higher than setup temperature, or when flame sensor or smoke sensor is activated.
- ⑤ Spray Nozzle: Nozzle to spray CO₂ from fire extinguisher system.
- ⑥ Vent Blast Door: Instantaneously opens to discharge pressure and gas.
- ⑦ Pressure Relief Exhaust Duct: Discharges pressure and gas after an explosion, through a duct connected to building's exhaust system.
- ⑧ Door Interlock Switch: Prevents door opening during test or after an event.
- ⑨ Chiller: Keeping the battery temperature (module and pack) low during a charge/discharge performance test.
- ⑩ Specimen tray: A tray for containing a battery specimen is provided, wherein the tray is connected to a chiller to keep the specimen temperature low.
- ⑪ Alarm: Audiovisual alarms are provided to notify the operation of the fire extinguisher system.

Chiller

Essential Elements for Keeping Battery Temperature Low

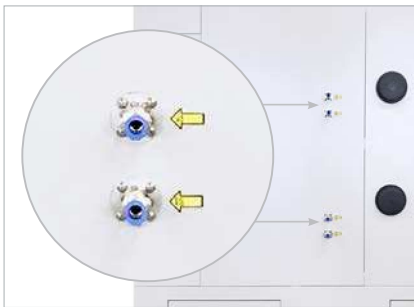
During a performance test, such as the shelf-life test or cycle life test, the battery temperature may become elevated due to repeated charge and discharge of the battery module or pack. A chiller is employed to keep the temperature of the battery constant during charge and discharge. The chiller can be used to monitor the inlet/outlet temperature, flow rate, and pressure.



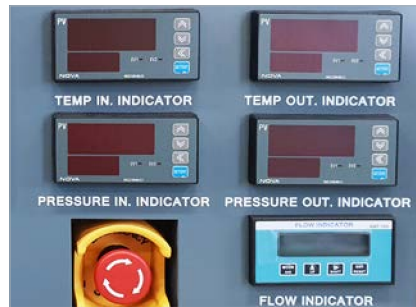
RW-2B-30L



RW-JT-80L



Line for connecting chiller with battery test chamber



Display showing temperature and pressure



Set and control temperature and flow rate

Specification

Model	RW-2B-30L	RW-JT-80L
Bath Capacity	30L / 1.06 cu ft x 2Bath	80L / 2.83 cu ft
Temperature Range	10 ~ 80°C / 50 ~ 176°F	-30 ~ 60°C / -22 ~ 140°F
Temperature Stability	±1.0°C / 1.8°F	±1.0°C / 1.8°F
Pump Flow rate (Max.)	20 L/min / 5.3 gal/min	20 L/min / 5.3 gal/min
Pump Pressure	3 ~ 5 bar / 43.5 ~ 72.5 psi	3 ~ 5 bar / 43.5 ~ 72.5 psi
Exterior Dimension	500 x 1942 x 1773 mm / 19.7 x 76.5 x 69.8 inch	800 x 1400 x 1800 mm / 31.5 x 55.1 x 70.9 inch

※ Custom-built chambers

Customized Product

Custom-Built Test Chambers (SP Division)

Conducting specialized consultation regarding customer requirements to provide the best designed solutions.



Our Valuable Customers

We accurately identify all key needs and requirements through close consultation with our customers.



Equipment design

Based on our long industry experience, we satisfy customer needs through superior design.



Thorough QC

We adhere to ISO 9001 production processes to ensure the high quality of our products.



On-site installation and training

We accurately identify all key needs and requirements through close consultation with our customers.

Examples of Delivery of Non-standard Products in Various Forms



Fireproof temperature test chamber



Explosion-proof temperature test chamber



Double-door chamber



Top-and-bottom dual chamber



Multistage drawer type oven



Tunnel type oven



Front-and rear double-door chamber



Sliding door chamber