Battery Heavy Material Impact Test Machine 6010C

1. Product usage

The test sample battery should be placed on one plane. A rod cross of 15.8mm diameter was placed in the central position of the sample. A 9.1 KG weight fell from the height of 610mm onto the sample. Each sample battery can only withstand one impact, and a different sample is used for each test. By testing the safety performance of the battery with different weight hammers and different force areas from the same height, conduct the test according to the regulations, the battery should not catch fire or explode.

2. Implementation standards

2.1 GB 31241-2014 Safety Requirements for Lithium-Ion Batteries and Battery Packs for Portable Electronic Products.

Standard requirements:

After fully charging the battery according to the specified test method, the battery was placed on the platform surface, the metal rod with a diameter of 15.8mm±0.2mm was placed horizontally on the upper surface of the geometric center of the battery, and the battery surface with the metal rod was struck from the high free fall state of 610mm ± 25mm by 9.1kg±0.1kg, and observed for 6h. It is required that the cylindrical battery vertical axis is parallel to the heavy surface, the metal rod and the battery vertical axis is vertical, and the square battery and flexible packaging battery only conduct the impact test on the wide surface. Run the metal rod across the center of the battery surface. One sample had only one impact test done.

Receiving criteria: the battery should not catch fire or explode.

2.2 SJ / T 11169-1998 (UL1642:1995) Safety Standard for Domestic and Commercial batteries.

Standard requirements:

A. The test sample battery was placed in a plane and a rod φ 7.9mm (5 / 16 in) was crossed at the center of the sample. A 9.1 Kg (20 lb) weight fell from a height of 610mm (2 ft) onto the sample.

B. A cylindrical or prism is to keep its vertical axis parallel to the plane and perpendicular to the center of the horizontal sample to withstand the longitudinal axis of the φ 7.9mm (5 / 16 inch) curved body. The prism battery is also rotated 90 degrees around its vertical axis so that both its wide and narrow sides can be impacted. Each sample battery bears only one shock. A different sample was used for each test.

C. A coin or button cell, to make the surface of the test sample parallel to the plane. And lay the φ 7.9mm (5 /

16 inch) curved body across the center of the battery.

Acceptance criteria: Samples should not explode or catch fire.

2.3 GB / T 18287-2013 General Specification for Lithium-ion Batteries for Cellular Telephone Use.

Standard requirements:

The battery is placed in one plane, and a φ15.8mm±0.2mm steel column is placed in the center of the battery, the vertical axis of the steel column is parallel to the plane, allowing 9.1kg±0.1kg weight to fall freely from 610mm ± 25mm to the steel column above the battery center, and observed for 6h. When the battery is subjected to the impact test, its vertical axis is parallel to the plane and perpendicular to the vertical axis of the steel column. Each battery can only undergo one impact test;

Receiving criteria: no fire, no explosion.

2.4 UN 38.3, Proposals on the Transport of Dangerous Goods-Testing and Standards Manual, Part III, Section 38.3

Standard requirements:

A. The sample battery or battery pack is placed on a flat surface. A φ15.8mm rod was placed horizontally in the center of the specimen. A 9.1 kg hammer fell from 610 ± 25mm onto the sample. The vertical axis of the cylindrical or prismatic battery to be impacted shall be parallel to the flat surface and perpendicular to the vertical axis of the curved φ15.8mm surface placed horizontally in the center of the specimen.

B. The prism battery must also rotate 90° around the longitudinal axis to keep both its wide and narrow sides under impact. Each sample was only subjected to one impact. Different specimens were used for each impact.

C. When a coin-shaped or button-shaped battery is impact, the plane of the specimen shall be parallel to the flat surface

The curved surface of the φ15.8mm is placed horizontally in its center.

Receive standard:

The battery and the component battery not exceeding 170℃ and no disintegration and no combustion within 6 hours after this test shall meet this requirement.

2.5 UL 1642 Lithium Battery Standard 2054 Domestic and Commercial Battery Set

Standard requirements:

A. The test sample battery was placed on the plane, a rod of φ15.8mm diameter was placed in the center of the sample, and the weight of 9.1 Kg fell from 610mm to the sample.

B. When a cylindrical or square battery is impacted, its long axis shall be parallel to the plane and perpendicular to the surface of the φ 15.8 diameter rod placed in the center of the specimen. The square battery shall be turned 90° along the long axis to withstand both the wide and narrow sides. Each sample

The battery suffered only one direction, and an independent test sample was used for each test.

C. The button battery plane is parallel to the plane, and the surface of φ15.8mm rods is in its center.

Receiving criteria: the sample shall not catch fire or explode.

2.6 QB / T 2502-2000 General Specification for Lithium-Ion Battery.

Standard requirements:

Under the condition of ambient temperature (20 ± 5) ℃, after charging the battery in accordance with the regulations, place the round steel rod of 7.9mm diameter and length of 70mm along the direction of the electrode face parallel to the battery and the upper terminal of the battery, and then drop a weight of 9.1 Kg object from the height 61cm from the rod to the rod (allowing the safety device inside the battery).

Receiving standard: the battery should not explode, do not catch fire.

2.7 GB / T 8897.4-2008 (IEC 60086-4:2007) Primary Battery-Part 4 Safety Requirements for Lithium Battery

Standard requirements:

Place the inspected single cell or cell battery on a plate, and a steel rod of a diameter of 15.8mm is placed horizontally in the center of the sample, so that a 9.1kg weight falls on the steel bar from the height of 61cm±2.5cm. For a cylindrical or rectangular battery, its vertical axis shall be parallel to the flat plate and perpendicular to the vertical axis of the steel rod placed in the center of the sample. The rectangular battery should also be rotated 90 degrees around its longitudinal axis to ensure that both wide and narrow sides withstand heavy impact. When the buckle battery suffers a heavy impact, its flat surface should be parallel to the flat plate, and the steel bar is placed horizontally in the center of the battery. Each single cell or cell is subjected to one weight impact. The examined samples were further observed for 6h.

Receiving standard: the battery should not be hot, explode or fire during the inspection and during the observation period of 6h.

2/8 GB / T 21966-2008 (IEC 62281:2004) Safety Requirements for Lithium Original Battery and Battery in Transportation

Place the inspected cell or cell on a plate and lay a diameter of 15.8mm in the center of the sample

The steel bar places a 9.1kg weight from 61cm±2.5cm height on the steel bar. For a cylindrical or rectangular battery, its vertical axis shall be parallel to the flat plate and perpendicular to the vertical axis of the steel rod placed in the center of the sample. The rectangular battery should also be rotated 90 degrees around its longitudinal axis to ensure that both wide and narrow sides withstand heavy impact. When the buckle battery suffers a heavy impact, its flat surface should be parallel to the flat plate, and the steel bar is placed horizontally in the center of the battery. Each single cell or cell is subjected to one weight impact. The examined samples were further observed for 6h.

Receiving standard: the battery should not be hot, explode or fire during the inspection and during the observation period of 6h.

3. Technical parameter

Fall ball weight	9.1kg±0.1kg (Optional option: 10kg)
Shock height	From 0 to 1000 mm is adjustable
Height display	By the controller display, accurate to 1mm
Height error	±5mm
Impact mode	Lift the drop ball to a certain height and release it, the drop ball falls freely in the vertical direction without tilting or shaking
Display mode	The PLC touch screen displays the parameter values
Horizontal bar diameter	15.8±0.2mm (5 / 8 inch) steel bar (vertically in the middle of the battery, heavy objects On the steel bar remains parallel to the bottom of the square battery)
Internal box material	Stainless steel plate, thickness 1.2mm, 1 / 3 with adhesive tape, high temperature resistance, Corrosion-proof insulation is easy to clean
External box material	Cold-rolled plate baking paint treatment, the thickness of 1.5mm
Air outlet	Located on the back of the box, φ150mm, external diameter exhaust air guide tube,

	convenient for external laboratory High power suction fan
Box door	Single door and double door, open toughened glass observation window, cold pull door lock, box door and silicone foam Forced tight bar
Pressure relief and explosion proof	At the back of the box, when the box causes the box due to abnormal working condition When the internal pressure increases sharply, or the short circuit of the structural battery explodes, resulting in too large pressure in the box When, the pressure relief port is automatically opened to relieve the destructive pressure in the box and reduce the pressure pair The impact of the box door is easy to open and restore with the pressure discharge port, and the seal is good
Gate lock	Gate switch, unable to test run when the test box door is open
Visual window	250×200mm (20mm thick tempered explosion-proof glass)
Test box area	600×500×1200mm (W×D×H)
Up and down the impact surface	Stainless steel sheet and plate
Lift way	Electric lift
outline dimension	750×800×1800mm (W×D×H)
Power supply	AC220V 50Hz 700W
Weight	250kg

Touch screen interface	
Apolegamy	1. Battery voltage and temperature data acquisition system. 2. Manual and automatic fire extinguishing function.

4. Configuration list

Order number	Accessories name	Model and quantity	Brand
1	controller	7-Inch touch screen	Taiwan Weilun Tong
2	Leakage switch	1 set	Zhejiang zhengtai
3	AC contactor	1set	Zhejiang zhengtai
4	auxiliary relay	1 set	Zhejiang zhengtai
5	Switching Mode Power Supply	1	Taiwan Ming wei
6	overtravel-limit switch	1 set	Taiwan heaven
7	any power-generating or power-driven machine	1	Schroder

5. Equipment delivery list

5.1 Instructions;

5.2 Delivery order;

5.3 One main test machine;

5.4 Qualification certificate, warranty certificate;

6. Use environment requirements

Specifications	Index requirements
Equipment use environment requirements	Temperature below 45 degrees, humidity below 80%
Power supply	AC220V，50/60Hz
Headwaters	not have
Vacuum	not have
Compressed air	not have
Ground requirements and load-bearing requirements	Concrete ground is ≥300 kg
Network requirements	not have
Smoke, dust, exhaust gas, Construction requirements for wastewater treatment plant	Waste gas exhaust interface exhaust gas exhaust interface φ150mm

7. Product appearance

Pictures are for reference only, please refer to the actual product.