KINTEK SOLUTION

Battery Test Fixture Catalog

Contact us for more catalogs of Laboratory Press Machine, Battery Lab Consumables & Materials, Battery Testing & Electrochemical Equipment, Electrode Fabrication Equipment, Cell Assembly & Filling Equipment, etc.

KINTEK SOLUTION

COMPANY PROFILE

>>> About Us

KINTEK Solution is a technology-driven innovator specializing in comprehensive laboratory equipment for battery R&D and advanced materials research. Our portfolio spans the entire cell fabrication workflow—from mixing, coating, and precision pressing (automatic, heated, isostatic) to cell assembly and testing. Also essential in ceramics and powder metallurgy, our systems prioritize precision, safety, and repeatability, empowering researchers and industrial labs to achieve groundbreaking results.

Polymer Battery Clamp Battery Test Clamp 3 To 5A Four Wire Cell Testing Fixture

Item Number: JA03

Introduction

Discover high precision polymer battery test clamps engineered for 3 to 5A cell evaluation featuring low contact resistance UL94V 0 flame resistance robust insulation and stable four wire measurement accuracy across demanding electrochemical testing environments.

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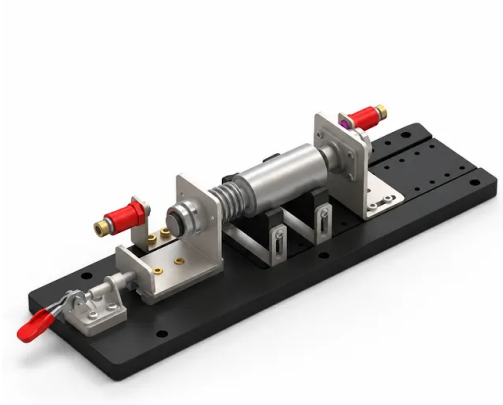
Application	Description	Key Benefit
Polymer Pouch Cell Cycling	Continuous charge-discharge characterization and Coulombic efficiency measurements on 3~5A lithium polymer cells.	Stable contact resistance eliminates measurement drift over thousands of continuous test cycles.
DCIR & Impedance Characterization	Direct current internal resistance (DCIR) and AC impedance spectroscopy on pouch-type energy storage cells.	High-conductivity interface prevents measurement distortion from parasitic fixture resistance.
Environmental Chamber Testing	Cell reliability, storage life, and rate capability testing inside extreme high/low-temperature climate chambers.	Thermally resilient polymer housing withstands temperatures from -55°C up to +155°C without material warping.
Factory Formation & Cell Grading	Mass production sorting, formation, and capacity verification across high-density multi-channel racks.	Consistent 20N clamping force accelerates manual cell loading while safeguarding delicate foil tabs.
Electrochemical Material R&D	Advanced evaluation of novel pouch cell chemistries, solid-state electrolytes, and high-energy cathode formulations.	Superior 500V DC dielectric isolation prevents micro-amperage signal leakage during precision analytical sweeps.
Quality Assurance & Tab Weld Verification	Pre-shipment electrical validation and weld integrity testing of ultrasonic or laser-welded pouch cell terminal tabs.	Ergonomic mechanical action and tight ±0.05 mm tolerances ensure repeatable, non-destructive contact.

Specification Parameter	Standard 3~5A Polymer Clamp (JA03)	High-Current Variant (JA03-6330-20)	High-Power Variant (JA03-6430-20)
Product Item Code	**JA03**	**JA03-6330-20**	**JA03-6430-20**
Rated Operating Current	3 ~ 5 A	≤ 25 A	≤ 40 A
Rated Operating Voltage	Low-Voltage DC	≤ 500 V	≤ 500 V
Operating Temperature Range	≤ 125 °C	-55 °C ~ +155 °C	-55 °C ~ +155 °C
Contact Resistance	≤ 25 mΩ	≤ 2 mΩ	≤ 2 mΩ
Insulation Resistance	≥ 1 × 10⁹ Ω (at 500 V DC)	≥ 1 × 10⁹ Ω (at 500 V DC)	≥ 1 × 10⁹ Ω (at 500 V DC)
Flame Retardancy Rating	UL94V-0	Self-extinguishing Engineering Grade	Self-extinguishing Engineering Grade
Housing & Structural Materials	Flame-Retardant Polymer	Polysulfone (PSU), Brass, Stainless Steel	Polysulfone (PSU), Brass, Stainless Steel
Surface Plating / Coating	High-Conductivity Surface	Nickel Plating (Ni 3 ~ 5 µm)	Nickel Plating (Ni 3 ~ 5 µm)
Clamping Force	Optimized Tab Grip	20 N	20 N
Mechanical Service Life	Extended Cycle Life	≥ 30,000 Cycles	≥ 30,000 Cycles
Operating Humidity Range	Ambient Laboratory	≤ 90% RH	≤ 90% RH
Dimensional Tolerance	Standard Precision	± 0.05 mm	± 0.05 mm

Specification Parameter	Standard 3~5A Polymer Clamp (JA03)	High-Current Variant (JA03-6330-20)	High-Power Variant (JA03-6430-20)
Measurement Units	Metric (mm)	Metric (mm)	Metric (mm)

Cylindrical Cell Toggle Clamp Test Fixture For Large Format Battery Testing

Item Number: JA11



Introduction

Engineered for high precision cylindrical battery cell testing this toggle clamp test fixture delivers ultra low contact resistance rapid manual clamping and accurate four wire Kelvin measurement under continuous one hundred ampere loads for battery research and production quality control

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Application	Description	Key Benefit
60140 Cylindrical Cell R&D	Precision electrochemical characterization of next-generation large-format cylindrical battery chemistries and structural designs.	Delivers true four-wire Kelvin voltage accuracy without fixture-induced measurement artifacts.
High-Rate Discharge & Fast-Charge Testing	High-current thermal and electrical performance evaluation under continuous 100A cycling protocols.	Maintains low thermal rise (< 15°C) to safeguard electrochemical integrity and thermal data validity.
Direct Current Internal Resistance (DCIR) Screening	High-throughput pulse power and internal resistance benchmarking across batches of fabricated cells.	Stable sub-0.2 mΩ fixture resistance guarantees repeatable cell-to-cell sorting resolution.
Cell Formation and Pre-Grading	End-of-line quality verification and capacity sorting in pilot manufacturing lines and prototyping facilities.	Rapid toggle clamp engagement accelerates manual loading and unloading cycle times.
Electrochemical Impedance Spectroscopy (EIS)	Broad-frequency impedance characterization under pre-stressed mechanical clamping conditions.	Independent spring-loaded voltage probes isolate contact impedance from bulk cell response.
Accelerated Cycle Life and Degradation Studies	Long-duration continuous cycling testing under varying environmental chamber temperatures.	Heavy gold-plated beryllium copper contacts resist contact degradation and thermal oxidation.

Specification Parameter	Technical Detail / Value
Product Item Number	JA11
Target Cell Form Factor	60140 Cylindrical Cell
Cell Terminal / Pole Diameter Compatibility	8 mm (Flat, smooth terminal surfaces)
Clamping Mechanism	Manual Industrial Toggle Clamp (□□□□)
Kinematic Architecture	One fixed current pin end, one movable current pin end
Continuous Testing Current	100 A
Total Fixture Internal Resistance	< 0.2 mΩ
Operating Temperature Rise	< 15 °C at 100 A continuous load
Current Probe Diameter	> 12 mm
Current Probe Material	Phosphor Bronze / Beryllium Copper
Current Probe Contact Spring Force	> 4 kg (> 40 N) at 5 mm compression
Current Probe Surface Plating	Gold plating > 4 mil (□□□ 4□)
Voltage Probe Diameter	< 2 mm

Specification Parameter	Technical Detail / Value
Voltage Probe Material	Phosphor Bronze
Voltage Probe Contact Spring Force	200 g (approx. 2 N) at 2 mm compression
Power Cable Connection Interface	M10 Threaded Stud / Terminal Lug
Structural Material Composition	High-strength dielectric insulation composite + precision machined metal hardware
Cell Positioning Mechanism	Integrated center alignment block (□□□□□□)
Base Mounting Method	Direct benchtop screw fixation

Coin Cell Battery Holder Clip Test Fixture

Item Number: JA02

Introduction

Engineered for precision electrochemical analysis, this coin cell battery clip delivers ultra-low contact resistance, exceptional thermal endurance from -55°C to +125°C, UL94V-0 flame retardance, and robust current capacity up to 10A across extensive cycling workflows.

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Application	Description	Key Benefit
High-Rate Battery Cycling & C-Rate Testing	High-current evaluation of prototype coin cells subjected to aggressive fast-charging and dynamic pulsed discharge profiles.	Handles steady-state 5A and transient 10A currents without resistive heating or signal loss.
Temperature-Dependent Electrochemical Profiling	Sub-zero and elevated-temperature electrochemical analysis conducted inside thermal and environmental chambers.	Broad -55°C to +125°C thermal tolerance guarantees stable physical clamping without mechanical warping.
Electrochemical Impedance Spectroscopy (EIS)	Precision high-frequency and low-frequency impedance measurements requiring absolute baseline electrical stability.	Sub-milliohm (≤1mΩ) contact resistance prevents baseline distortion and ensures accurate interfacial charge-transfer readings.
Long-Term Formation & Degradation Studies	Multi-channel, continuous multi-month retention and capacity fade monitoring for novel electrode and electrolyte formulations.	Extended mechanical durability (20,000–50,000 cycles) delivers multi-year test repeatability without contact drift.
Solid-State & Lithium-Metal Cell Characterization	Testing pressure-sensitive advanced solid-state and lithium-metal coin cell architectures requiring uniform contact interfaces.	Consistent clamping mechanics prevent localized stress concentration and preserve internal cell layer contact.
Quality Assurance & Industrial Cell Screening	High-throughput incoming inspection and batch screening of commercially produced button and coin cells in pilot-line facilities.	Rapid cell insertion and removal with heavy-duty wear resistance accelerates routine QA/QC throughput.

Parameter	Specification (JA02)
Product Item Number	JA02
Housing Color	Grey
Operating Temperature Range	-55°C to +125°C
Continuous Current Rating (Steady State)	≤ 5 A
Peak Current Rating (Transient)	≤ 10 A
Contact Resistance	≤ 1 mΩ
Insulation Resistance	500V DC ≤ 1×10^{9} Ω
Mechanical Service Life	20,000 to 50,000 cycles
Flame Retardant Classification	UL94V-0

High Current Polymer Battery Test Fixture For Pouch Cell Electrical Testing

Item Number: JA07

Introduction

Engineered for high current testing up to 350A and 500V this polymer battery test fixture ensures minimal contact resistance and superior thermal stability across extreme temperatures from minus 55 to positive 155 degrees Celsius.

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Application	Description	Key Benefit
High-Rate Polymer Battery Formation	Rapid charging and electrochemical activation of pouch cells during pre-assembly and pilot production.	Handles sustained currents up to 350A without thermal degradation or tab burning.
EV Pouch Cell Cycle Life Validation	Long-duration charge-discharge endurance testing under continuous automated cycling protocols.	Ultra-low contact resistance (≤5mΩ) guarantees measurement accuracy over 10,000+ hours.
Extreme Environmental Chamber Testing	Thermal stress analysis and cold cranking characterization inside environmental test chambers.	Operates reliably across wide temperature variations from -55°C to 155°C and up to 90% RH.
Fast-Charging Protocol Research	Laboratory investigation of extreme fast charging (XFC) parameters on advanced lithium polymer cells.	Stable voltage handling up to 500V with high dielectric isolation prevents cross-channel interference.
High-Throughput Quality Assurance	End-of-line quality screening, internal resistance sorting, and capacity grading in battery pack assembly.	Robust mechanical durability exceeding 30,000 cycles reduces maintenance frequency.
Aerospace & Defense Power Testing	Rigorous validation of lightweight polymer batteries subjected to demanding thermal and electrical stresses.	Polysulfone and stainless steel structure provides superior mechanical stability and safety.

Parameter	Specification (JA07)
Product Item Number	JA07
Maximum Operating Current	≤ 350 A
Maximum Operating Voltage	≤ 500 V
Operating Temperature Range	-55°C to 155°C
Housing / Body Materials	Polysulfone (PSU), Brass, Stainless Steel
Surface Plating	Nickel (Ni), 3 nm to 5 nm
Contact Resistance	≤ 5 mΩ
Insulation Resistance	≥ 1 × 10^9 Ω (tested at 500 VDC)
Operating Humidity Range	≤ 90% RH
Mechanical Durability	≥ 30,000 cycles
Continuous Service Life	≥ 10,000 hours
Dimensional Units & Tolerances	Metric (mm), ±0.05 mm

Polymer Battery Pressure Test Fixture For Pouch Cell Clamping And Cycling Analysis

Item Number: JA10

Introduction

Engineered for precision battery research this polymer battery pressure test fixture delivers uniform mechanical compression from 0 to 3000 N featuring durable 8 mm aluminum plates resilient silicone cushioning pads and precision springs to stabilize pouch cell cycling performance.

Learn More

Application	Description	Key Benefit
Pouch Cell Cycling Life Evaluation	Continuous mechanical restraint applied during long-term galvanostatic charge-discharge cycling in temperature chambers.	Prevents interlayer delamination and maintains intimate electrode-separator contact to extend cycle life.
Solid-State Battery Interface Testing	High-pressure mechanical compression applied to solid electrolyte-electrode interfaces during electrochemical evaluation.	Overcomes high solid-solid interfacial resistance by maintaining up to 3000 N of continuous intimate contact.
Electrode Swelling and Dilatometry Studies	Constrained volume testing to study mechanical expansion forces generated by silicon-anode and high-nickel cathode volume changes.	Accurately models real-world module constraints to evaluate binder integrity and active material degradation.
Electrochemical Impedance Spectroscopy (EIS)	Stable compression during high-frequency impedance sweeps under varying states of charge (SOC) and physical loads.	Eliminates contact resistance artifacts, isolating pure charge-transfer and solid-electrolyte interphase (SEI) kinetics.
Fast-Charging Lithium Plating Analysis	Application of uniform stack pressure during high C-rate charging protocols to evaluate lithium dendrite suppression.	Suppresses localized current density hot spots, providing uniform ionic flux and reducing short-circuit risks.
Post-Mortem Pouch Cell Autopsy Preparation	Safe, controlled mechanical containment during cell resting, degassing, and preparation before glovebox teardown.	Preserves the layered architecture under standard physical dimensions prior to physical cross-sectioning.

Specification Parameter	Technical Data (JA10)
Product Identification	JA10
Maximum Pouch Cell Dimensions	90 mm (L) × 82 mm (W)
Maximum Clamping Load	3000 N
Operating Pressure Range	0 N to 3000 N
Fixture Plate Material	High-Strength Aluminum Alloy
Fixture Plate Thickness	8.0 mm
Overall Fixture Dimensions	90 mm (W) × 110 mm (L)

Component Description	Dimensions / Specifications	Quantity Included
Rectangular Compression Springs	Outer Diameter: 14 mm	4 pcs
Hexagon Socket Fastener Screws	M6 × 60 mm (L)	4 pcs
Precision Hexagon Fastener Nuts	M6 Standard	4 pcs
Dielectric Card Stock Liners	90 mm × 84 mm × 0.25 mm (T)	2 pcs

Component Description	Dimensions / Specifications	Quantity Included
Elastomeric Silicone Cushions	90 mm × 84 mm × 2.0 mm (T)	2 pcs

Step Number	Process Stage	Procedural Instructions
Step 1	Safety Disconnection	Isolate and turn off all electrical test leads and power supplies connected to the battery cell.
Step 2	Fastener Release	Loosen the four M6 hexagonal securing screws evenly in a cross-diagonal pattern.
Step 3	Top Plate Removal	Lift and remove the 8 mm aluminum upper fixture plate along with the top spring set.
Step 4	Cell Positioning	Center the pouch cell between the silicone damping pads and insulation paper liners on the base plate.
Step 5	Reassembly & Pre-load	Replace the upper aluminum plate and pre-tighten the M6 screws to the targeted experimental torque.

Pouch Cell Battery Test Fixture High Current Clamp For Laboratory And Production Testing

Item Number: JA08

Introduction

Engineered for high-current battery R&D, this pouch cell battery test fixture supports up to 100A and operating temperatures up to 125°C. Featuring ultra-low contact resistance and UL94 V-0 flame retardancy, it delivers precise, reliable, and repeatable electrochemical testing data.

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Application	Description	Key Benefit
High-Rate C-Rate Cycling	Subjecting automotive-grade pouch cells to high-current charge and discharge cycles (up to 100A) to assess rate capability and power density.	Prevents artificial voltage drops and excessive contact heating, ensuring true cell performance metrics.
Environmental Chamber Testing	Performing electrochemical evaluations inside climatic chambers at elevated temperatures up to 125°C for accelerated aging studies.	Maintains structural and electrical stability without polymer warping or contact degradation under continuous thermal stress.
Battery Tab Welding Quality Inspection	Conducting quality assurance testing on ultrasonic or laser-welded pouch cell tabs in pilot and production lines.	Uniform clamping pressure ensures consistent baseline contact resistance for accurate joint qualification.
Electrochemical Impedance Spectroscopy (EIS)	Measuring pouch cell internal impedance, charge transfer resistance, and solid electrolyte interphase (SEI) growth across frequencies.	Ultra-low contact resistance and high dielectric isolation eliminate baseline noise and parasitic inductance.
Thermal Runaway and Abuse Testing	Monitoring electrical behavior during forced overcharge, external short-circuiting, or high-temperature abuse protocols.	UL94 V-0 flame-retardant construction prevents fixture combustion and enhances lab safety during extreme cell failure events.
Formation and Grading Lines	Integrating into pilot-scale formation, grading, and capacity sorting racks for continuous production batch qualification.	Durable construction ensures long service life with minimal maintenance over repeated daily clamping cycles.
Solid-State Pouch Cell R&D	Testing next-generation solid-state and lithium-metal pouch cells requiring precise electrical interfaces and moderate thermal stimulation.	Delivers consistent mechanical clamping force without damaging fragile thin-film tabs or sensitive current collectors.

Specification Parameter	Technical Data	Standard / Condition
Product Identifier	JA08	KINTEK Standard Designation
Maximum Operating Current	≤ 100 A	Continuous DC / Pulse Load
Maximum Operating Temperature	≤ 125 °C	Continuous Chamber Environment
Contact Resistance	≤ 25 mΩ	Calibrated Tab Interface
Insulation Resistance	≥ 1 × 10^9 Ω (1 GΩ)	Tested at 500 V DC
Flame Retardancy Rating	UL94 V-0	Self-extinguishing Material Standard
Connection Architecture	4-Wire Kelvin Configuration	Dual Separate Current & Voltage Terminals
Compatible Cell Chemistry	Li-ion, Na-ion, Solid-State, Li-Sulfur	Pouch / Polymer Format

Eight Channel Coin Cell Testing Fixture For Laboratory Battery Performance Analysis

Item Number: JA01

Introduction

Optimize battery testing workflows with this eight channel coin cell testing fixture. Featuring instant polarity verification and chemical resistant polypropylene housing, this fixture ensures reliable, high throughput performance analysis for coin cells up to 25mm diameter.

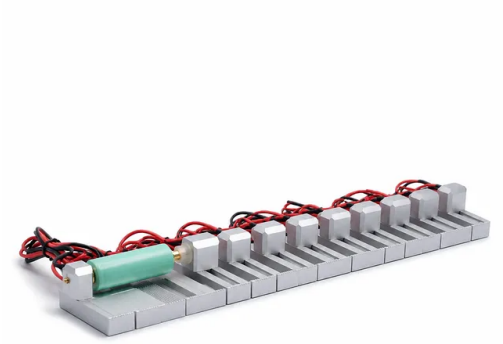
Learn More

Application	Description	Key Benefit
Cathode & Anode Material Screening	Rapid electrochemical cycling and rate-capability evaluation of novel active material formulations across multiple coin cells simultaneously.	Eliminates testing bottlenecks by enabling parallel screening under identical environmental and cycling parameters.
Solid-State Electrolyte Research	Galvanostatic and potentiostatic cycling of solid-state or gel polymer coin-type test cells to observe interface kinetics and stability.	Provides stable, uniform contact pressure crucial for minimizing interfacial impedance variability across samples.
Battery Quality Assurance & Batch Testing	Standardized quality control testing of commercial coin cells (CR2016, CR2032, CR2450) prior to device integration or mass shipment.	Instant pre-test polarity and charge verification reduces operator loading errors and protects analyzer channels.
Long-Term Cycle Life & Degradation Studies	Continuous multi-week charge-discharge cycling to map capacity retention, coulombic efficiency, and degradation mechanisms.	High chemical resistance to electrolyte outgassing ensures uninterrupted electrical continuity over extended operational durations.
Electrochemical Impedance Spectroscopy (EIS)	Interfacial impedance and internal resistance profiling of assembled coin cells at various states of charge (SOC).	Low internal contact resistance and excellent channel-to-channel isolation ensure high-fidelity signal acquisition.
Supercapacitor & Hybrid Cell Testing	High-rate charge and discharge characterization of coin-type asymmetric supercapacitors and hybrid energy storage devices.	Robust contact points handle elevated current densities without localized thermal build-up or voltage drop distortions.

Specification Parameter	Value / Detail
Product Item Number	JA01
Channel Capacity	1 to 8 Channels (Independently Configured)
Compatible Cell Diameter	Up to 25 mm Maximum
Compatible Standard Form Factors	CR2016, CR2032, CR2325, CR2450, and custom cells (≤ 25 mm)
Structural Housing Material	High-Grade Industrial Polypropylene (PP)
Diagnostic Functionality	Non-latching push buttons for polarity check and charge detection
Overall Dimensions (L × W × H)	230 mm × 80 mm × 32 mm
Operating Interface	Universal connection leads for standard battery analyzers and cyclers
Chemical Resistance	Highly resistant to standard organic solvents and battery electrolytes
Mounting Configuration	Benchtop horizontal layout; glovebox and dry room compatible

Extended Four Wire Cnc Aluminum Battery Test Fixture Holder Dual Self Locking 60A

Item Number: JA05



Introduction

Engineered for high current electrochemical analysis, this extended CNC aluminum four wire battery fixture features dual self locking mechanics, zero screw adjustment, and 60A continuous rating to eliminate contact resistance during precision cylindrical cell testing across demanding battery research environments.

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Application	Description	Key Benefit
High-Rate Cell Formation & Grading	Continuous high-current charge and discharge cycling (up to 60A) for sorting and binning cylindrical battery cells.	Minimizes thermal rise and prevents false contact-voltage drops, ensuring consistent capacity grading across large cell batches.
DC Internal Resistance (DCIR) Testing	Milliohm and microohm internal resistance profiling via pulsed current excitation at variable state-of-charge levels.	True 4-wire Kelvin terminal contacts eliminate lead-wire resistance, delivering laboratory-grade DCIR measurement repeatability.
Electrochemical Impedance Spectroscopy (EIS)	Wide-frequency AC impedance characterization of advanced anode/cathode materials and electrolyte formulations.	Ultra-low parasitic fixture inductance and noise-free contact interfaces preserve high-frequency impedance response fidelity.
Temperature Chamber Thermal Characterization	High- and low-temperature performance profiling inside environmental test chambers across -40°C to +80°C ranges.	CNC aluminum structural stability avoids thermal warping or loss of contact pressure common in conventional plastic fixtures.
Next-Generation Large Format Cell R&D	Testing large-diameter and extended-length cylindrical prototypes (e.g., 4680, 32140, extended custom lengths up to 118mm).	Extended clamping envelope handles high-capacity next-generation cells without requiring custom fabrication or fixture modification.
Production Line QA/QC Incoming Inspection	Rapid verification of incoming raw cells and vendor batches prior to module pack assembly.	Tool-less dual self-locking carriage accelerates cell swap cycles to under three seconds, significantly enhancing inspection throughput.

Parameter	Specification (JA05-Standard)	Specification (JA05-Extended)
Product Item Number	JA05-STD	JA05-EXT
Structural Material	CNC Machined Aluminum Alloy	CNC Machined Aluminum Alloy
Electrode Configuration	4-Wire True Kelvin Connection	4-Wire True Kelvin Connection
Maximum Rated Current	60 A continuous	60 A continuous
Clamping Mechanism	Tool-Free Dual Self-Locking (Front/Rear, Up/Down)	Tool-Free Dual Self-Locking (Front/Rear, Up/Down)
Fixture Dimensions (L × W × H)	137 mm × 24 mm × 44 mm	172 mm × 30 mm × 45 mm
Finished Product Weight	200 g	200 g
Maximum Compatible Cell Length	Up to 75 mm	Up to 118 mm
Maximum Compatible Cell Diameter	Up to 35 mm (Supports No. 1 / D-size cells)	Up to 35 mm (Supports No. 1 / D-size cells)
Supported Standard Cell Form Factors	18650, 21700, 26650, 32650, D-Size	18650, 21700, 26650, 32650, 32140, 4680, Extended Cells
Fastener Requirements	Zero screw locking required for slide action	Zero screw locking required for slide action

Aluminum Alloy Plate Pouch Cell Pressurization Fixture For Lithium Ion And Lithium Sulfur Battery Cycle Testing

Item Number: JA06

Introduction

Engineered for high precision pouch cell research this aluminum alloy pressure fixture delivers uniform mechanical compression for lithium ion and lithium sulfur battery cycle testing preventing electrode delamination and stabilizing interfacial impedance throughout demanding electrochemical evaluations.

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Application	Description	Key Benefit
Lithium-Sulfur (Li-S) Cycle Testing	Applying continuous, uniform stack pressure to manage severe cathode volume expansion (up to 80%) and maintain electrical contact with conductive carbon matrices.	Mitigates the polysulfide shuttle effect, prevents active mass detachment, and dramatically improves capacity retention over extended cycling.
High-Nickel NMC / NCA Pouch Testing	Maintaining inter-particle and inter-layer contact in high-energy-density lithium-ion pouch cells subjected to aggressive fast-charging protocols.	Suppresses mechanical micro-cracking and impedance rise caused by anisotropic lattice breathing during continuous lithiation/delithiation.
Silicon-Anode Pouch Cell Research	Mitigating severe structural strain and volumetric breathing in silicon-dominant and silicon-graphite composite negative electrodes.	Preserves SEI layer integrity and avoids particle pulverization by providing external mechanical confinement.
Solid-State Battery (SSB) Interface Studies	Delivering essential interfacial pressure to solid-electrolyte / lithium-metal interfaces to overcome high solid-state contact resistance.	Lowers charge transfer resistance across solid-solid boundaries and deters lithium dendrite growth along electrolyte grain boundaries.
In-Situ Electrochemical Impedance Spectroscopy (EIS)	Holding pouch cells under calibrated mechanical loads while conducting multi-frequency impedance and potentiostatic measurements.	Eliminates artifactual resistance shifts caused by fluctuating mechanical contact during extended potentiostatic or galvanostatic testing.
Pressure-Dependent Aging Diagnostics	Evaluating the degradation pathways, gassing behavior, and lifecycle boundaries of pouch cells across varied external compression levels.	Establishes critical operational pressure envelopes required for module-level and pack-level mechanical constraint design.

Parameter	Specification (Item No. JA06)
Product Item Number	JA06
Equipment Type	Pouch Cell Pressurization & Cycling Fixture
Overall Fixture Dimension (W × L × H)	120 mm × 160 mm × 90 mm
Compression Plate Material	High-Strength Aluminum Alloy
Aluminum Plate Dimensions (W × L × T)	120 mm × 160 mm × 8 mm
Plate Surface Finish	Precision Planar Ground & Anodized
Compliant Cushion Material	Elastic Laboratory-Grade Silicone
Silicone Pad Dimensions (W × L)	120 mm × 130 mm
Interfacial Buffer Material	High-Density White Cardboard
White Cardboard Dimensions (W × L)	120 mm × 130 mm
Primary Fastening Hardware	High-Tensile Steel Guide Fasteners & Threaded Clamping Posts

Parameter	Specification (Item No. JA06)
Compatibility	Lithium-Ion, Lithium-Sulfur, Sodium-Ion, Solid-State Pouch Cells
Environmental Working Range	Suitable for gloveboxes, ambient benches, and climatic chambers (-40°C to +85°C)

Prismatic Battery Fixture For Same Side Terminals High Current Cell Testing

Item Number: JA09

Introduction

Engineered for high-precision prismatic cell testing, this robust battery fixture accommodates same-side terminals with up to 300A current capacity. Featuring an 8-channel single-sided rack layout, adjustable pole spacing, and durable M16 connections, it ensures dependable laboratory cycling performance.

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Application	Description	Key Benefit
EV Battery Cell Validation	High-rate cycling and thermal characterization of commercial and prototype prismatic traction battery cells under simulated driving profiles.	Handles high continuous current loads up to 300A with minimal contact heating, ensuring realistic dynamic stress testing.
Energy Storage System (ESS) Cell Grading	Precision capacity determination, internal resistance (DCIR) measurement, and consistency screening for large-capacity stationary storage cells.	High channel-to-channel contact repeatability ensures accurate classification and tight capacity grouping for pack assembly.
Formation and Aging Systems	Multi-channel pre-charge, formation, and high-temperature aging protocols during advanced pilot-line manufacturing and formulation testing.	Two-tier compact footprint maximizes testing density per square meter while offering effortless cell insertion and extraction.
Solid-State & Next-Gen Chemistry R&D	Precision electrochemical testing of advanced prismatic prototypes with novel same-side terminal topologies and variable casing dimensions.	Broad physical adjustability accommodates custom casing dimensions without requiring expensive tooling redesigns.
Quality Assurance & Inbound Cell Auditing	Batch-level verification of incoming commercial battery shipments to validate vendor C-rate, overcharge resistance, and impedance specifications.	Standardized M16 lugs and reliable M103-12-Y-300A probe interfaces provide plug-and-play compatibility with major industrial cyclers.
Lifecycle & Accelerated Degradation Testing	Long-term continuous charge-discharge cycling over thousands of operational cycles to model long-term capacity retention and degradation mechanisms.	Rugged contact materials and rigid frame construction prevent probe degradation, mechanical fatigue, and drift over multi-year test spans.

Specification Parameter	Technical Detail / Value (JA09)
Product Identifier	JA09
Maximum Continuous Test Current	300A
Contact Probe Model Code	M103-12-Y-300A
Terminal Configuration	Same-Side Poles (□□□)
Electrode Pole / Tab Spacing Range	70 mm – 146 mm
Cable Connection Interface	M16 Lug Terminal
Compatible Cell Length	80 mm – 250 mm
Compatible Cell Width (Thickness)	15 mm – 87 mm
Compatible Cell Height	30 mm – 245 mm
Total Channel Capacity	8 Channels

Specification Parameter	Technical Detail / Value (JA09)
Rack Layer Configuration	2 Tiers (Layers)
Channels Per Layer	4 Channels / Tier
Fixture Access Layout	Single-Sided Operation
Individual Test Unit Dimensions (L × W × H)	250 mm × 278.5 mm × 555 mm
Complete Rack External Dimensions (L × W × H)	1299 mm × 407 mm × 1470 mm
Mounting & Structural Framework	Heavy-duty industrial chassis with isolated probe mounts

Battery Alligator Clips And Kelvin Test Clamps For Laboratory Cell Testing

Item Number: JA04

Introduction

High-precision battery alligator clips and 4-wire Kelvin test clamps engineered for cell cyclers and electrochemical testing. Achieve ultra-low contact resistance, superior signal integrity, and custom configurations tailored to your experimental requirements.

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Application	Description	Key Benefit
Battery Cycler Interfacing	Connecting single cells, pouch tabs, and cylindrical formats to multi-channel charge/discharge testing cabinets.	Delivers stable low-resistance connections under high continuous charge and discharge currents without overheating.
Electrochemical Impedance Spectroscopy (EIS)	High-frequency AC impedance characterization of experimental battery chemistries and solid electrolytes.	Kelvin 4-wire isolation eliminates parasitic lead inductance and resistance, ensuring clean high-frequency Nyquist plots.
Pouch Cell Tab Clamping	Secure electrical attachment to thin, fragile aluminum and copper current collector tabs.	Uniform jaw pressure prevents mechanical puncturing, tab deformation, or localized current crowding.
Coin Cell and Half-Cell Testing	Interfacing split test cells, CR2032 holders, and custom Swagelok-type electrochemical cells.	Compact profile permits dense multi-channel arrays inside environmental chambers and gloveboxes.
Supercapacitor Evaluation	Rapid charge-discharge cycling requiring low-ESR instrumentation leads and heavy instantaneous current handling.	Minimal internal impedance prevents artificial voltage drops during millisecond-scale power bursts.
Automated Formation and Grading Rigs	Factory-floor end-of-line cell formation, pre-charging, and automated capacity grading equipment.	Industrial-grade mechanical durability supports continuous high-throughput duty cycles with minimal maintenance.
Materials & Metallurgy Research	Resistivity, conductivity, and galvanic corrosion measurements on novel alloys and conductive polymers.	Reliable micro-ohm contact integrity across varying specimen surface finishes and geometries.

Specification Parameter	Standard Micro-Current Variant	High-Current Heavy-Duty Variant	4-Wire Kelvin Precision Variant
Item Reference	JA04-MC	JA04-HC	JA04-KV
Primary Contact Material	Gold-Plated Beryllium Copper / Pure Copper	Nickel-Plated Brass / Solid Copper	Gold-Plated Phosphor Bronze / BeCu
Maximum Continuous Current	Up to 10 A	Up to 100 A (Continuous) / 150 A (Peak)	Up to 30 A (Current Lead) / 2 A (Sense Lead)
Rated Voltage	30 V AC / 60 V DC (CAT I)	Up to 1000 V (Application Configured)	30 V AC / 60 V DC (Low Voltage Precision)
Contact Resistance	< 1.5 mΩ	< 0.5 mΩ	< 0.2 mΩ (Sense Path Isolation > 10 GΩ)
Jaw Opening Capacity	Up to 12 mm	Up to 35 mm	Up to 18 mm
Clamping Mechanism	Precision Stainless Steel Coil Spring	High-Tension Tempered Alloy Spring	Dual Isolated Precision Torsion Springs
Clamping Force	8 N to 15 N	25 N to 50 N (Adjustable)	12 N to 20 N per Jaw Half
Insulation Material	Flexible High-Dielectric PVC	Heavy-Duty Flame-Retardant Silicone / Nylon	High-Temperature PTFE / Silicone Boot
Operating Temperature Range	-20°C to +80°C	-40°C to +150°C	-40°C to +125°C

Specification Parameter	Standard Micro-Current Variant	High-Current Heavy-Duty Variant	4-Wire Kelvin Precision Variant
Standard Connection Type	Direct Solder / 2mm Pin / 4mm Socket	Threaded M6/M8 Lug / 4mm Heavy-Duty Banana	Dual 4mm Shrouded Banana / BNC / 4-Pin Aviation
Cable Specifications	18–22 AWG Flexible Silicone Lead	4–10 AWG High-Strand Pure Copper Cable	Dual Coaxial / Twisted Shielded Pair Wire
Standard Lead Length	0.5 m / 1.0 m (Custom lengths on request)	1.0 m / 1.5 m / 2.0 m (Custom lengths on request)	1.0 m / 1.5 m (Custom matched pair lengths)
Corrosion Resistance	24-Hour Salt Spray Tested	48-Hour Salt Spray Tested / Acid-Resistant	Gold Flash Layer over Electroless Nickel Barrier

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