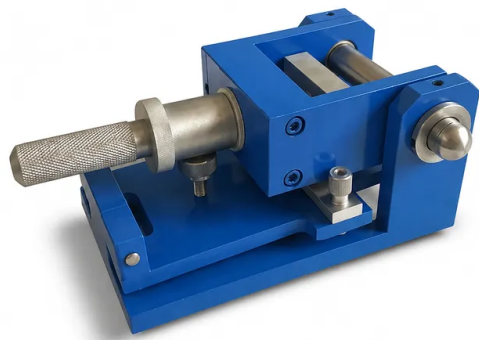


Battery Electrode Bend Tester Cylindrical Mandrel Flexibility And Coating Adhesion Testing System

Item Number: DS07



Introduction

Evaluate battery electrode coating adhesion and flexibility with this precision cylindrical mandrel bend tester designed for reliable cracking and delamination analysis across standardized mandrel diameters up to 32 mm in advanced energy storage research and quality control laboratories.

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Application	Description	Key Benefit
Lithium-Ion Battery Cathodes	Testing thick slurry coatings of LFP, NMC, or LCO on aluminum collector foils around tight radii.	Identifies cathode binder brittleness and prevents active material shedding during high-speed roll-to-roll calendaring.
Lithium-Ion Battery Anodes	Evaluating high-loading graphite and silicon-composite active layers coated onto thin copper substrates.	Quantifies binder flexibility to prevent micro-cracking during jelly-roll winding and prismatic cell assembly.
Solid-State Electrolyte Films	Assessing the mechanical compliance and flexibility of thin composite or polymer electrolyte membranes.	Determines critical bend radius to prevent crack-induced short circuits in flexible and solid-state cell architectures.
Current Collector Foil R&D	Assessing ductility and work-hardening characteristics of ultra-thin copper, aluminum, and nickel foils.	Ensures foil integrity along both longitudinal and transverse rolling directions under continuous bending loads.
Conductive Carbon & Primer Coatings	Measuring adhesion strength of carbon sub-coatings applied to metallic foils prior to main electrode slurry deposition.	Prevents interface delamination between the current collector and active layer during continuous cycling.
Industrial Coil & Can Coatings	Evaluating cracking thresholds of decorative, protective, and functional polymer varnishes on metallic plates.	Verifies post-forming post-cure flexibility and corrosion protection on deep-drawn metal components.
Academic Materials Science	Conducting comparative mechanical deformability studies across experimental slurry formulations and novel binder polymers.	Yields reproducible, publication-grade empirical data for flexible electronics and advanced electrochemical storage devices.

Specification Parameter	Value / Characteristic
Model Number	DS07
Standard Mandrel Diameters	2 mm, 3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 16 mm, 20 mm, 25 mm, 32 mm (12 sizes total)
Applicable Specimen Thickness	≤ 1.0 mm
Standard Specimen Dimensions	120 mm (L) × 50 mm (W)
Rotating Handle Adjustment Travel	> 17 mm
Clearance Between Arm & Mandrel	≤ 0.05 mm
Support Plate Elevation Travel	> 17 mm
Clearance Between Support & Mandrel	≤ 0.1 mm
Standard Bending Arc	180° continuous radial bend
Nominal Bending Duration	1 to 2 seconds
Inspection Standard Distance	Active area excluding < 10 mm from specimen edges

Specification Parameter	Value / Characteristic
Magnification Inspection Standard	Visual examination / 10× optical magnifier
Standard Testing Environment	Temperature: 23 ± 2°C; Relative Humidity: 50 ± 5%
Overall Equipment Dimensions	170 mm (L) × 110 mm (W) × 230 mm (H)
Net Shipping Weight	7.0 kg
Corrosion Protection Protocol	Anhydrous petroleum jelly application for extended storage