

Battery Separator Tensile And Puncture Testing Machine

Item Number: DS02



Introduction

Evaluate battery separator mechanical integrity with our high precision tensile and puncture testing machine featuring advanced motor drive technology responsive load cell sensing comprehensive digital data acquisition and a generous eight hundred millimeter maximum stroke.

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Application	Description	Key Benefit
Lithium-Ion Battery Separators	Evaluates puncture resistance against lithium dendrite penetration and active material particle intrusion on polyolefin membranes (PE/PP).	Accurately predicts separator puncture threshold to prevent micro-shorts and enhance cell safety.
Wet & Dry Process Microporous Films	Determines machine direction (MD) and transverse direction (TD) tensile strength and elongation on micro-porous films.	Ensures membrane durability during high-tension high-speed roll-to-roll winding and slitting processes.
Ceramic-Coated Separators	Measures the tensile fracture profile and puncture resilience of ceramic-polymer composite coated membranes.	Identifies coating embrittlement, delamination risk, and reinforced puncture barriers.
Solid-State Electrolyte Membranes	Characterizes the tensile strength, elasticity, and puncture resistance of thin-film solid polymer and hybrid electrolyte layers.	Verifies mechanical robustness against solid-state cell stacking pressures and dendrite propagation.
Medical & Barrier Packaging Films	Tests tensile yield, tensile rupture, and sharp-tip puncture resistance on flexible barrier films and sterile packaging substrates.	Validates barrier containment integrity, seal boundary limits, and pinhole resistance under mechanical stress.
Capacitor & Dielectric Films	Evaluates the tensile modulus, break elongation, and puncture limits of ultra-thin biaxially oriented dielectric films.	Ensures uniform film tensioning without micro-tears during high-density winding operations.

Specification Parameter	Technical Value (Model: DS02)
Model Identifier	DS02
Maximum Test Force	200 N
Test Force Accuracy	±1%
Test Force Measurement Range	2% - 100% F.S.
Test Force Resolution	0.01% F.S.
Deformation Measurement Range	2% - 100%
Deformation Measurement Accuracy	±1%
Displacement Resolution	0.01 mm
Crosshead Displacement Relative Error	±2%
Testing Speed Range	1 mm/min - 500 mm/min
Crosshead Speed Relative Error	±5%
Maximum Testing Stroke	800 mm
Control Architecture	Computer-controlled closed-loop system (force, displacement, deformation, velocity)
Power Supply Requirements	AC 220 V ±10%, 50 Hz

Specification Parameter	Technical Value (Model: DS02)
Rated Power Consumption	0.5 kW
Equipment Dimensions (W × D × H)	600 mm × 500 mm × 1500 mm
Net Equipment Weight	76 kg