

Battery Electrolyte Vacuum Standing Box For Pouch And Cylindrical Cell Diffusion

Item Number: JZ01



Introduction

Optimize battery cell electrolyte diffusion with this high precision vacuum standing box featuring split architecture glovebox compatibility durable aluminum alloy chamber construction programmable multi cycle dwell profiles and ultra low vacuum leakage rates for maximum wetting efficiency.

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Application	Description	Key Benefit
Pouch Cell Electrolyte Wetting	Deep vacuum degassing and soaking of stacked multi-layer pouch cells following liquid injection sealing.	Eliminates dry active areas, enhances ionic conductivity, and mitigates post-formation gassing defects.
Cylindrical Cell Diffusion Processing	Forced capillary infiltration of viscous electrolytes into dense jelly-roll windings (18650, 21700, 4680 formats).	Significantly accelerates wetting duration compared to atmospheric standing, boosting production line yield.
Next-Generation Battery R&D	Vacuum infusion of high-viscosity ionic liquids, gel polymers, and novel electrolyte formulations into porous separators.	Enables complete interfacial contact in thick-electrode designs and next-generation solid-state cell research.
Supercapacitor Impregnation	Vacuum-assisted soaking of high-surface-area activated carbon electrode matrices with organic electrolytes.	Maximizes effective electrochemical surface area utilization and minimizes equivalent series resistance (ESR).
Glovebox-Integrated Pilot Fabrication	In-line electrolyte standing within moisture-sensitive environments for sodium-ion, lithium-sulfur, and lithium-metal cells.	Prevents atmospheric moisture contamination while streamlining the transition from liquid dosing to pre-sealing.
Quality Assurance & Wetting Optimization	Quantitative evaluation of electrolyte wetting kinetics across various separator surface coatings and separator porosities.	Provides standardized, repeatable vacuum profiles to benchmark formulation additives and wettability metrics.

Parameter Category	Specification Details (Model JZ01)
Product Item Reference	JZ01
Equipment Configuration	Split-type (Separated Main Vacuum Chamber and Control Cabinet)
Electrical Power Supply	220V AC, 50 Hz, Single Phase
Rated Power Consumption	0.5 kW
Pneumatic Supply Requirement	0.4 – 0.5 MPa (Glovebox operation requires inert working gas at 0.4 – 0.5 MPa)
Chamber Internal Dimensions (L × W × H)	320 mm × 320 mm × 175 mm
Actuator Chamber Outer Dimensions (L × W × H)	Approx. 500 mm × 350 mm × 630 mm
Chamber Structural Material	High-strength corrosion-resistant aluminum alloy
Achievable Vacuum Level	≤ -95.0 kPa (external vacuum source required)
Vacuum Sealing Performance	Leakage rate ≤ 1.0 kPa / min
Standing Dwell Time Range	0 – 9999 seconds (fully programmable and adjustable)
Chamber Actuation Mechanism	Pneumatic cylinder driven with dual linear guide bushings
Process Monitoring	Integrated scratch-resistant optical sight glass window

Parameter Category	Specification Details (Model JZ01)
Cycle Capability	Multi-stage vacuum-dwell-vent cycling functionality
Total System Weight	Approx. 70 kg (Combined structural assembly)