

Six Station Vacuum Electrolyte Filling Machine For Supercapacitor Batteries

Item Number: CX11



Introduction

Six station vacuum electrolyte filling machine for supercapacitor batteries delivers $\pm 1\%$ filling accuracy, adjustable 0–250 ml volume, reliable corrosion resistance, and independent operation for consistent cell production in controlled inert glovebox environments and demanding laboratory manufacturing workflows worldwide.

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Application	Description	Key Benefit
Supercapacitor Cell Production	Fills cylindrical supercapacitors after electrode and separator assembly using vacuum-assisted electrolyte impregnation.	Improves electrolyte absorption consistency and reduces variation between cells.
60-Series Battery Processing	Supports electrolyte filling for 60-series batteries with product heights from 50 to 204 mm.	Provides adjustable fixturing and filling volume for multiple product heights.
Pilot Manufacturing Lines	Processes small production batches with six individually controllable stations.	Enables flexible loading and unloading while maintaining useful throughput.
Battery Research and Development	Supports process development for vacuum level, filling quantity, pressure, and standing-time studies.	Allows researchers to optimize electrolyte uptake without replacing the core filling platform.
Glovebox-Based Assembly	Operates with nitrogen supplied consistently with the glovebox working gas environment.	Limits electrolyte exposure and reduces unnecessary glovebox contamination and purification demand.
Materials and Electrochemical Research	Provides controlled liquid infiltration for experimental supercapacitor and battery formats.	Delivers repeatable filling conditions for comparative testing and scale-up studies.

Parameter	Specification
Product Item Number	CX11
Application	Supercapacitors and 60-series batteries
Applicable Product Height	H50–204 mm
Filling Accuracy	$\pm 1\%$
Adjustable Filling Volume	0–250 ml
Vacuum During Filling	Vacuum pressure maintained above -98 KPa
Vacuum Source	Customer-supplied vacuum pump or vacuum pipeline above -98 KPa
Recommended Vacuum Pump Capacity	10 L/s, above -98 KPa
Nitrogen Pressure	≥ 0.4 MPa
Nitrogen Requirement	Nitrogen consistent with the glovebox working gas
Gas Consumption	0.2 m ³ /min
Power Supply	Single-phase AC220V

Parameter	Specification
Rated Power	1 KW
Workstations	6
Workstation Operation	Each workstation can be selected and operated independently without mutual interference
Filling Cycle	One filling cycle requires 12 minutes
Capacity per Cycle	6 units per cycle
Adjustable Process Settings	Vacuum time, high-vacuum value, low-vacuum value, filling volume, filling standing time, pressurization pressure, pressurization time, and pressure-release time
Process Sequence	High vacuum, electrolyte filling, low vacuum and pressurization cycling, then completion of filling
Cleaning Function	DMC cleaning function for scheduled pipeline maintenance
Valve Construction	Special dual-path pneumatic valves
Valve Material	SUS316 and PTFE
Tank Connection Material	Stainless steel
Hose Material	Corrosion-resistant PE
Machine Body Material	6-series aluminum alloy
Filtration and Protection	Multi-stage filtration and special adsorption system
Workstation Dimensions	L900 × W450 × H870 mm
Workstation Net Weight	160 kg
Control Box Dimensions	L600 mm × W450 mm × H1500 mm
Control Box Net Weight	80 kg
Total Gross Weight	330 kg
Installation Floor Load Requirement	Above 0.3 T/m ²
Working Temperature	15~30°C
Working Humidity	30~80% Rh
Customization	Other product specifications can be customized
First-Floor□□ Requirement	Equipment□□ height greater than 1.8 m must be considered
Upper-Floor□□ Requirement	Elevator should provide at least 1 m width, 2 m height, and 1.3 m depth
Installation Planning	Transport route and installation method from the factory exterior to the workshop must be confirmed in advance