

Dual Station Vacuum Automatic Electrolyte Filling Machine

Item Number: JZ02



Introduction

Discover our dual station vacuum automatic electrolyte filling machine engineered with dual twin-head precision metering pumps, integrated vacuum saturation, and intelligent Panasonic PLC automation to achieve maximum electrolyte wetting consistency across pilot and lab battery assembly lines worldwide.

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Application	Description	Key Benefit
Lithium-Ion Pouch Cell Pilot Lines	High-precision vacuum filling of laminated aluminum-plastic film pouch cells for consumer electronics and EV development.	Eliminates internal void pockets and accelerates electrolyte infiltration into dense electrode stacks.
Prismatic Cell Prototyping	Automated dosing and vacuum immersion for hard-case aluminum prismatic energy storage cells.	Delivers consistent volumetric filling without fluid spillage or external casing contamination.
Supercapacitor Manufacturing	Precision injection of organic or ionic liquid electrolytes into high-surface-area activated carbon electrodes.	Ensures complete saturation of ultra-fine micro-pores to achieve targeted capacitance and low ESR.
Solid-State & Semi-Solid Cell R&D	Metered wetting of hybrid solid-state composite separators and gel polymer electrolyte matrices.	Provides controlled vacuum exposure to prevent matrix degradation while achieving uniform interface contact.
Sodium-Ion Battery Assembly	Specialized electrolyte dispensing for emergent sodium-ion cell chemistries prone to higher viscosity.	Maintains exact volumetric dosing tolerances regardless of electrolyte rheological variations.
Academic & Industrial Research Labs	Standardized cell electrolyte injection for electrochemical performance benchmarking and aging studies.	Ensures high reproducibility between experimental batches with fully digitized recipe storage.

Specification Category	Parameter	Value / Description (Model: JZ02)
Electrical & Power	Input Power Supply	Single Phase AC 220V, 50 Hz
Pneumatic Requirements	Compressed Working Gas Source	0.3 - 0.6 MPa
Physical Dimensions	Equipment Dimensions (L x W x H)	1100 mm x 550 mm x 900 mm
Physical Weight	Total Equipment Net Weight	120 kg
Finish & Coating	Exterior Frame Paint	Industrial Silver Coating
Production Performance	Processing Capacity	Dependent on cell geometry, electrolyte viscosity, and process recipe
Pumping & Metering	Injection Pumping System	1 Set (Includes 2 units of 16-size dual-head injection pumps)
Vacuum Infrastructure	Vacuum Evacuation System	1 Set (Fully integrated station-level vacuum circuit)
Motion & Indexing	Automatic Shift Mechanism	1 Set (Precision linear actuator with electric drive)
Tooling & Fixturing	Battery Positioning Mechanism	1 Set (Adjustable pneumatic clamping fixture)
Dispensing Manifold	Injection Nozzle Assembly	1 Set (Anti-drip precision injection nozzle mechanism)
Chassis & Enclosure	Machine Mainframe Assembly	1 Set (Reinforced structural industrial framework)
Controller Hardware	Main Controller & Expansion	Panasonic PLC with dedicated expansion modules
Operator Interface	Human-Machine Interface (HMI)	Weinview Color Touchscreen Display

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Actuation Components	Electric Cylinder & Drive	AirTAC precision electric actuator & drive system
Pneumatic Components	Pneumatic Cylinders & Valves	AirTAC industrial pneumatic components
Safety & Diagnostics	Fault Handling & Alarms	Program-integrated emergency stop, fault detection & visual indicator alerts
Auxiliary Systems	Positive Pressure System	Not Included / None
Auxiliary Systems	Chamber Valve Mechanism	Not Included / None
Auxiliary Systems	Weighing & Robotics	Not Included (No integrated scale, flow-draw, or weighing robotic arm)