



KINTEK SOLUTION

Electrolyte Filling Machine And Soaking Box Catalog

Contact us for more catalogs of Laboratory Press Machine, Battery Lab Consumables & Materials, Battery Testing & Electrochemical Equipment, Electrode Fabrication Equipment, Cell Assembly & Filling Equipment, etc.

KINTEK SOLUTION

COMPANY PROFILE

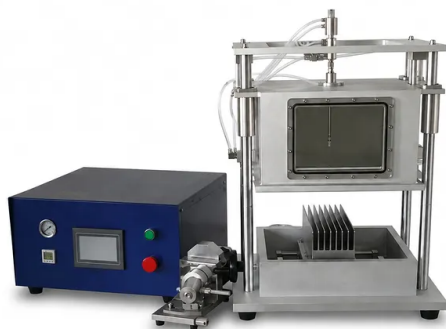
>>> About Us

KINTEK Solution is a technology-driven innovator specializing in comprehensive laboratory equipment for battery R&D and advanced materials research. Our portfolio spans the entire cell fabrication workflow—from mixing, coating, and precision pressing (automatic, heated, isostatic) to cell assembly and testing. Also essential in ceramics and powder metallurgy, our systems prioritize precision, safety, and repeatability, empowering researchers and industrial labs to achieve groundbreaking results.



Pouch Cell Vacuum Electrolyte Injection And Diffusion Standing Machine

Item Number: JZ06



Introduction

Optimize battery cell fabrication with this integrated vacuum electrolyte injection and standing machine. Engineered for pouch and cylindrical cells, it features automated vacuum cycles, precise dispensing accuracy within $\pm 1\%$, robust PLC touchscreen control, and superior glovebox compatibility for advanced research.

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Application	Description	Key Benefit
Pouch Cell Pilot Fabrication	Automated vacuum filling and diffusion for standard and customized pouch cells up to 200 × 200 mm.	Ensures uniform wetting across multi-layer electrode stacks without delamination or dry spots.
Cylindrical Cell Prototyping	Precision electrolyte dosing for experimental cylindrical battery formats under controlled vacuum conditions.	High volumetric repeatability ($\pm 1\%$) guarantees consistent cell balancing in small-batch testing.
Solid-State & Semi-Solid Infiltration	Infusion of liquid or gel-polymer electrolytes into dense, low-porosity composite separator structures.	Deep vacuum pre-evacuation drives fluid deep into tortuous micro-pores for low internal resistance.
Sodium-Ion Battery Research	Electrolyte injection using highly corrosive or novel ester- and ether-based solvent formulations.	SUS316 and welded aluminum components prevent chemical corrosion and fluid contamination.
Supercapacitor Electrolyte Impregnation	Vacuum de-aeration and high-speed filling of high-surface-area activated carbon or graphene electrodes.	Multi-stage soaking cycles up to 9999 minutes ensure exhaustive saturation of nanoscale pore networks.
Silicon-Anode Battery Development	Precise micro-volume dispensing (from 0.2 ml) for high-capacity silicon-dominant experimental cells.	Prevents excess electrolyte degradation while providing exact stoichiometry required for SEI formation.

Specification Parameter	Value / Technical Metric
Model Item Number	JZ06
Primary Functional Modes	Integrated Vacuum Electrolyte Injection & Vacuum Soaking / Standing
Supported Cell Dimensions	Length: 20–200 mm (incl. tabs) × Width: 20–200 mm (incl. gas bag) × Thickness: 0–15 mm
Injection Volume Range	0.2 ml to unlimited (0.2 g to unlimited, adjustable via metering pump)
Dispensing Volumetric Accuracy	$\pm 1\%$
Dispensing / Delivery Speed	6 ml/s (Continuously adjustable)
Fluid Connection Ports	Φ6 mm chemical-resistant tubing
Chamber Construction	Structural welded aluminum with chemical-passivated interior
Fluid Contact Materials	High-grade AISI 304 and AISI 316 stainless steel
Soaking & Vacuum Timer Range	0 to 9999 minutes (Fully programmable per cycle stage)
Vacuum & Pressure Settings	High and low vacuum levels independently adjustable
Chamber Cover Actuation	Pneumatic cylinder drive guided by rotary precision sleeve
User Interface & Control	Industrial PLC with multi-parameter interactive touchscreen

Specification Parameter	Value / Technical Metric
Operating Environment	Compatible with inert gas gloveboxes (Argon/Nitrogen) or dry rooms
Overall Equipment Dimensions	L 510 mm × W 400 mm × H 650 mm
Electrical Requirements	AC 220 V / 50 Hz, Single Phase, 1.0 kW Total Power
Total Equipment Weight	90 kg

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)

Precision Plunger Pump Liquid Injection And Dispensing System For Battery Electrolyte And Chemical Metering

Item Number: JZ03



Introduction

Discover high precision liquid injection systems engineered with valveless industrial ceramic plunger pumps for battery electrolyte filling pharmaceutical dispensing and corrosive chemical metering with superior repeatability and low maintenance.

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Application	Description	Key Benefit
Lithium Battery Electrolyte Injection	Micro-volume precision filling of aggressive organic electrolytes into cylindrical cells, pouch cells, and battery pilot lines.	Zero corrosion, air bubble elimination, and tight volumetric tolerance preventing under-filling or over-filling.
Pharmaceutical & Reagent Dosing	High-accuracy batch dispensing, filling, and aliquot transfer of active pharmaceutical solutions, diagnostic reagents, and sterile vaccines.	Contactless valveless operation preventing particulate shedding, biological contamination, and cross-batch fluid carryover.
Acid & Solvent Metering	Continuous or pulsed dosing of aggressive inorganic acids, alkaline solutions, and organic solvents in chemical synthesis reactors.	High-grade ceramic fluid path prevents chemical degradation, seal swelling, and internal fluid leakage across wide pH ranges.
Precision Gluing & Underfill Dispensing	Controlled dispensing of optical adhesives, UV curable glues, potting compounds, and sealants on microelectronic assemblies.	Programmable reverse draw-back completely eliminates nozzle stringing, dripping, and irregular line deposition.
High-Precision Spraying & Coating	Constant-rate liquid delivery to automated spray nozzles for thin-film coating, membrane fabrication, and surface functionalization.	Pulsation-free fluid delivery ensures uniform wet-film thickness and consistent layer deposition without pressure spikes.
Dairy & Flavoring Micro-Injection	Quantitative micro-addition of concentrated flavorings, enzymes, food-grade additives, and vitamins in automated packaging lines.	Food-safe wetted materials, rapid cleaning-in-place readiness, and repeatable micro-volume precision per packaging cycle.
Acidic Etchant & Electroplating Metering	Accurate replenishment of corrosive chemical additives and brighteners in semiconductor and PCB plating baths.	High mechanical hardness and chemical resilience against abrasive additives, ensuring extended mean time between maintenance.

Parameter Category	Specification Details (Model Identifier: JZ03)
Product Type	Single-head 1-in 1-out reciprocating rotary positive displacement ceramic plunger metering pump
Item Identifier	JZ03
Pump Core Materials	High-purity Zirconia (ZrO ₂) and Alumina (Al ₂ O ₃) ceramics
Core Performance Attributes	Wear resistant, acid/alkali corrosion proof, high-temperature capable, ultra-high hardness, low friction coefficient
Plunger-to-Sleeve Pairing Clearance	2 μm precision fit
Drive Mechanism	Imported precision servo motor / industrial stepper motor
Rotational Speed Range	1 to 1200 rpm (bidirectional, forward and reverse rotation supported)
Speed Control Method	Pulse signal control
Display and Control Interface	4.3-inch color touchscreen HMI with dedicated programmable controller
Recipe & Parameter Memory	Non-volatile internal memory supporting up to 100 process parameter recipes
Single Stroke Metering Volume	0 μL to 10,000 μL (Maximum 10,000 μL per single stroke)

Parameter Category	Specification Details (Model Identifier: JZ03)
Total Dispensing Calculation Formula	$Q_{total} = Q_{stroke} \times N_{strokes}$
Metering Volumetric Accuracy	Within $\pm 0.3\%$ to $\pm 0.5\%$ ($\pm 3\text{‰}$ to $\pm 5\text{‰}$)
Applicable Fluid Medium Temperature	Standard operating range up to $\leq 250^{\circ}\text{C}$ (specify fluid profile during configuration)
Fluid Tubing Specifications	PE / PTFE / PFA options; Inlet ID $\Phi 6$ mm $\times$ OD $\Phi 8$ mm; Outlet ID $\Phi 6$ mm $\times$ OD $\Phi 8$ mm
Dispensing Needles & Nozzles	$\Phi 2.5$ mm, $\Phi 4.0$ mm, $\Phi 6.0$ mm (custom nozzle diameters and lengths available)
Programmable Operating Modes	Positive draw, reverse suction (draw-back), delay metering, standby wash, batch capacity counting
Communication Interface	Standard industrial interface for PLC / IPC host computer automated networking
Pump Unit Dimensions (L $\times$ W $\times$ H)	201 mm $\times$ 125 mm $\times$ 147 mm
Controller Dimensions (L $\times$ W $\times$ H)	295 mm $\times$ 215 mm $\times$ 157 mm
Power Supply Requirements	Standard: AC 220V $\pm 10\%$, 50Hz/60Hz; Optional: AC 110V $\pm 10\%$, 50Hz/60Hz
Operating Ambient Conditions	Ambient temperature 0°C to 40°C ; Relative humidity $< 80\%$ RH (non-condensing)
Ingress Protection Level	IP31 industrial enclosure protection
Security & System Safety	Multi-level password access control and one-touch factory reset restoration

Supercapacitor Automatic Electrolyte Injection Machine High Precision Vacuum Electrolyte Filling System

Item Number: JZ05



Introduction

Discover high-precision automatic electrolyte filling for supercapacitors. Featuring dual ceramic metering pumps, multi-stage vacuum soaking, 12 independent stations, and $\pm 1\%$ dispensing accuracy, this system ensures reliable, bubble-free electrolyte injection inside dry rooms or glovebox environments for advanced energy storage production.

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Application	Description	Key Benefit
60-Series Cylindrical Supercapacitor Manufacturing	Automated vacuum electrolyte filling for standard 60-series electric double-layer capacitors (EDLCs) and pseudocapacitors.	Consistent $\pm 1\%$ fill precision and rapid cell wetting ensure high cell-to-cell capacitance uniformity and low ESR.
Hybrid Supercapacitor & Lithium-Ion Capacitor Assembly	High-precision electrolyte injection for high-energy density hybrid capacitor systems with thick, dense calendared electrodes.	Alternating multi-stage vacuum and pressure cycles force electrolyte penetration into dense electrode stacks without void formation.
Glovebox & Dry Room Pilot Production	Compact footprint automated filling for battery and supercapacitor pilot lines operated inside controlled nitrogen or argon environments.	Low-vapor exposure design minimizes electrolyte evaporation, protecting glovebox atmosphere purifiers and internal sensors.
Electrochemical R&D & Formulation Testing	Quantitative dispensing of novel organic, ionic liquid, or aqueous electrolyte formulations into experimental cell prototypes.	Broad 0-250 mL volume adjustability and high chemical resistance enable versatile testing of aggressive proprietary chemistries.
Industrial Energy Storage Module Fabrication	Batch processing of heavy-duty ultracapacitor cells designed for grid stabilization, wind turbine pitch control, and rail regenerative braking.	High throughput of approximately 1 cell per minute with automated buffer tank replenishing ensures steady commercial manufacturing.

Specification Parameter	Value / Technical Requirement
Product Item Number	JZ05
Applicable Cell Format	60-Series Supercapacitor Cells (Adjustable Tooling for Variable Heights)
Dispensing Volume Range	0 - 250 mL (Continuously Adjustable)
Injection Accuracy	$\pm 1\%$
Maximum Pump Flow Rate	40 mL/s
Throughput / Capacity	Approx. 1 pc/min (Process and volume dependent)
Station Configuration	12 Stations (Dual-row layout, 6 stations per row, independently operable)
Pumping Mechanism	Dual Valveless Precision Ceramic Pumps (ZrO_2 / Al_2O_3 Ceramic Cores)
Operating Vacuum Level	Vacuum pressure maintained at ≥ -98 kPa during injection
Required Nitrogen Gas Supply	≥ 0.4 MPa (Compatible with glovebox working atmosphere)
Adjustable Process Parameters	Vacuum evacuation time, high/low vacuum setpoints, liquid soaking time, pressurization level & time, pressure relief time

Specification Parameter	Value / Technical Requirement
Fluid Path Materials	SUS316 / SUS304 Stainless Steel, Industrial Ceramics, PTFE, Chemical-Resistant PE Tubing
Chassis & Structural Materials	6-Series Corrosion-Resistant Anodized Aluminum Alloy
Nozzle Positioning System	Heavy-Duty Mechanical Positioning (Non-electronic, corrosion-immune)
Electrolyte Buffer Tank	Stainless steel intermediate tank with automated high/low level auto-refill control
Weighing & Quality Control System	Integrated precision gravimetric balance with dedicated industrial PC system
Filtration & Protection System	Multi-stage particulate filtration and specialized chemical vapor adsorption traps
Power Supply	AC 220V $\pm 10\%$, 50 Hz, Single Phase
Total Power Consumption	1.5 kW
External Dimensions (Dual Station Unit)	900 mm (L) $\times$ 800 mm (W) $\times$ 880 mm (H)
Environmental Requirements	Dry room or inert glovebox (Dry air / N ₂ atmosphere; ambient plant temperature)
External Vacuum Source Requirement	Dedicated vacuum pump (≥ 20 L/s, ≥ -98 kPa) or central pipeline vacuum (User-supplied)

Component Description	Quantity	Standard Inclusion Details
Dual-Station Electrolyte Injection Base Station	1 Set	Main structural frame and glovebox integration housing
Automated Injection Mechanisms	2 Sets	Precision dual-leadcrew drive systems
Precision Ceramic Metering Pumps	2 Units	High-torque, valveless ZrO ₂ /Al ₂ O ₃ ceramic pump heads
Cell Support Brackets & Tooling	2 Units	Height-adjustable fixtures for 60-series supercapacitors
Capacitor Injection Nozzle Positioning Assemblies	2 Sets	Corrosion-resistant mechanical locator mechanisms
Nozzle Clamping & Sealing Mechanisms	2 Sets	High-pressure pneumatic sealing head assemblies
Electrolyte Intermediate Buffer Tank	1 Set	Level-monitored automated refilling reservoir
Automated Master Control System	1 Set	Programmable process controller with intuitive parameter interface
Precision Gravimetric Weighing System	1 Set	Analytical balance integrated with industrial computer
Specialized Vapor Adsorption & Filter Unit	1 Set	Multi-stage vacuum line and exhaust protection assembly
Vacuum Pump Source (≥ 20 L/s, ≥ -98 kPa)	1 Unit	Customer-supplied (Dedicated unit or central facility pipeline)

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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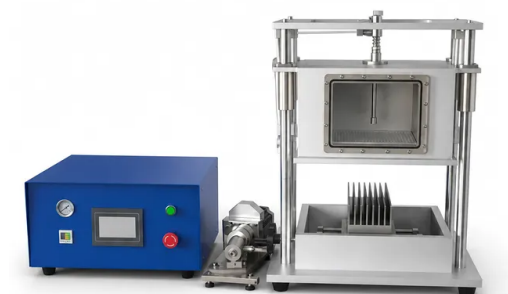
Application	Description	Key Benefit
Lithium-Ion Pouch Cell Pilot Lines	High-precision vacuum filling of laminated aluminum-plastic film pouch cells for consumer electronics and EV development.	Eliminates internal void pockets and accelerates electrolyte infiltration into dense electrode stacks.
Prismatic 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

Specification Category	Parameter	Value / Description (Model: JZ02)
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)

Vacuum Electrolyte Injection Standing And Hot Press Pre Sealing All In One Machine For Battery And Supercapacitor Fabrication

Item Number: JZ07



Introduction

Optimize battery assembly with this all-in-one vacuum electrolyte injection standing and hot press pre-sealing system featuring precise volumetric dosing uniform electrolyte absorption adjustable standing vacuum and high-precision thermal sealing designed for glovebox integration and demanding laboratory pilot lines.

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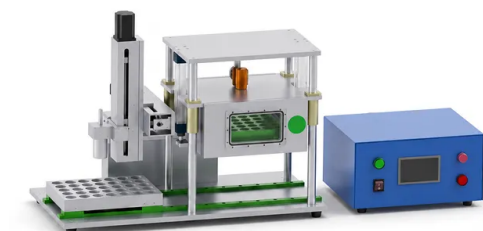
Application	Description	Key Benefit
Lithium-Ion Pouch Cell Prototyping	Automated electrolyte dosing and vacuum thermal pre-sealing of multi-layer pouch cells for consumer and EV energy storage research.	Eliminates air entrapment, ensures fast separator wetting, and produces robust gas-tight seals with thickness variance under 15 μm .
Solid-State & Semi-Solid Cell Assembly	Specialized vacuum injection and soaking of high-viscosity gel polymer or liquid-infiltrated solid electrolytes into dense solid-state electrode structures.	Deep vacuum cycling forces complete infiltration into micro-porous solid matrices, lowering interfacial resistance.
Supercapacitor & EDLC Manufacturing	Precision injection of high-conductivity organic or ionic electrolytes into wound and stacked electrochemical double-layer capacitor envelopes.	High dispensing speed (up to 6 ml/s) and rapid vacuum standing minimize electrolyte solvent evaporation and improve cycle life.
Sodium-Ion Battery Development	Cell fabrication utilizing alternative ester or ether-based sodium electrolytes requiring strict moisture-free and gas-free processing environments.	Glovebox-ready compact footprint and 316 stainless steel fluid path prevent ambient contamination and corrosion.
Electrolyte Additive & Wetting Studies	Comparative laboratory evaluation of novel wetting agents, fluorinated co-solvents, and functional additives under controlled soak times.	Programmable standing timers up to 9999 minutes allow exact kinetic modeling of electrolyte uptake in novel separators.
Pilot-Scale Cell Packaging Lines	Pre-sealing of pouch cells with dedicated gas bag pockets prior to primary formation, aging, and secondary degas finishing.	Reconfigurable seal widths and adjustable 0-5 kg/cm ² pressure ensure uniform edge quality across varied pouch foil laminates.

Technical Parameter	Specification Value (Model: JZ07)
Model Item Number	JZ07
Integrated Core Functions	Vacuum Electrolyte Injection, Vacuum Standing/Soaking, Thermal Pre-Sealing
Applicable Cell Dimensions	Length: 20-200 mm (including tabs) Width: 20-200 mm (including gas bag area) Thickness: 0-15 mm
Dispensing Capacity Range	0.2 ml to continuous / infinite (regulated via injection pump)
Cell Liquid Injection Volume	0.2 g to continuous / infinite (regulated via injection pump)
Electrolyte Injection Accuracy	$\pm 1\%$
Dispensing Fluid Speed	6 ml/s (adjustable)
Fluid Inlet / Outlet Tubing	$\Phi 6$ mm chemically resistant flexible tubing

Technical Parameter	Specification Value (Model: JZ07)
Vacuum Chamber Construction	Welded aluminum alloy structure, corrosion-resistant and high-stability
Wetted & Critical Parts Material	AISI 304 and AISI 316 stainless steel
Vacuum Standing Parameters	Independent low/high vacuum adjustment; dwell time programmable up to 9999 min
Thermal Sealing Temperature Range	Ambient to 250 °C (continuously adjustable)
Temperature Control Accuracy	±2 °C
Thermal Sealing Pressure Range	0 to 5 kg/cm ² (adjustable via precision pressure regulator)
Thermal Sealing Dwell Time	0 to 99 seconds (digitally adjustable)
Sealing Edge Width	5 ± 0.4 mm (customizable upon request)
Maximum Sealing Length	200 mm
Sealing Thickness Parallelism	Any two-point thickness variance < 15 µm
Sealing Head Material	High thermal conductivity copper alloy
Die / Lid Motion Mechanism	Pneumatic cylinder drive with dual linear guide bushings & rotating guide sleeves
Observation Mechanism	Integrated transparent optical inspection window
Heating Element Rating	300 W heating cartridge; ~0.6 kW active heating power consumption
Total Power Supply & Load	Single-phase AC 220 V / 50 Hz, 1.0 kW total rated load
Overall Equipment Dimensions	L 510 mm × W 400 mm × H 650 mm
Equipment Net Weight	90 kg
Operating Environment	Glovebox (argon/nitrogen atmosphere) or Dry Room compatible

Vacuum Electrolyte Filling And Standing Integrated Machine

Item Number: JZ04



Introduction

Optimize battery electrolyte filling and wetting with this automated vacuum injection and standing integrated machine. Engineered with $\pm 0.5\%$ dosing precision, corrosion-resistant fluidics, and glovebox compatibility, it delivers unmatched batch repeatability for advanced lithium-ion and supercapacitor cell pilot lines.

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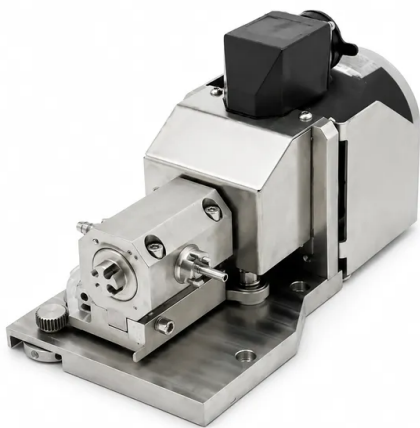
Application	Description	Key Benefit
Cylindrical Lithium-Ion Cells	Automated vacuum injection and soaking for standard cylindrical formats such as 18650, 21700, and custom dimensions up to 35 mm OD.	Accelerates electrolyte uptake across tightly wound jelly rolls, eliminating dry spots and reducing formation cycling scrap rates.
Supercapacitor Pilot Assembly	Rapid electrolyte saturation for high-surface-area porous carbon electric double-layer capacitors (EDLCs).	Deep vacuum evacuation removes micro-air pockets within high-capacitance electrode matrices for lower equivalent series resistance (ESR).
Next-Generation Solid-State & Semi-Solid R&D	Precision dosing of gel polymers and specialized liquid electrolyte carriers under an inert glovebox atmosphere.	Prevents atmospheric moisture contamination, preserving sensitive lithium metal anodes and exotic electrolyte additives.
Pouch Cell Electrolyte Metering	Non-vacuum injection tailored for fragile aluminum laminated pouch formats prior to final vacuum pre-sealing.	Delivers exact dosing accuracy ($\pm 0.5\%$) without risking blister expansion or seal damage from chamber vacuum cycles.
Coin Cell and Button Supercapacitor Testing	Micro-volume quantitative dispensing (down to 0.2 ml / 0.2 g) for academic screening and novel material formulation evaluations.	Eliminates manual pipetting errors and ensures reproducible electrochemical impedance spectroscopy (EIS) baselines.

Technical Parameter	Specification Value (JZ04)
Item Identifier	JZ04
Supported Cell Types	Cylindrical cells, Supercapacitors, Coin cells, Pouch cells (non-vacuum mode)
Core Functions	Integrated vacuum electrolyte injection & pressure-retention standing (soaking)
Batch Processing Capacity	Up to 35 cylindrical cells per batch
Compatible Cylindrical Dimensions	• 13 mm OD $\times$ 27 mm H • 16 mm OD $\times$ 37 mm H • 18 mm OD $\times$ 27 mm H (and 18650 class) • 22 mm OD $\times$ 44 mm H • 30 mm OD $\times$ 50 mm H • 35 mm OD $\times$ 82 mm H
Injection Volume Range	0.2 ml to 100 ml (0.2 g to 100 g per cell)
Dosing Accuracy	$\pm 0.5\%$
Dispensing Speed Range	0.1 to 20 ml/s (continuously adjustable)
Adjustable Operational Settings	Pre-vacuum level, injection volume, dispensing speed, soaking duration, standing pressure
Wetted Component Materials	SUS304 / SUS316 Stainless Steel, Chemical-Resistant Polymer Tubing
Required Compressed Air Supply	Dried, filtered, regulated $\geq 4.0 \text{ kg/cm}^2$ (glovebox setups use identical working gas)
Required Vacuum Source	Vacuum pump $\geq 2 \text{ L/s}$ (ultimate vacuum $\geq -98 \text{ kPa}$) or central vacuum supply ($\geq -98 \text{ kPa}$)

Technical Parameter	Specification Value (JZ04)
Power Configuration	AC 220V $\pm 10\%$, 50 Hz, Single Phase, 1.0 kW
Main Machine Dimensions	L900 mm $\times$ W450 mm $\times$ H640 mm
Control Box Dimensions	L450 mm $\times$ W420 mm $\times$ H255 mm
Equipment Net Weight	180 kg
Operating Environment	Ambient room temperature; compatible with Glovebox (Ar/N ₂) and Dry Room integration

Single Head Electrolyte Injection Pump Precision Quantitative Metering Dispenser

Item Number: JZ10



Introduction

Engineered for high precision liquid dispensing this single head electrolyte injection pump delivers repeatable metering from 0.05 to 3000 microliters per stroke with high hardness alumina ceramic components and intelligent touchscreen control for demanding battery and chemical manufacturing line operations.

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Application	Description	Key Benefit
Lithium-Ion Battery Fabrication	Precision injection of liquid electrolyte (LiPF6, solvent carbonates, ionic liquids) into pouch, prismatic, and cylindrical battery cells.	Hermetic seal-free liquid path eliminates crystallization clogging and guarantees strict $\pm 0.3\%$ fill weight tolerances.
Pharmaceutical Dosing & Filling	Sterile micro-metering of liquid active pharmaceutical ingredients (APIs), biological reagents, and vaccine vials.	Alumina ceramic components withstand autoclave sterilization and aggressive CIP protocols with zero chemical leaching.
Specialty Adhesive & Sealant Dispensing	Controlled micro-bead application and potting of cyanoacrylates, UV-curable adhesives, and liquid silicones.	Valveless rotating plunger design eliminates adhesive curing inside moving valve seats and prevents drip defects.
Semiconductor & Electronics Assembly	Accurate delivery of flux solutions, photoresists, conductive inks, and specialized etching chemicals during wafer/board packaging.	Micro-dosing capacity down to 0.05 μL ensures repeatable micro-droplet placement without spatter or fluid creep.
Fine Chemical & Analytical Reagent Dosing	Automated inline dispensing of aggressive acids, bases, and volatile organic reagents into continuous synthesis reactors.	Outstanding chemical inertia across universal solvents paired with precise digital speed adjustment from 18 to 250 rpm.
Food & Flavoring Liquid Injection	Continuous micro-injection of highly concentrated aromatic essences, colorings, and nutritional additives during high-speed packaging.	Clean-in-place bidirectional flush system ensures zero flavor carryover between production changeovers without teardown.

Parameter Metric	Specification Value (Model: JZ10)
Product Item Number	JZ10
Valve Core Material	High-Purity Alumina Ceramic (\$Al_2O_3\$)
Pump Sleeve & Housing Material	SUS304 Stainless Steel
Valve Surface Hardness	1800 HV0.5
Single Stroke Dispensing Volume Range	0.05 – 3000 μL
Stroke Volume Adjustment Mechanism	Calibrated Gear Adjustment Mechanism
Maximum Continuous Flow Rate	750 mL/min
Volumetric Dispensing Repeatability Accuracy	$\pm 3\%$ ($\pm 0.3\%$)
Operating Rotational Speed Range	18 – 250 r/min (rpm)
Inlet Tubing Port Dimensions	6.0 mm (ID) x 8.0 mm (OD)
Outlet / Discharge Tubing Port Dimensions	4.0 mm (ID) x 6.0 mm (OD)
Standard Tubing Materials	Chemically Inert PE / PTFE
Drive Motor Configuration	Industrial Single-Axis 86 Series Stepper Motor

Parameter Metric	Specification Value (Model: JZ10)
Control System Architecture	Digital PLC with Interactive Touchscreen Interface
Physical Dimensions (W x D x H)	234 mm x 125 mm x 146 mm
Net Equipment Weight	5.9 kg
OEM & System Integration	Supported via standard mounting and digital I/O

Laboratory Bottle Top Dispenser Chemical Resistant Reagent Liquid Dosing System

Item Number: JZ11



Introduction

Engineered for superior chemical resistance and high precision, this autoclavable bottle top dispenser provides reliable liquid handling across 0.5 to 50 ml volumes. Featuring inert fluoropolymer pathways, it ensures precise, repeatable reagent dosing across laboratory research and industrial workflows.

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Application	Description	Key Benefit
Battery Electrolyte Formulation	Precision dispensing of solvent mixtures, organic carbonates, and ionic liquid additives into glovebox synthesis vessels.	Prevents moisture intrusion and resists fluorinated solvent degradation during high-throughput electrolyte research.
Semiconductor Wet Chemistry	Transfer and aliquoting of corrosive etchants, acid washes, and stripping agents during wafer processing.	Inert PTFE/FEP fluid contact prevents metallic ion contamination and withstands aggressive acid mixtures.
Petrochemical and Fuel Analysis	Dosing of viscous hydrocarbons, standard fuels, and organic solvent diluents for distillation and spectrometry preparation.	Handles fluids with kinematic viscosities up to 500 mm ² /s without piston stalling or volumetric drift.
Ceramics and Advanced Materials	Metered addition of chemical binders, dispersants, and acid activators into powder slurries.	High-density fluid tolerance (up to 2.2 g/cm ³) ensures accurate delivery of dense mineral and salt solutions.
Pharmaceutical Quality Control	Continuous, repeatable dispensing of titrants, buffer standards, and high-purity reagents in GLP/GMP environments.	Autoclavable construction prevents microbial fouling, while ≤0.1% CV guarantees regulatory compliance.
Environmental Sample Digestion	Rapid batch dispensing of nitric, hydrochloric, and sulfuric acids into digestion tubes for heavy metal analysis.	Eliminates hazardous acid vapor exposure and increases throughput during sample preparation.
Academic Materials Research	Universal liquid handling for multi-user analytical chemistry and materials science laboratories.	Robust mechanical stops and clear graduations minimize operator error across varying user skill levels.

Model Identifier	Volume Range (ml)	Minimum Graduation (ml)	Accuracy Error (A ≤ ±%)	Accuracy Error (A ≤ ±μl)	Coefficient of Variation (CV ≤ %)	Precision Repeatability (CV ≤ μl)
JZ11-05	0.5 – 5.0	0.1	0.5%	25 μl	0.1%	5 μl
JZ11-10	1.0 – 10.0	0.2	0.5%	50 μl	0.1%	10 μl
JZ11-25	2.5 – 25.0	0.5	0.5%	125 μl	0.1%	25 μl
JZ11-50	5.0 – 50.0	1.0	0.5%	250 μl	0.1%	50 μl

Parameter	Specification Rating
Fluid Path Materials	Polytetrafluoroethylene (PTFE), Fluorinated Ethylene Propylene (FEP), Borosilicate Glass (BSG), Polypropylene (PP)
Maximum Operating Pressure	500 mbar
Maximum Kinematic Viscosity	500 mm ² /s
Maximum Fluid Density	2.2 g/cm ³
Maximum Fluid Operating Temperature	40°C

Parameter	Specification Rating
Sterilization Method	High-temperature steam autoclaving

Item Code / Standard	Description	Thread Adaptation
JZ11-AD-S40	Thread Adapter	45 mm to 40 mm (S40)
JZ11-AD-GL32	Thread Adapter	45 mm to 32 mm (GL32)
JZ11-AD-GL38	Thread Adapter	45 mm to 38 mm (GL38)
JZ11-AD-GL25	Thread Adapter	32 mm to 25 mm (GL25)
JZ11-AD-GL28	Thread Adapter	32 mm to 28 mm (GL28)
JZ11-BTL-1L	Square Reagent Bottle	1 Liter Capacity, Amber Glass (UV-Protecting)

Vacuum Electrolyte Filling Standing And Pre Sealing All In One Machine For Pouch Cell And Supercapacitor Assembly

Item Number: JZ13



Introduction

Discover our integrated vacuum electrolyte filling standing and pre sealing all in one machine designed for precision pouch cell and supercapacitor assembly delivering accurate dosage controlled diffusion and uniform thermal sealing under strict dry room conditions.

[Learn More](#)

Application	Description	Key Benefit
Lithium-Ion Pouch Cell R&D	Precision vacuum filling and edge pre-sealing of prototype lithium-ion and solid-state pouch cells.	Eliminates interfacial void formation and guarantees uniform electrolyte wetting across multi-layer electrode stacks.
Supercapacitor Fabrication	Electrolyte injection, vacuum impregnation, and hermetic pre-sealing for electric double-layer capacitors (EDLCs).	Rapidly saturates high-surface-area activated carbon electrodes without damaging delicate microporous separator films.
Pilot-Scale Battery Assembly	Small-to-medium batch manufacturing of specialized pouch cells for consumer electronics, medical, and aerospace devices.	Integrates three critical assembly operations into a single station, reducing labor overhead and production cycle times.
Novel Electrolyte Formulation Testing	Quantitative dispensing of advanced high-voltage liquid, gel, ionic liquid, and functionalized additive electrolytes.	Delivers ±1% volumetric repeatability with chemical-resistant wetted parts, preventing contamination and fluid degradation.
Sodium-Ion & Alternative Chemistries	Controlled vacuum wetting and pre-encapsulation of emerging sodium-ion, zinc-ion, and lithium-sulfur pouch prototypes.	Prevents exposure to ambient moisture and oxygen when operated inside inert gas glovebox chambers.
Post-Filling Vacuum Degassing Studies	Extended vacuum standing and cyclic diffusion optimization for high-density, thick-calendered battery electrodes.	Accelerates electrolyte diffusion pathways while providing direct visual verification through the integrated observation window.

Specification Parameter	Value / Range (JZ13)
Base Model Number	JZ13
Core Functional Integration	Vacuum Filling, Vacuum Standing (Diffusion), Thermal Pre-Sealing
Applicable Cell Dimensions	Length: 20–190 mm; Width: 20–190 mm; Thickness: 0–15 mm
Volumetric Dosing Range	0.2 ml – 3 L (Configurable via metering pump)
Mass Dosing Capacity	0.2 g – 3 kg (Configurable via metering pump)
Electrolyte Injection Accuracy	±1%
Dispensing Discharge Speed	Up to 6 ml/s (Continuously adjustable)
Inlet / Outlet Fluid Porting	Φ6 mm chemical-resistant tubing interface
Sealing Head Operating Temperature	Ambient to 250°C (Digital adjustable)
Temperature Control Precision	±2°C
Thermal Sealing Pressure Range	0 – 5 kg/cm² (Continuously adjustable via regulator)
Thermal Sealing Dwell Time	0 – 99 seconds (Digitally adjustable)
Standard Sealing Edge Width	5 ± 0.4 mm (Customizable upon request)

Specification Parameter	Value / Range (JZ13)
Maximum Sealing Length	190 mm
Sealing Blade Total Length	200 mm
Sealing Thickness Parallelism	Sealing thickness variance between any two points < 15 μ m
Structural Materials (Wetted / Critical)	SUS304 and SUS316 Stainless Steel
Vacuum Chamber Construction	Welded heavy-gauge aluminum alloy, corrosion-resistant treated
Sealing Jaw Material	High thermal conductivity copper alloy
Drive Mechanism	Pneumatic cylinder with dual precision linear guide bushings
Control Architecture	Microprocessor PLC with color touchscreen HMI
Heating Element Rating	300 W heating cartridge (Peak heating power approx. 0.6 kW)
Total Power Supply Requirements	AC 220V, 50 Hz, Single Phase, 1.0 kW maximum
Overall Equipment Dimensions	L600 mm x W620 mm x H800 mm
Total System Weight	95 kg

Laboratory Manual Adjustable Single Channel Micropipette For Precision Liquid Handling

Item Number: JZ08



Introduction

Enhance experimental precision with this laboratory manual adjustable single channel micropipette featuring autoclavable lower parts, an integrated digital volume display, exceptional accuracy across broad ranges, and included calibration tools for demanding battery chemistry and material synthesis.

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Application	Description	Key Benefit
Battery Electrolyte Formulation	Micro-volume dispensing of functional electrolyte additives, ionic liquids, and specialized solvent ratios for coin and pouch cell research.	Eliminates volumetric variance to ensure precise additive concentration and repeatable electrochemical performance.
Nanomaterial Slurry Synthesis	Accurate titration and additive dosing during cathode and anode slurry preparation, carbon nanotube dispersion, and binder blending.	Maintains exact stoichiometric balance across sub-milliliter and milliliter reaction volumes.
Thin-Film Coating Solution Prep	Measuring exact precursor solution volumes for spin coating, dip coating, and blade casting in perovskite and solid-state battery studies.	Delivers uniform liquid handling for film thickness consistency and defect-free deposition.
Catalyst & Reagent Synthesis	Delivering micro-quantities of metal salts, organometallic catalysts, and surfactants in synthetic chemistry reactors.	High accuracy at low volumes minimizes expensive reagent waste and prevents secondary reaction pathways.
Analytical Dilution Series	Preparing standard calibration curves and serial dilutions for HPLC, ICP-MS, and spectrophotometric liquid sample analysis.	High precision and low systematic error ensure linearity across diverse concentration regimes.
Biological & Biochemical Assays	Performing enzyme assays, protein extraction titrations, and cell culture media supplement additions in clean environments.	Autoclavable lower components eliminate biological cross-contamination between successive protocol runs.
Material Quality Assurance	Routine batch-level volumetric sampling and chemical reagent dispensing in manufacturing QC laboratories.	Durable mechanical construction maintains calibration integrity under continuous multi-operator shifts.

Product Code	Volume Range	Increment	Test Volume	Inaccuracy (± %)	Imprecision (± %)
JZ08-01	0.1 - 2.5 µl	0.05 µl	2.5 µl 1.25 µl 0.25 µl	2.50% 3.00% 12.00%	2.00% 3.00% 6.00%
JZ08-02	0.5 - 10 µl	0.1 µl	10 µl 5 µl 1 µl	1.00% 1.50% 2.50%	0.80% 1.50% 1.50%
JZ08-03	2 - 20 µl	0.5 µl	20 µl 10 µl 2 µl	0.90% 1.20% 3.00%	0.40% 1.00% 2.00%
JZ08-04	5 - 50 µl	0.5 µl	50 µl 25 µl 5 µl	0.60% 0.90% 2.00%	0.30% 0.60% 2.00%
JZ08-05	10 - 100 µl	1.0 µl	100 µl 50 µl 10 µl	0.80% 1.00% 3.00%	0.15% 0.40% 1.50%

Product Code	Volume Range	Increment	Test Volume	Inaccuracy (± %)	Imprecision (± %)
JZ08-06	20 - 200 µl	1.0 µl	200 µl 100 µl 20 µl	0.60% 0.80% 3.00%	0.15% 0.30% 1.00%
JZ08-07	50 - 200 µl	1.0 µl	200 µl 100 µl 50 µl	0.60% 0.80% 1.00%	0.15% 0.30% 0.40%
JZ08-08	100 - 1000 µl	5.0 µl	1000 µl 500 µl 100 µl	0.60% 0.70% 2.00%	0.20% 0.25% 0.70%
JZ08-09	200 - 1000 µl	5.0 µl	1000 µl 500 µl 200 µl	0.60% 0.70% 0.90%	0.20% 0.25% 0.30%
JZ08-10	1000 - 5000 µl	50.0 µl	5000 µl 2500 µl 1000 µl	0.50% 0.60% 0.70%	0.15% 0.30% 0.30%
JZ08-11	2 - 10 ml	0.1 ml	10 ml 5 ml 2 ml	0.60% 1.20% 3.00%	0.20% 0.30% 0.60%

Electronic Single Channel Micro Adjustable Pipette

Item Number: JZ09



Introduction

Upgrade your laboratory precision with our electronic single channel adjustable micro pipette featuring motorized aspiration control, ergonomic multi-function dial operation, rechargeable lithium battery power, and high-accuracy volume delivery across analytical chemistry, battery research, and life science workflows.

[Learn More](#)

Application	Description	Key Benefit
Battery Electrolyte Formulation & Additive Dosing	Precise micro-volume dispensing of specialized liquid additives, ionic liquids, and novel solvents into experimental coin and pouch cell electrolytes.	Eliminates volumetric variance across parallel test batches, guaranteeing reproducible electrochemical stability assessments.
Nanomaterial Precursor Synthesis	Controlled micro-titration and droplet introduction of organometallic precursors, catalysts, and crosslinkers in chemical synthesis reactors.	Consistent motorized aspiration speed prevents precursor shock-mixing and controls reaction kinetics precisely.
Analytical Standard Preparation & Serial Dilution	Automated calibration curve generation, ICP-MS trace sample preparation, and spectrophotometric standard dilutions across varying concentrations.	High precision (CV ≤ 0.2%) guarantees analytical linearity and reduces standard calibration curve re-runs.
Pharmaceutical Formulation & Micro-Assays	Precise liquid transfer for reagent preparation, cell culture media supplementation, enzymatic kinetics, and bioanalytical assays.	Motorized stroke consistency eliminates user-dependent pipetting errors and minimizes repetitive strain during large sample batches.
Sol-Gel & Ceramic Coating Slurry Additives	Metered addition of binders, defoamants, plasticizers, and stabilizers into micro-slurries for thin-film and solid electrolyte processing.	Adjustable dispensing speeds enable smooth dosing of shear-sensitive additives without bubble formation or liquid shearing.
Molecular Biology & PCR Reaction Setup	Aliquoting primers, master mixes, template DNA, and fluorescent probes into micro-well plates and reaction tubes.	Ultra-fine increments down to 0.01 µL enable reliable setup of concentrated master mixes and sub-microliter trace reactions.

Model Identifier	Volume Range (µL)	Increment (µL)	Test Volume (µL)	Max Permissible Systematic Error (Accuracy) (±µL)	Max Permissible Systematic Error (Accuracy) (±%)	Max Permissible Random Error (Precision) (s.d. µL)	Max Permissible Random Error (Precision) (CV%)
JZ09-10	0.5 - 10	0.01	10	0.10	1.0%	0.05	0.5%
JZ09-10	0.5 - 10	0.01	1	0.035	3.5%	0.03	3.0%
JZ09-50	5 - 50	0.1	50	0.40	0.8%	0.15	0.3%
JZ09-50	5 - 50	0.1	5	0.15	3.0%	0.125	2.5%
JZ09-300	30 - 300	1.0	300	1.80	0.6%	0.60	0.2%
JZ09-300	30 - 300	1.0	30	0.90	3.0%	0.21	0.7%
JZ09-1000	100 - 1000	5.0	1000	6.00	0.6%	2.00	0.2%
JZ09-1000	100 - 1000	5.0	100	3.00	3.0%	0.60	0.6%

Specification Parameter	Details & Operating Capabilities
Channel Configuration	Single Channel Micro-Dispensing Architecture

Specification Parameter	Details & Operating Capabilities
Power Architecture	Built-in High-Capacity Rechargeable Lithium-Ion Battery
User Interface	High-Visibility Body-Mounted LCD Display with Real-Time Parameter Feedback
Control System	Digital Microprocessor with Multifunction Rotary Navigation Dial
Fluid Velocity Settings	Fully Adjustable Multi-Stage Aspiration and Dispensing Speed Profiles
Mechanism Type	Electronic Motor-Driven Micrometer Piston Displacement
Operating Ergonomics	Ultra-Lightweight Contoured Grip with Optimized Center of Gravity

Automatic In Line Prismatic Battery Electrolyte Filling Machine For Pilot Line

Item Number: JZ12



Introduction

Designed for battery pilot lines, this automatic in-line prismatic cell electrolyte filling machine provides $\pm 3\%$ quantitative dosing accuracy, high-vacuum soaking cycles, and multi-channel throughput to maximize wettability, pass rates, and cell reliability across demanding research and small-batch production runs.

[Learn More](#)

Application	Description	Key Benefit
Prismatic Lithium-Ion Pilot Production	Precision electrolyte injection for aluminum-shell NCM, NCA, and LFP power cells in pilot manufacturing.	Ensures thorough electrode wetting and achieves a $\geq 99\%$ qualified first-pass production yield.
Commercial Energy Storage Cell Prototyping	Electrolyte filling for high-capacity prismatic cells used in grid-scale energy storage system (ESS) modules.	Accelerates electrolyte absorption into dense, thick electrode layers via programmable vacuum-nitrogen cycling.
Sodium-Ion Battery Development	Small-batch electrolyte dispensing for emerging sodium-ion chemistry cells requiring specialized salt formulations.	Delivers precise volumetric dosing without cross-contamination or chemical degradation of specialized electrolytes.
Automotive EV Battery Cell Qualification	Pre-production validation and batch assembly of heavy-duty aluminum-cased traction battery cells.	Provides tight cell-to-cell consistency ($\pm 3\%$) essential for matching cell capacities across vehicle battery packs.
Advanced Battery Chemistry Research	High-throughput electrolyte testing and wetting optimization in university, government, and corporate R&D centers.	Enables flexible parameter configuration for pressure, soak times, and cycle counts on a standardized platform.
Custom Prismatic Cell Manufacturing	Electrolyte filling for non-standard, custom-dimension prismatic cells using tailored top-cover fixturing plates.	Facilitates fast tooling changeovers to support versatile product development and diverse client specifications.

Specification Parameter	System Value / Requirement
Model Identifier	JZ12
Equipment Classification	In-Line Prismatic Aluminum-Shell Battery Electrolyte Filling Machine
Batch Processing Capacity	12 Cells per Fixture Cycle (12 PCS / batch)
Standard Cell Dimensions	207 mm (H) x 135 mm (W) x 29 mm (T) (Customizable per top-cover drawing)
Electrolyte Baseline Weight	~300 g per cell (Adjustable based on cell capacity)
Injection Dosing Accuracy	$\pm 3\%$ ($\pm 0.3\%$ per head across 20-sample verification)
First-Pass Yield Rate	$\geq 99\%$ (Evaluated against $\pm 3\%$ tolerance standards)
Maximum Operating Efficiency	1 PPM (Fixture cycle/min; dependent on cell size, capacity, and electrolyte volume)
Operational Availability (Uptime)	$\geq 95\%$ (Continuous 24-hour production baseline)
Process Cycle Sequence	Manual Load → Auto Clamp → Vacuum Extraction → Liquid Fill → N2 Purge/Soak → Manual Unload
Configurable Parameters	Vacuum depth, vacuum holding time, nitrogen pressure, soak time, cycle repetitions
Vacuum Source Specification	Vacuum degree -0.095 MPa
Pneumatic / Air Requirements	0.4 to 0.6 MPa (Air flow rate: 100 L/min)

Specification Parameter	System Value / Requirement
Inert Gas (Nitrogen) Supply	Configured according to customer process and chemistry requirements
Electrical Power Rating	AC 220V, Single Phase, 50/60 Hz
Total Power Consumption	1.5 kW
System Net Weight	Approximately 0.8 Metric Tons (~800 kg)
Overall Machine Dimensions (L x W x H)	1400 mm x 800 mm x 1900 mm
Structural Finish & Appearance	Sheet metal in off-white / light grey; structural frame in industrial blue



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