KINTEK SOLUTION

Vacuum Electrolyte Filling Machine 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.

Isobaric High Precision Aluminum Shell Battery Liquid Injection Machine

Item Number: YY05

Introduction

Isobaric aluminum shell battery liquid injection machine for lithium battery production, supporting primary and secondary filling, vacuum pressure cycling, sealed positive pressure glovebox operation, accurate dosing, weighing, and stable high yield for demanding laboratory manufacturing workflows and advanced materials research.

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Application	Description	Key Benefit
Aluminum Shell Lithium Battery Production	Injects electrolyte into compatible aluminum shell cells through injection holes measuring 1.2 to 2.0 mm in diameter.	Provides controlled liquid filling across a broad range of cell sizes.
Battery Research and Development	Supports experimental primary and secondary injection procedures for new cell designs, electrolyte studies, and process development.	Allows researchers to adjust resting duration and filling sequences without changing the basic equipment platform.
Pilot-Scale Cell Fabrication	Provides a repeatable workflow from manual barcode scanning and weighing through automatic injection and final weighing.	Connects operator handling with measurable process checkpoints before scale-up.
Secondary Electrolyte Filling	Performs a second injection stage when the cell process requires additional electrolyte after initial filling and conditioning.	Supports more flexible cell conditioning and electrolyte management.
Moisture-Sensitive Battery Processing	Operates inside a sealed glovebox-style enclosure supplied with dry gas and maintained at positive pressure.	Limits entry of external atmosphere during injection operations.
Academic and Advanced Materials Research	Serves laboratories investigating battery materials, cell construction, and related electrochemical manufacturing processes.	Offers a defined, instrumented process for repeatable research batches.
Multi-Format Cell Development	Handles cells across the specified width, height, thickness, injection-hole edge distance, and hole-diameter ranges.	Reduces the need for separate equipment when compatible cell formats vary.

Parameter	Specification
Product Item Number	YY05
Injection method	Isobaric liquid injection
Compatible battery width L	50 to 180 mm
Compatible battery height H	80 to 210 mm
Compatible battery thickness W	25 to 75 mm
Injection hole edge distance D	Greater than or equal to 5 mm
Injection hole diameter	1.2 to 2.0 mm
Fixture configuration	One fixture included
Supported injection sequence	Primary injection and secondary injection

Parameter	Specification
Injection accuracy	Less than or equal to 8 per mille g
Injection pump type	Electronic ceramic variable pump
Number of injection pumps	One
Maximum single-stroke injection volume	Less than or equal to 15 g
Single-stroke injection quantity accuracy	15 g plus or minus 0.05 g
Resting method	Multiple resting stages with vacuum extraction and pressurization
Maximum vacuum degree during resting	Minus 0.09 MPa
Resting time	Any setting from 1 to 99 seconds
Resting and pressurization effect	Resting and pressurization time directly affects equipment efficiency
Electronic scale accuracy	Plus or minus 0.1 g
Electronic scale capacity	8000 g
Changeover time	No more than 30 minutes for an experienced operator
Equipment uptime	Greater than 98 percent
Uptime calculation note	Refers to equipment-caused failure rate; scheduled maintenance, pre-production preparation, and raw material changes are excluded
First-pass product qualification rate	Greater than or equal to 99.5 percent

Parameter	Specification
Power supply	AC 220 V plus or minus 10 percent, 50 Hz
Rated power	3 kW
Compressed air pressure	0.5 to 0.7 MPa, equivalent to 5 to 7 kgf/cm2
Compressed air consumption	10 L/s
Compressed air preparation	Drying, filtration, and pressure stabilization required
Vacuum source	Less than or equal to minus 0.098 MPa, 20 L/s
Environmental dew point	Less than minus 50 degrees C
Dehumidification equipment	To be provided by the customer
Installation floor load requirement	Greater than 500 kg/m2
Equipment weight	Approximately 2.0 T
Overall dimensions	1500 L x 1600 W x 2050 H; actual dimensions may vary

Item	Specification
Loading method	Operator manually scans and weighs the unfilled battery, then places it into the fixture
Filling operation	Automatic liquid injection with automatic high-pressure and low-pressure cycling
Unloading method	Operator manually removes the battery from the fixture
Post-process verification	Battery is scanned and weighed after injection
Enclosure design	Glovebox-style sealed cover
Internal atmosphere	Dry gas supplied inside the sealed chamber
Pressure condition	Positive pressure during operation; internal gas may escape while external gas cannot enter

Chemical Resistant Bottle Top Dispenser Laboratory Liquid Dispenser

Item Number: YY03

Introduction

Chemical resistant bottle top dispenser for precise laboratory liquid handling, offering 0.5 to 50 mL capacity, high temperature sterilization, PTFE FEP BSG and PP materials, excellent chemical compatibility, and dependable repeatability for demanding research workflows and routine quality control

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Application	Description	Key Benefit
Chemical Reagent Dispensing	Dispense acids, bases, solvents, and other laboratory reagents directly from storage bottles during sample preparation or routine testing.	Chemical-resistant wetted materials help support dependable service with demanding liquids.
Battery Materials Research	Deliver controlled volumes of electrolytes, solvents, additives, or processing liquids during electrode and cell-development experiments.	Repeatable dispensing helps reduce volume variation between research batches and test samples.
Advanced Materials Processing	Dose liquid binders, dispersants, modifiers, and other process fluids used in ceramics, powder metallurgy, and materials formulation.	Four capacity ranges support both small experimental batches and higher-volume preparation.
Pharmaceutical and Formulation Work	Transfer liquid ingredients during formulation development, laboratory batching, and controlled preparation procedures.	Defined accuracy and low coefficient of variation support consistent ingredient addition.
Quality-Control Laboratories	Dispense standard solutions, test reagents, and preparation liquids for repeated analytical or inspection procedures.	Stable, repeatable delivery improves workflow consistency across multiple samples.
Academic and Teaching Laboratories	Provide practical liquid-dispensing capability for chemistry, materials science, biology, and engineering experiments.	Simple operation, broad bottle compatibility, and economical maintenance support frequent shared use.
High-Cleanliness Workflows	Use high-temperature disinfection or sterilization as part of laboratory cleaning procedures where controlled equipment hygiene is required.	Sterilization capability supports repeatable cleaning protocols between applications.

Capacity range	Minimum graduation	Accuracy	Accuracy limit	Coefficient of variation	CV limit
0.5-5 mL	0.1 mL	A	≤±0.5% / 25 µL	CV	≤0.1% / 5 µL
1.0-10.0 mL	0.2 mL	A	≤±0.5% / 50 µL	CV	≤0.1% / 10 µL
2.5-25.0 mL	0.5 mL	A	≤±0.5% / 125 µL	CV	≤0.1% / 25 µL
5.0-50.0 mL	1.0 mL	A	≤±0.5% / 250 µL	CV	≤0.1% / 50 µL

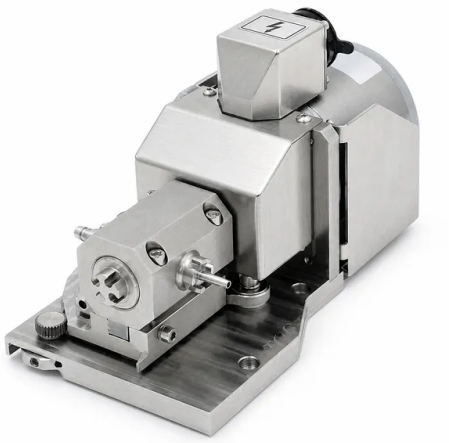
Capacity range	Minimum graduation	Accuracy	Accuracy limit	Coefficient of variation	CV limit
0.5-5 mL	0.1 mL	A	≤±0.5% / 25 µL	CV	≤0.1% / 5 µL
1.0-10.0 mL	0.2 mL	A	≤±0.5% / 50 µL	CV	≤0.1% / 10 µL
2.5-25.0 mL	0.5 mL	A	≤±0.5% / 125 µL	CV	≤0.1% / 25 µL
5.0-50.0 mL	1.0 mL	A	≤±0.5% / 250 µL	CV	≤0.1% / 50 µL

Parameter	Specification
Site-facing identifier	YY03
Construction materials	PTFE, FEP, BSG, PP
Maximum pressure resistance	500 mbar
Maximum viscosity resistance	500 mm2/s
Maximum liquid temperature	40°C
Maximum liquid density	2.2 g/cm3
Disinfection and sterilization	High-temperature disinfection and sterilization supported
Cleaning and maintenance	Simple and economical cleaning and maintenance design

Accessory	Specification
S40 bottle adapter	45/40 mm
GL32 bottle adapter	45/32 mm
GL38 bottle adapter	45/38 mm
GL25 bottle adapter	32/25 mm
GL28 bottle adapter	32/28 mm
Imported amber reagent square bottle	1 L

Single Head Electrolyte Filling Pump Precision Ceramic Metering System

Item Number: YY04



Introduction

Single head electrolyte filling pump provides precise low volume metering for lithium ion batteries pharmaceuticals food chemicals and adhesive fluids with durable ceramic valve technology easy cleaning reliable programmable operation for demanding production environments and flexible OEM integration

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Application	Description	Key Benefit
Lithium-Ion Battery Manufacturing	Delivers controlled electrolyte quantities during cell filling and related battery production processes. The wide stroke range supports micro-volume dosing and adjustable process requirements.	Stable filling accuracy and compatibility with demanding electrolyte handling environments.
Pharmaceutical Filling	Provides precision metering for small-volume pharmaceutical liquids where repeatability and cleanable fluid paths are important.	Programmable operation and online cleaning help support consistent, efficient filling cycles.
Food and Beverage Processing	Handles micro-quantity filling tasks involving compatible food liquids and process fluids. The stainless-steel pump body provides a durable fluid-contact structure.	Reliable dosing with a robust construction suited to repeated operation.
Chemical Liquid Dispensing	Measures and transfers compatible acidic, alkaline, abrasive, or chemically active fluids. Ceramic valve components and stainless-steel construction support demanding fluid conditions.	Improved resistance to chemical reaction, wear, temperature, and corrosion-related challenges.
Adhesive and Glue Filling	Dispenses compatible glue and adhesive materials in controlled quantities for laboratory or production use. The positive-displacement mechanism supports repeatable output.	Consistent metering for applications where fluid quantity directly affects assembly or process quality.
OEM Filling Equipment	Integrates into specialized filling machines, laboratory platforms, and automated liquid-handling equipment. The programmable controller and stepper-motor drive provide a practical control interface.	Flexible system integration with digitally adjustable motion parameters.

Parameter	Specification
Product Item Number	YY04
Pump valve material	Aluminum oxide ceramic Al2O3
Pump sleeve material	SUS304
Pump valve hardness	1800/HV0.5
Single-stroke range	0.05-3000ul
Stroke volume adjustment method	Gear adjustment
Maximum flow rate	750ml/min
Stroke accuracy	±3‰
Throughput speed	18-250r/min
Liquid inlet tubing	6.0x8.0mm

Parameter	Specification
Liquid outlet tubing	4.0x6.0nn
Tubing material	PE/PTEE
Overall dimensions	234x125x146mm
Weight	5.9kg
Control system	Programmable controller and touchscreen human-machine interface
Drive system	Single-axis 86-series stepper motor
Valve design	Special ceramic positive-displacement rotary plunger valve
Cleaning method	Online cleaning and disinfection through forward and reverse valve switching without disassembly
Fluid compatibility	Compatible with most fluids and designed for resistance to chemical reaction
Maintenance design	No dynamic sealing components or easily worn parts; pump body can be completely dismantled
Integration capability	Suitable for OEM use

Single Channel Adjustable Electronic Micropipette

Item Number: YY01

Introduction

Rechargeable single channel electronic micropipette with adjustable volume, ergonomic lightweight design, LCD operation, variable aspiration and dispensing speeds, and high accuracy for consistent laboratory liquid handling across battery research, materials science, analytical testing, and routine sample preparation workflows.

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Application	Description	Key Benefit
Battery Research Sample Preparation	Transfer electrolytes, reagents, and prepared liquid samples during battery material and cell-development experiments.	Supports controlled volumes and parallel sample preparation across repeated tests.
Advanced Materials Research	Handle liquid precursors, dispersions, and laboratory solutions used in materials development and characterization workflows.	Broad volume coverage allows one instrument family to support multiple experimental scales.
Analytical Testing	Prepare dilutions, standards, and test solutions where accurate volume transfer affects the quality of analytical results.	High accuracy and precision help reduce variation between prepared samples.
Academic Laboratory Instruction	Provide students and researchers with an electronic pipetting system that retains familiar manual-pipette operating logic.	The large LCD and combination knob make routine operation straightforward to learn.
Low-Volume Reagent Transfer	Transfer small quantities using the 0.5-10 uL configuration and its 0.01 uL increment.	Fine resolution supports controlled handling of limited-volume reagents and samples.
General Laboratory Sample Handling	Perform repeated aspiration and dispensing tasks across common laboratory preparation procedures.	Adjustable speeds and rechargeable operation improve workflow flexibility and convenience.
High-Volume Laboratory Transfer	Use the 100-1000 uL configuration for larger reagent, buffer, or sample transfers.	The highest available range reduces the need to divide larger transfers into multiple operations.

Product Identifier	YY01
Product Type	Electronic single channel adjustable micropipette
Power Source	Rechargeable lithium battery
Display	Large LCD screen positioned on the pipette body
Operating Control	Combination knob; all operations can be completed through the combination knob
Aspiration Speed	Adjustable
Dispensing Speed	Adjustable
Design	Ultralight, streamlined, ergonomically shaped
Accuracy and Precision	High accuracy and precision for accurate and parallel pipetting

Available Volume Range	Increment	Measurement Volume (uL)	Maximum Systematic Error, Accuracy (uL)	Maximum Systematic Error, Accuracy (%)	Maximum Random Error, Precision, s.d. (uL)	Maximum Random Error, Precision, CV (%)
0.5-10 uL	0.01 uL	10	±0.10	±1.0	±0.035	±3.5

Available Volume Range	Increment	Measurement Volume (uL)	Maximum Systematic Error, Accuracy (uL)	Maximum Systematic Error, Accuracy (%)	Maximum Random Error, Precision, s.d. (uL)	Maximum RandomError, Precision, CV (%)
0.5-10 uL	0.01 uL	1	±0.05	±0.5	±0.03	±3.0
5-50 uL	0.1 uL	50	±0.40	±0.8	±0.15	±3.0
5-50 uL	0.1 uL	5	±0.15	±0.3	±0.125	±2.5
30-300 uL	1 uL	300	±1.8	±0.6	±0.9	±3.0
30-300 uL	1 uL	30	±0.6	±0.2	±0.21	±0.7
100-1000 uL	5 uL	1000	±6.0	±0.6	±3.0	±3.0
100-1000 uL	5 uL	100	±2.0	±0.2	±0.6	±0.6

Laboratory Micro Manual Adjustable Single Channel Pipette

Item Number: YY02

Introduction

Laboratory micro manual adjustable single channel pipette with ergonomic lightweight design digital volume display broad 0.1-5000µL range autoclavable construction and convenient calibration support for precise laboratory liquid handling in demanding scientific environments

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Application	Description	Key Benefit
Battery Research Sample Preparation	Dispense electrolytes, solvents, additives, and liquid reagents during slurry development, cell assembly preparation, and materials screening.	Supports controlled addition of small quantities and improves repeatability between experimental batches.
Advanced Materials Research	Transfer solutions, dispersions, precursors, and chemical modifiers used in powder, ceramic, coating, and functional-material experiments.	Broad volume coverage accommodates both micro-scale formulation work and larger preparation steps.
Pharmaceutical and Analytical Testing	Prepare standards, dilute samples, and transfer reagents for laboratory testing workflows where visible volume settings and documented performance are important.	Helps operators verify settings quickly while maintaining consistent manual dispensing.
Polymer Testing and Formulation	Add catalysts, solvents, modifiers, and test liquids during polymer formulation, comparative testing, and process development.	Overlapping volume ranges allow selection of a suitable configuration for each formulation method.
Chemistry Teaching and Academic Laboratories	Support routine liquid transfer in undergraduate chemistry, research laboratories, and shared academic facilities.	Lightweight handling and straightforward adjustment make the equipment practical for frequent bench use.
Quality Control and Method Verification	Transfer defined sample and reagent volumes during inspection, comparative analysis, and repeatability checks.	Published accuracy and precision data provide a clear basis for method suitability evaluation.
General Laboratory Reagent Handling	Perform individual liquid transfers across research, development, and production-support laboratories.	Single-channel control is useful where samples require independent handling rather than multiwell parallel dispensing.

Site-Facing Identifier	Volume Range	Increment	Test Volume 1	Inaccuracy ± at Test Volume 1	Imprecision ± at Test Volume 1	Test Volume 2	Inaccuracy ± at Test Volume 2	Imprecision ± at Test Volume 2	Test Volume 3	Inaccuracy ± at Test Volume 3	Imprecision ± at Test Volume 3
YY02-01	0.1-2.5 µl	0.05 µl	2.5 µl	2.50%	2.00%	1.25 µl	3.00%	3.00%	0.25 µl	12.00%	6.00%
YY02-02	0.5-10 µl	0.1 µl	10 µl	1.00%	0.80%	5 µl	1.50%	1.50%	1 µl	2.50%	1.50%
YY02-03	2-20 µl	0.5 µl	20 µl	0.90%	0.40%	10 µl	1.20%	1.00%	2 µl	3.00%	2.00%
YY02-04	5-50 µl	0.5 µl	50 µl	0.60%	0.30%	25 µl	0.90%	0.60%	5 µl	2.00%	2.00%
YY02-05	10-100 µl	1 µl	100 µl	0.80%	0.15%	50 µl	1.00%	0.40%	10 µl	3.00%	1.50%
YY02-06	20-200 µl	1 µl	200 µl	0.60%	0.15%	100 µl	0.80%	0.30%	20 µl	3.00%	1.00%
YY02-07	50-200 µl	1 µl	200 µl	0.60%	0.15%	100 µl	0.80%	0.30%	50 µl	1.00%	0.40%
YY02-08	100-1000 µl	5 µl	1000 µl	0.60%	0.20%	500 µl	0.70%	0.25%	100 µl	2.00%	0.70%

Site-Facing Identifier	Volume Range	Increment	Test Volume 1	Inaccuracy± at Test Volume 1	Imprecision± at Test Volume 1	Test Volume 2	Inaccuracy± at Test Volume 2	Imprecision± at Test Volume 2	Test Volume 3	Inaccuracy± at Test Volume 3	Imprecision± at Test Volume 3
YY02-09	200-1000 µl	5 µl	1000 µl	0.60%	0.20%	500 µl	0.70%	0.25%	200 µl	0.90%	0.30%
YY02-10	1000-5000 µl	50 µl	5000 µl	0.50%	0.15%	2500 µl	0.60%	0.30%	1000 µl	0.70%	0.30%
YY02-11	2-10 ml	0.1 ml	10 ml	0.60%	0.20%	5 ml	1.20%	0.30%	2 ml	3.00%	0.60%

General Specification	Detail
Product Type	Laboratory micro manual adjustable single channel pipette
Overall Volume Range	0.1 µl-5000 µl
Operating Format	Manual, adjustable, single channel
Volume Display	Digital viewing window
Sterilization Capability	Half of the pipette can undergo high-temperature and high-pressure sterilization
Calibration and Maintenance	Accessory tool provided for convenient calibration and maintenance

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