



KINTEK SOLUTION

Prismatic Cell Equipment 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

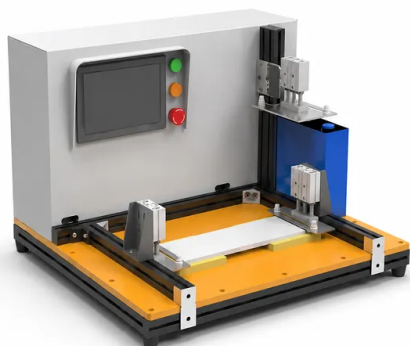
>>> About Us

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.



Prismatic Battery Automatic Testing And Sorting Equipment

Item Number: FX08



Introduction

Prismatic battery automatic testing and sorting equipment measures open circuit voltage and AC internal resistance, automatically pairs up to eight grades, supports traceable database management, and processes approximately 600 cells per hour for consistent pack quality in lithium battery production.

[Learn More](#)

Application	Description	Key Benefit
Prismatic lithium battery cell production	Tests open-circuit voltage and AC internal resistance before cells are assigned to performance grades.	Establishes a measured electrical basis for downstream cell sorting.
Battery pack cell pairing	Matches cells according to the specified electrical parameters in as many as eight groups during one sorting operation.	Supports improved consistency among cells selected for pack assembly.
Pack production quality control	Applies automatic test, sorting, marking, and unloading steps before cells proceed into pack manufacturing.	Helps protect pack quality through controlled cell classification.
Incoming-cell inspection	Evaluates cells supplied to a production operation using open-circuit voltage and AC internal-resistance measurements.	Creates retained measurement records for reviewed cell batches.
Edge-grade confirmation	Performs secondary testing on cells near a grade boundary using the stated voltage and resistance deviation controls.	Provides a closer check before assigning borderline cells to a group.
Production-line automation	Uses hopper batch loading, robotic grade sorting, and automatic unloading in a coordinated process.	Reduces manual involvement in repetitive test-and-sort handling.
Process performance monitoring	Stores cell performance data and presents automatically generated curve charts and bar charts for review.	Supports long-term observation of product quality trends.
Battery R&D and process improvement	Uses database records and software analysis to compare product-performance information over time.	Provides data that can guide formulation development and process-flow improvement.

Parameter	Specification
Site-facing equipment identifier	FX08 automated testing and sorting system
Core test functions	Open-circuit voltage testing; AC internal-resistance testing; sorting and pairing
Sorting parameters	Open-circuit voltage; AC internal resistance
Maximum sorting and pairing groups per operation	8 groups
Data acquisition	Automatic acquisition of AC internal resistance and open-circuit voltage
Sorting process control	Automatic
Loading method	Hopper batch loading
Sorting mechanism	Robotic automatic grade sorting
Unloading method	Automatic unloading
Marking mechanism	Inkjet marking mechanism
Computer and software	Industrial computer; software system; database function

Parameter	Specification
Data output	Automatically generated curve charts and bar charts; historical-data traceability; data export
Data retention	Long-term database management of cell performance data
Resistance measurement instrument	FX08 precision AC internal-resistance meter, 1 set
Voltage measurement instrument	FX08 automatic voltage meter, 1 set
Secondary test voltage deviation for edge grades	$\pm 0.1\text{mV}$
Secondary test internal-resistance deviation for edge grades	$\pm 0.05\text{m}\Omega$
Sorting efficiency	$\geq 10\text{PPM}$
Approximate testing and pairing capacity	Approximately 600 cells per hour
Product qualification rate	$\geq 99\%$
Equipment operation rate	$\geq 95\%$
Sorting qualification rate	$\geq 98\%$
Sorting accuracy	99.9%
Power supply	220V, 0.5KW
Air supply	0.5~0.6 Mpa (dry air)
Equipment weight	$\geq 300\text{KG}$
Overall dimensions	1600 (length) × 1600 (width) × 1700 (height) mm

Semi Automatic Z Fold Stacking Machine For Prismatic Lithium Ion Power Batteries

Item Number: FX05



Introduction

Improve prismatic lithium ion power battery production with a semi automatic Z fold stacking machine delivering controlled diaphragm alignment accurate electrode placement and dependable high yield stacking for demanding cell manufacturing lines for quality focused pilot operations daily.

[Learn More](#)

Application	Description	Key Benefit
Prismatic lithium-ion power cell manufacturing	Alternately stacks positive and negative electrodes with separator material in a Z-fold configuration for rectangular power-cell construction.	Controlled electrode and separator registration supports consistent stack formation.
Electric mobility battery pilot lines	Supports semi-automatic stack preparation during development and pilot production of prismatic cells intended for electric mobility programs.	Configurable layer count accommodates stacks within the applicable thickness range.
Stationary energy-storage cell production	Forms electrode/separator stacks for prismatic lithium-ion cells used in stationary storage manufacturing workflows.	Separator tension control and correction help maintain an orderly separator path.
Industrial battery process development	Provides a defined stacking sequence for teams evaluating electrode handling, stack alignment, and separator management in power-cell development.	Secondary positioning gives a repeatable electrode-location step before placement.
Cell assembly process validation	Enables process teams to review stack geometry and operational handling through specified alignment values for adjacent, overall, and separator-related registration.	Measurable alignment specifications provide clear process reference criteria.
Electrode handling with particulate-control requirements	Handles electrodes from material boxes through secondary positioning with dust-extraction provisions at both stages.	Localized extraction supports cleaner handling around feed and positioning operations.
Semi-automatic cell assembly stations	Integrates automatic stacking with manual tail winding, tape application, and finished-cell removal in a defined operator-supported sequence.	Balances automated stack formation with controlled manual completion tasks.

Parameter	Specification
Product Item Number	FX05
Stacking method	Z-fold stacking
Applicable process	Stacking process for prismatic lithium-ion power batteries
Stacking speed	1.3-1.6 s/pcs
Auxiliary time	15-20 s
Electrode-to-separator alignment accuracy	Center deviation +/-0.4 mm
Separator end-face alignment accuracy	+/-0.3 mm
Adjacent electrode alignment accuracy	+/-0.2 mm
Overall electrode alignment accuracy	+/-0.3 mm
Stacking layer count	Settable within the thickness adaptation range
Separator unwinding	Motor-driven active unwinding

Parameter	Specification
Separator control	Tension control and full-process correction
Electrode handling	Positive and negative electrodes retrieved from material boxes by reciprocating suction-cup manipulators
Electrode positioning	Secondary positioning platform before stacking
Stacking-table compression	Four cross-operating pressing-blade mechanisms
Blade protection mechanism	Blade slightly lifts away from electrode before withdrawal to prevent electrode pulling damage
Multiple-sheet and missed-sheet control	Material-box air blowing, sheet-separating brushes, and external-suction-cup manipulator sheet shaking
Dust extraction	Installed at material boxes and secondary positioning area
Separator outside wrapping	Machine reserves separator during empty stacking; manual tail winding and manual tape application
Cell completion	Separator cutting, cell transfer from stacking table, manual tape application, and manual cell removal
Qualification rate	99% (defects caused only by this machine)
Operating rate	98% (failures caused only by this machine)
Power	2 kW
Overall dimensions	W1550 x L1250 x H1850 mm
Weight / floor loading	Approx. 800 kg; >450 kg/m ²
Color	Computer gray; color-standard sample required if another color is requested
Power supply	AC220V single phase; voltage fluctuation +/-10%
Compressed air	0.5-0.7 MPa (5-7 kgf/cm ²), consumption 100 L/min
Ambient temperature	5-35C
Relative humidity	5-55% HR
Air / dust requirements	No saline gas, toxic gas, or corrosive gas; no conductive dust
Magnetic field and vibration requirements	No magnetic field affecting the equipment; no impact or clearly perceptible vibration

Manual Multifunctional Ocv Sorting Machine For Pouch Lithium Ion Cells

Item Number: FX10



Introduction

Manual multifunctional OCV sorting machine for pouch lithium ion cells, combining voltage and internal resistance testing, data binding, software grading, voice notification, and flexible cell compatibility.

[Learn More](#)

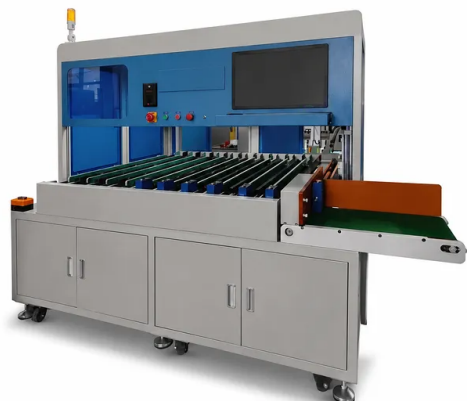
Application	Description	Key Benefit
Pouch Cell OCV Screening	Measure the open-circuit voltage of manually loaded pouch lithium-ion prismatic cells and classify results through host computer software.	Creates a structured voltage-based sorting workflow for battery evaluation.
Internal Resistance Classification	Collect internal resistance data after the cell is positioned on the fixture and the tester completes the measurement.	Supports electrical performance comparison and data-based cell grouping.
Battery R&D Laboratories	Use the manual station during cell development, sample verification, and engineering tests involving multiple pouch-cell formats.	Provides accessible testing and sorting for flexible research workflows.
Pilot Production Inspection	Apply the system to small-batch or pilot-scale inspection where operators need direct control over loading and unloading.	Combines manual handling flexibility with software-managed grading.
Cell Data Binding	Upload test results to the software system and associate measurements with individual cell processing records.	Improves traceability between tested cells, measured values, and assigned grades.
Grade-Based Tray Sorting	Transfer tested cells into corresponding grade blister trays after voice or software notification identifies the result.	Keeps downstream sorting organized and easy for operators to verify.
Multi-Format Pouch Cell Evaluation	Test compatible cells with overall lengths from 80 mm to 330 mm, tab spacing from 30 mm to 80 mm, and thicknesses from 0.5 mm to 5 mm.	Supports a broad range of specified cell geometries within one station.

Category	Parameter	Specification
Product identification	Model	FX10
Primary function	Testing and sorting	Manual OCV testing, internal resistance testing, data binding, and software-based grading
Applicable product	Cell type	Pouch lithium-ion prismatic cell
Operating method	Cell loading	Manual placement of the cell onto the fixture
Operating method	Test initiation	Light curtain starts the tester after cell placement
Operating method	Test completion	Tester completes measurement and uploads data to the software system
Operating method	Grade notification	Voice announcement of the grade; voice function can be disabled
Operating method	Cell unloading	Manual placement of tested products into corresponding grade blister trays
Included system	Computer	Computer system included
Included system	Tester	Tester included
Included system	Testing equipment	Testing equipment included

Category	Parameter	Specification
Included system	Software	Software system included for data upload, binding, and grading
Compatibility	Cell length A, including top sealing edge	30 mm
Compatibility	Cell width B	60 mm
Compatibility	Tab length C	≥8.5 mm
Compatibility	Overall length D	80 mm-330 mm
Compatibility	Tab spacing E	30 mm-80 mm
Compatibility	Cell thickness	0.5-5 mm
Equipment dimensions	External dimensions	10006601540 mm, length X width X height
Equipment dimensions	Final design note	Dimensions are subject to the final completed design
Installation environment	Air supply pressure	0.5~0.7 Mpa, supplied by the customer
Installation environment	Power supply	220 V, 50 Hz
Installation environment	Voltage fluctuation	Less than ±10%
Installation environment	Power capacity	1.5 KW
Installation environment	Electrical requirements	Grounding wire and phase-loss protection required
Installation environment	Floor load capacity	>100 kg/m ²
Physical characteristics	Approximate weight	Approximately 100 kg
Physical characteristics	Color	International warm gray

Prismatic Aluminum Shell Cell Automatic Sorting Machine

Item Number: FX11



Introduction

Automated prismatic aluminum shell cell sorting machine combines barcode traceability, precision voltage and internal resistance testing, and ten-grade classification to raise throughput, pairing consistency, and data control for battery manufacturing operations with reliable PLC handling, alarming, and local production records.

[Learn More](#)

Application	Description	Key Benefit
Prismatic lithium-ion cell grading	Sort aluminum-shell cells by programmed voltage and internal-resistance windows before cell grouping or downstream assembly.	Improves electrical consistency within selected cell groups.
Battery module preparation	Screen and classify cells before they are issued to module-production workstations.	Supports more controlled cell allocation for module build processes.
Cell manufacturing end-of-line inspection	Apply automated barcode scanning and electrical testing after cell production to separate qualified grades from nonconforming output.	Combines identification, testing, and routing in a single workflow.
Incoming cell inspection	Evaluate purchased or transferred prismatic cells before they enter controlled inventory or production.	Provides recorded voltage and resistance results for each scanned cell.
Battery R&D pilot lines	Classify development cells produced in small or medium batches where repeatable electrical grouping is required.	Reduces manual test-and-sort work while retaining parameter control.
Cell matching for pack preparation	Create multiple electrical bands for cells that will be manually collected into turnover boxes for subsequent handling.	Enables practical grouping across up to nine OK categories.
Manufacturing data collection	Capture barcode, voltage, internal resistance, time, and operating status during each sorting cycle.	Establishes a local production record and offers optional MES upload customization.

Parameter	Specification
Site-facing identifier	FX11
Equipment type	Automatic prismatic aluminum-shell cell barcode scanning, voltage testing, internal-resistance testing, and sorting equipment
Process flow	Manual cell loading into hopper -> belt transport -> automatic barcode scanning -> automatic voltage and internal-resistance testing -> routing to the corresponding grade slot according to set parameters -> industrial PC data recording and saving -> manual collection into corresponding turnover box
Control architecture	PC industrial computer plus PLC control
PLC responsibilities	Battery feeding and transport
Industrial PC responsibilities	Barcode scanner data collection, battery tester data collection, voltage and internal-resistance grade sorting
Input power, standard	3.6KW, 220V AC input, 50Hz/60Hz
Input power, export customized version	3.6KW, 110V AC input, 50Hz/60Hz (export only, customization required)
Operating air pressure	0.4-0.8Mpa
Compatible cell length	60-260MM

Parameter	Specification
Compatible cell thickness	20-80MM
Compatible cell height	100-220MM
Scanning device	Hikvision
Barcode compatibility	QR code and barcode compatible
Scan pass rate	99.5%
Standard tester configuration	FX11 standard high-speed tester
Standard tester voltage accuracy	plus or minus 0.00001V
Standard tester internal-resistance accuracy	plus or minus 0.01 milliohm
Optional tester configuration	FX11 optional Japanese tester configuration, additional cost required
Optional tester variants	FX11 optional tester configuration A or FX11 optional tester configuration B
Sorting module drive	400W servo motor
Sorting module characteristics	Accurate positioning and fast speed
Sorting channels	9 OK grade positions, 1 NG grade position
Maximum sorting grades	10 grades
Voltage setting range	0.00000V-6.00000V
Voltage test reading accuracy	plus or minus 0.00001V
Internal-resistance setting range	000.00 milliohm-999.99 milliohm
Internal-resistance test reading accuracy	plus or minus 0.01 milliohm
Production efficiency	no less than 550 cells/hour
Test effect	Repeated testing, excellent effect
Industrial PC processor	Intel N100 chip
Industrial PC operating system	Windows 10 system
Motion controller	Xinje PLC
Real-time production data display	Barcode / voltage / internal resistance / time / operating status
Data storage	Test data saved to industrial PC local disk
MES capability	MES data upload can be customized
Setup and operation	Simple commissioning; easy to learn and understand; built-in fault alarm
Power interruption protection	UPS power supply for unexpected power outages
Alarm and handling functions	Audible and visual alarm, automatic stop after sorting, clearing function, full-material alarm, fault alarm
Operating parameter configuration	Parameters can be set according to actual customer requirements
Structural materials	Quality thick cold-rolled sheet metal and aluminum-profile frame
Mobility	Universal movable casters
Machine dimensions	L1840W1810H1900MM
Dimensions with feeding conveyor removed	L1840W1420H1900MM

Parameter	Specification
Packing dimensions	L2000W1550H2050MM
Equipment weight	Approximately 680KG
Indoor temperature	-30°C~70°C
Indoor humidity	Below 75%
Factory-site requirement	No pollution and no strong electromagnetic interference

Pilot Line Prismatic Battery Automatic Electrolyte Filling Machine

Item Number: FX07



Introduction

Pilot line automatic electrolyte filling machine for prismatic power batteries delivers vacuum assisted precision dosing, 12 piece fixture handling, up to 1 PPM throughput, and repeatable production performance for demanding cell manufacturing operations.

[Learn More](#)

Application	Description	Key Benefit
Prismatic power battery pilot lines	Performs quantitative electrolyte filling for prismatic power cells during pilot-scale production.	Integrates vacuum filling, nitrogen filling, and dwell stages into a repeatable operating cycle.
Battery process development	Supports teams evaluating filling conditions by setting vacuum intensity, pressure-holding time, standing time, and cycle count.	Provides configurable process steps for process-focused development work.
Cell design validation	Handles the reference cell format of 207 mm height, 135 mm width, and 29 mm thickness, with some similar cell sizes compatible.	Establishes a defined fixture baseline for validating prismatic-cell filling operations.
Electrolyte dosing verification	Uses the stated +/-3 per thousand filling-accuracy criterion and a defined sampling method for filling heads.	Gives production teams a measurable basis for assessing dosing consistency.
Pre-production cell assembly	Supports manual fixture loading and unloading with automated positioning, clamping, evacuation, filling, nitrogen, and dwell operations.	Balances operator-managed material flow with an automated core filling sequence.
Continuous pilot manufacturing	Applies a utilization target based on 24 hours of continuous production and a maximum stated efficiency of 1 PPM.	Helps teams plan repeatable extended-run operations around documented performance indicators.

Parameter	Specification	Notes
Product item number	FX07	Site-facing identifier
Equipment purpose	Precise quantitative electrolyte filling for prismatic power batteries	Intended for the electrolyte filling process in prismatic power-battery production
Operating principle	Vacuum first, then electrolyte filling by absorption method	Fast, efficient, and precise filling process
Material handling	Manual loading and unloading of fixtures	Single-operator working method
Standard fixture quantity	1 set supplied with the equipment	Fixture is delivered randomly with the unit
Fixture capacity	12 PCS per load/unload	One fixture can load or unload 12 products at a time
Fixture reference battery	300 g electrolyte battery	Fixture baseline
Reference battery height	207 mm	Battery size used as fixture baseline
Reference battery width	135 mm	Battery size used as fixture baseline

Parameter	Specification	Notes
Reference battery thickness	29 mm	Battery size used as fixture baseline
Compatible battery formats	Some similar battery size specifications may be universal	Purchaser provides cover-plate dimension requirements and drawings
Main structural components	Battery fixture; filling mechanism; operating system and mechanical transmission	Core equipment composition
Maximum efficiency	1 PPM	Depends on battery size, capacity, and electrolyte weight; greater electrolyte filling amount results in lower efficiency
Utilization rate	>=95%	Based on statistics from 24 hours of continuous production
Filling accuracy	+/-3 per thousand	Empty shell; each filling head fills once; sampled once; 20 samples per filling head must meet this specification
Yield rate	>=99%	According to the +/-3 per thousand tolerance
Process sequence	Vacuum / nitrogen filling / standing	Vacuum intensity, pressure-holding time, standing time, and number of cycles can be set
Automatic cycle	Manual fixture loading -> automatic fixture positioning and clamping -> automatic vacuum electrolyte filling -> nitrogen filling / standing-station cycle -> manual fixture unloading -> end of work	Continuous cyclic operation
Overall dimensions	1400 x 800 x 1900 (L x W x H mm)	Equipment external dimensions
Weight	Approximately 0.8 ton	Equipment weight
Color	Sheet-metal gray-white; frame blue	Exterior finish
Compressed air pressure	0.4-0.6Mpa	Required compressed-air supply
Compressed air flow	100L/min	Required air flow
Vacuum source	Vacuum degree -0.095Mpa	Required vacuum condition
Nitrogen	Customer process requirement	Nitrogen provision is determined by customer process requirements
Power supply	AC220V	Electrical supply
Power	1.5KW	Rated power

Semi Automatic Z Fold Stacking Machine For Prismatic Lithium Ion Battery Cells

Item Number: FX04



Introduction

Semi automatic Z fold stacking machine for prismatic lithium ion battery cells delivers controlled separator handling, precise electrode alignment, defect prevention, and reliable cell transfer for demanding power battery production.

[Learn More](#)

Application	Description	Key Benefit
Prismatic power battery pilot production	Builds Z-fold electrode and separator assemblies for rectangular lithium-ion power cells within the supported cell dimensions.	Enables controlled transition from electrode-sheet preparation to assembled cell stacks.
Battery R&D cell prototyping	Supports development teams evaluating electrode sizes, separator materials, layer counts, and same-side tab configurations.	Adjustable layer count within the thickness range supports process experimentation.
Electrode and separator process validation	Repeats controlled unwinding, tensioning, web correction, pickup, secondary positioning, and pressing operations.	Provides defined alignment targets for evaluating stack-formation capability.
Quality-focused cell assembly	Applies air blowing, brush separation, handler shaking, and dust extraction at critical material-handling locations.	Helps control multiple-sheet pickup, missed sheets, and dust during assembly.
Scale-up from manual stacking	Integrates electrode pickup, positioning, separator shifting, pressing, cutting, and transfer into one equipment sequence.	Reduces dependence on fully manual layer placement while retaining operator tape application and cell removal.
Battery manufacturing process engineering	Allows teams to assess cycle timing, separator wrap allowance, manual tail handling, and transfer workflow for a defined cell format.	Makes operational interfaces and machine-controlled process steps clear for line planning.
Materials research laboratories	Assembles multilayer cells using electrode sheets and separator rolls that meet the stated incoming-material requirements.	Supports repeatable stacking studies across compatible sheet and separator dimensions.

Parameter	Specification
Site-facing identifier	FX04
Stacking method	Z-fold stacking
Applicable cell type	Prismatic lithium-ion power battery cell
Separator feed	Motor-driven active unwinding
Separator process controls	Tension control and web correction throughout the process
Electrode pickup	Vacuum-cup handling mechanism picks positive and negative electrode sheets from material boxes
Electrode positioning	Secondary positioning platform before stacking
Pressing arrangement	Four pressing-blade mechanisms with cross action
Blade retraction function	Blade lifts slightly before withdrawal to disengage from electrode sheet and prevent pulling damage
Multiple-sheet and missed-sheet controls	Material-box air blowing, sheet-separating brushes, external vacuum-cup handler shaking action
Dust extraction	Installed at material boxes and secondary positioning station

Parameter	Specification
Stacking completion	Separator cutting followed by cell transfer from stacking platform
Post-stack handling	Manual tape application and manual cell removal
Next-cell operation	Automatic stacking of the next cell begins while post-stack handling is performed
Separator outer wrap	Machine reserves separator during empty stacking; manual tail winding and manual tape application
Stacking speed	1.3-1.6 s/pcs
Auxiliary time	≤ 15 s
Electrode-to-separator alignment accuracy	Center deviation $\leq \pm 0.4$ mm
Separator end-face alignment accuracy	$\leq \pm 0.3$ mm
Adjacent electrode alignment accuracy	$\leq \pm 0.2$ mm
Overall electrode alignment accuracy	$\leq \pm 0.3$ mm
Stack layer count	Settable within the applicable thickness range
Qualified rate	$\geq 98\%$ (defects caused by this equipment only)
Availability	$\geq 95\%$ (failures caused by this equipment only)
Power	2 kW

Material	Incoming form	Length (mm)	Width (mm)	Thickness (mm)	Inner diameter (mm)	Maximum outer diameter (mm)
Electrode sheet	Sheet	50-150	30-90	0.07-0.25	----	----
Electrode tab	----	8-20	8-20	----	----	----
Separator	Roll	----	50-200	0.02-0.04	phi76.2	phi300

Cell parameter	Specification
Thickness H (mm)	5-20
Width W (mm)	30-90
Length L (mm)	50-150
Tab length Q (mm)	$Q \leq 20$
Tab width (mm)	≤ 20
Tab direction	Same side

Requirement	Specification
Electrode length definition	Dimension in the electrode-tab direction, excluding tab length
Electrode powder shedding	No obvious powder shedding
Electrode edge condition	No obvious wavy edge
Burr perpendicular to electrode direction	Less than 15 μ m
Die-cutting error	Less than 0.2 mm
Electrode flatness and deformation	Incoming electrodes shall have no obvious warpage or deformation
Electrode adhesion	Incoming electrodes shall have no obvious adhesion
Separator serpentine bending error	± 0.2 mm/1000 mm

Aluminum Steel Shell Lithium Battery Vacuum Steel Ball Sealing Machine

Item Number: FX06



Introduction

Vacuum steel ball sealing machine for aluminum and steel shell lithium batteries with dual chambers precise ± 0.1 mm positioning adjustable vacuum timing and 40-100 units per hour output for reliable cell closure in demanding laboratory production environments

[Learn More](#)

Application	Description	Key Benefit
Lithium battery pilot-line sealing	Performs vacuum and steel-ball closure for steel-shell and aluminum-shell lithium batteries during pilot-scale fabrication.	Alternating dual-chamber loading supports a practical manual production rhythm.
Battery R&D cell preparation	Supports researchers preparing shell-type cells where evacuation must occur before the closure ball is pressed.	Adjustable vacuum duration from 1 to 999 seconds enables process-specific setup.
60 Ah cell-format acceptance work	Provides the stated acceptance reference for 60 Ah battery products while accommodating the specified compatible dimensional range.	Gives procurement and process teams a defined basis for evaluating fit.
Aluminum-shell lithium cell assembly	Seals aluminum-shell cells using fixtures and steel-ball compatibility established from order-supplied samples.	Helps match the equipment interface to the intended shell and ball configuration.
Steel-shell lithium cell assembly	Handles steel-shell lithium batteries through fixture loading, feeding, evacuation, ball delivery, pressing, and venting.	Integrates the required closure sequence into one controlled station.
Glove-box-connected cell processing	Places the independent control cabinet outside the glove box while the equipment supports the associated cell-handling process.	Reduces corrosion exposure for the electrical control cabinet.
Laboratory process verification	Enables teams to assess ball-placement consistency, vacuum settings, cycle time, and finished-product results before wider implementation.	± 0.1 mm stated sealing deviation accuracy supports focused process evaluation.
Manual battery closure operations	Uses manual loading and unloading at the left and right work positions with automatic cylinder-driven internal actions.	Combines operator control at loading with a repeatable mechanical cycle.

Parameter	Specification
Site-facing item number	FX06
Applicable battery type	Steel-shell (aluminum-shell) lithium battery
Primary function	Vacuuming and steel-ball sealing
Workstation configuration	Left-right dual-chamber structure
Loading and unloading mode	Manual loading; dual left-right workstations for loading and unloading
Operating sequence	Place battery in fixed fixture → feed cylinder sends battery into ball-sealing area while the other fixture returns to loading position → sealing cylinder presses down → vacuum begins → steel-ball feed cylinder advances one ball → ball-sealing cylinder presses ball in → mechanisms reset → compressed air releases vacuum → the other battery enters the sealing area while the completed battery exits
Sealing process order	Vacuum first, then steel-ball sealing
Fixture arrangement	Upper and lower chambers have positioning devices

Parameter	Specification
Initial fixture size	Provided according to the battery model supplied with the order
Steel ball	User provides sample; steel-ball suitability is based on the ordered model/sample
Steel-ball storage	Storage trough with a certain holding capacity
Ball-sealing deviation accuracy	±0.1 mm
Vacuum setting method	Vacuum time and vacuum pressure value can be set simply on the panel
Vacuum value control	-85~90Kpa
Vacuum level stated in operating description	-85~95Kpa
Vacuum time	1~999 seconds, freely settable
Pressure-release control	0.1~0.6 Kpa
Electrical supply	220V/50HZ
Power	0.1kw
Compressed air	≥0.6mpa, 10L/min (user supplied)
Vacuum source	-0.09mpa, 40L/min (user supplied)
Production capacity	40-100ea/H (depending on worker operating proficiency)
Finished-product rate	≥98%
Acceptance product specification	Based on 60AH
Compatible battery thickness	20~60mm
Compatible battery width	50~150mm
Compatible battery height	100~220mm
Equipment noise	≤60 db
Equipment weight	Approximately 0.15T
Equipment dimensions	Length x width x height ≈900×430×1000mm
Main component surface treatment	Chrome treatment for rust and corrosion resistance
Electrical control arrangement	Independent control cabinet located outside the glove box
Operating characteristics	Safe and stable operation, reliable control, convenient operation

Prismatic Battery Manual Loading Machine Aluminum Shell Insertion Machine

Item Number: FX01



Introduction

Manual loading and aluminum shell insertion equipment for prismatic battery cells delivers adjustable positioning protective shell handling and dependable manual assisted assembly for battery manufacturing laboratories pilot lines and industrial production teams requiring repeatable cell enclosure operations daily.

[Learn More](#)

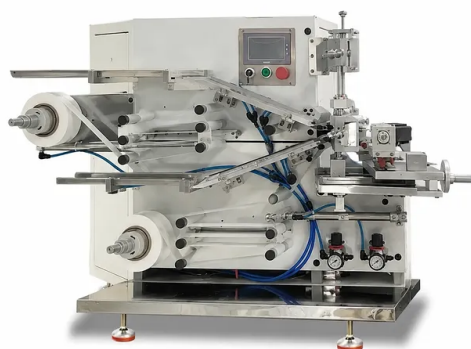
Application	Description	Key Benefit
Prismatic lithium-ion cell pilot production	Supports manual loading of prismatic battery cells and aluminum shells during pilot-line enclosure operations.	Provides a defined, adjustable workstation for developing and validating manual shell-insertion processes.
Battery R&D cell fabrication	Used when research teams need to assemble cells in aluminum housings while evaluating different compatible cell dimensions.	Fixture adjustment supports work across the specified thickness, width, and height range.
Cell-format changeover work	Supports processes where the active prismatic cell format changes within the supported dimensional envelope.	Tooling can be adjusted to achieve cell compatibility within the stated range.
Aluminum-shell enclosure operations	Positions the shell, expands its opening, and supports insertion of the battery cell into the enclosure.	Integrates shell-mouth expansion and transfer positioning in the same manual-loading process.
Battery process engineering	Enables engineers to evaluate insertion positioning, fixture settings, and manual completion procedures during process establishment.	Touch-screen adjustment of transfer movement data supports controlled position setting.
Low-volume or operator-led battery assembly	Applies where shells and cells are manually placed and operators remain actively involved in the enclosure sequence.	Maintains manual control while adding dedicated positioning mechanisms and transfer support.
Manufacturing quality verification	Supports review of equipment-related yield and operational reliability during prismatic-cell enclosure.	Published qualification and failure-rate targets provide measurable process evaluation references.

Item	Specification	Remarks
Site-facing identifier	FX01	Manual prismatic cell aluminum-shell insertion equipment
Process function	Manual insertion of prismatic battery cells into aluminum shells	
Production cadence	>=3-5 ppm	Determined by operator proficiency
Equipment overall dimensions	Length 1200 x Width 900 x Height 1800	
Compatible cell thickness	20-60 mm	Within the compatibility range, cell compatibility can be achieved by adjusting tooling
Compatible cell width	50-150 mm	Within the compatibility range, cell compatibility can be achieved by adjusting tooling
Compatible cell height	100-200 mm	Within the compatibility range, cell compatibility can be achieved by adjusting tooling
Equipment failure rate	<=2%	Failure rate = MTTR/(MTBF+MTTR)
Product qualification rate	>=99.95%	Refers only to product scrap caused by the equipment

Item	Specification	Remarks
Loading method	Manual loading	Operator manually places the aluminum shell and battery cell
Aluminum-shell loading location	Positioning mechanism provided	
Battery-cell loading location	Positioning mechanism provided	
Aluminum-shell handling requirement	No damage or scratches to the aluminum shell during operation	
Cell-positioning roller	Soft polyurethane roller	Presses and positions the battery cell
Aluminum-shell positioning and transfer mechanism	Module movement positioning	Position can be adjusted through the touch screen by setting movement data
Shell-mouth preparation	Shell suction mechanism expands the aluminum-shell opening before insertion	Facilitates cell insertion into the shell
Incomplete insertion method	Manual shell-press handle	Operator can press the cell into the shell to complete insertion when the cell is not fully in position

Semi Automatic Cylindrical Prismatic Lithium Ion Battery Winding Machine

Item Number: FX02



Introduction

Semi automatic cylindrical and prismatic lithium ion battery winding machine delivers consistent electrode alignment controlled tension and high throughput for research and pilot cell production with adaptable mandrels touchscreen settings and continuous separator handling for demanding laboratory workflows.

[Learn More](#)

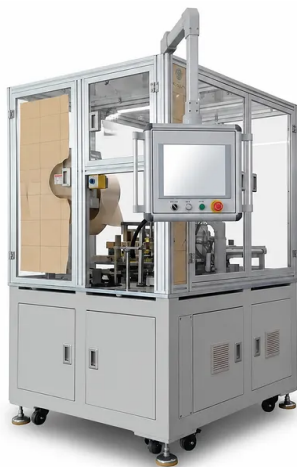
Application	Description	Key Benefit
Cylindrical lithium-ion cell development	Forms wound cylindrical cells using interchangeable Phi3.5-Phi5 mm mandrel assemblies. Operators load electrode sheets, and the system performs the winding and mandrel-withdrawal stages.	Supports cylindrical-format process development with a stated output of 5-7 ppm at the 750 mm electrode-length reference condition.
Prismatic lithium-ion cell development	Configures the winding process for prismatic cells through a combined winding-width range of 38-60. The selected mandrel assembly adapts the equipment to the required cell format.	Provides a defined prismatic winding configuration with a stated output of 3-5 PPM at the reference electrode length.
Oil-based electrode processing	Winds cells using oil-based electrode sheets together with applicable separator materials. The adjustable guide plate supports material entry into the winding process.	Allows the unit to be applied to electrode processing routes that use oil-based sheets.
Water-based electrode processing	Processes water-based electrode sheets within the same semi-automatic operating sequence. The loading order can be selected according to the process requirement.	Extends applicability to water-based electrode workflows without changing the core winding system.
Separator-integrity-focused cell assembly	Maintains a continuous separator through winding while controlling its tension relative to the electrode sheets.	Reduces manual contact during winding and supports consistent separator placement in the cell roll.
Capacity and resistance uniformity studies	Produces wound cells with relatively consistent electrode tension, separator tension, and material positions.	Supports evaluation of cell capacity and internal-resistance uniformity by improving consistency in the winding stage.
Process-route evaluation	Enables positive-electrode-first or negative-electrode-first sheet entry, with separator-overwrap or electrode-overwrap ending options.	Lets teams compare reference-backed loading and end-wrap configurations according to their established process requirements.

Parameter	FX02 Specification	Notes
Equipment application	Semi-automatic winding machine for cylindrical or prismatic lithium-ion batteries	Mandrel assemblies are changed to adapt to cylindrical or prismatic cell winding.
Operating sequence	Manual electrode-sheet loading, automatic mandrel withdrawal, automatic winding, manual tape application, and manual unloading	
Applicable electrode sheets	Oil-based electrode sheets; water-based electrode sheets	
Applicable separator materials	Various separator materials	
Feed-slot or guide-plate width	Adjustable, single-side adjustment	
Winding-shaft drive	Stepper motor drive	Maintains constant winding speed.
Winding accuracy	<=0.5 mm	

Parameter	FX02 Specification	Notes
Control parameter setting	Touchscreen operating interface; working parameters can be set	
Electrode entry method	Positive electrode first then negative electrode, or negative electrode first then positive electrode	Select according to process requirements.
Outer-wrap ending method	Separator outer wrapping or electrode-sheet outer wrapping	Select according to process requirements.
Cylindrical mandrel	Phi3.5-Phi5 mm	Cylindrical cell configuration.
Prismatic winding range	Combined width 38-60	Prismatic cell configuration.
Cylindrical production pace	5-7 ppm	Based on an electrode-sheet length of 750 mm. Actual cycle time depends on electrode length, operator proficiency, and electrode-sheet quality.
Prismatic production pace	3-5 PPM	Based on an electrode-sheet length of 750 mm. Actual cycle time depends on electrode length, operator proficiency, and electrode-sheet quality.
Qualified rate	>=98%	
Utilization rate	>=95%	
Equipment appearance color	International standard warm gray 1C	Customer-specified color is available.
Operating interface language	Chinese	
Equipment noise	80 dB	Measured 1 m from the equipment; excludes noise caused by materials, such as tape-peeling sound.
Equipment nameplate	Includes equipment name, model, power supply, and factory serial number	
Safety standard	Reference GB 5226.1	Mechanical, electrical, and protective safety requirements.
Compressed air	0.4 ~ 0.8Mpa, flow rate 50L/min	Required operating utility.
Ambient temperature	20 ~ 35°C	Required operating environment.
Relative humidity	5 ~ 55%HR	Required operating environment.
Environmental cleanliness	Not lower than Class 100,000	Site must be free of corrosive gases, liquids, and explosive gases.
Power supply	AC220V, single phase	
Voltage fluctuation	Less than +/-10%	
Power	1.0KVA	
Equipment weight	Approximately 200 kg	Subject to actual weight; total weight-to-load-bearing-area ratio <=500kg/m2.

Fully Automatic Z Type Stacking Machine For Prismatic Lithium Ion Battery Cells

Item Number: FX03



Introduction

Fully automatic Z type stacking machine for prismatic lithium ion battery cells delivers ± 0.3 mm electrode and separator alignment, controlled tension, dust-managed loading, automated tape application, and reliable high-yield cell-stack production for demanding battery manufacturing operations and development lines.

[Learn More](#)

Application	Description	Key Benefit
Prismatic lithium-ion cell stack production	Forms alternating positive and negative electrode layers with a Z-type separator path for square lithium-ion battery cells.	Automates the core cell-stack formation sequence with controlled alignment.
Battery cell development lines	Supports adjustable stacking-layer settings within the applicable thickness range during cell-development work.	Enables stack-layer configuration within the equipment's thickness capability.
Electrode and separator alignment processes	Positions electrode sheets and controls separator unwinding, tension, correction, and static elimination before and during stacking.	Maintains electrode-to-separator center deviation and separator end-face alignment at ± 0.3 mm.
Contamination-managed electrode handling	Uses separated positive and negative electrode handling areas, dust extraction, and non-metal suction rods during loading and secondary positioning.	Helps reduce cross-contamination risk between positive and negative electrode materials.
Defect-screened cell-stack assembly	Applies ultrasonic multi-sheet and missing-sheet detection plus electrode corner and tab inspection before stack formation.	Helps prevent multiple sheets, missing sheets, missing corners, and folded tabs from entering the cell stack.
Automated stack finishing and discharge	Cuts the separator, transfers the completed stack, applies tape, and automatically stacks finished cell assemblies for discharge.	Reduces manual handling between stack completion and taped-cell output.

Product Item Number	Parameter	Specification
FX03	Stacking process	Z-type stacking process for prismatic lithium-ion battery cells
FX03	Stacking speed	Single workstation: 1.0-1.2 s/pcs
FX03	Auxiliary time	10-15 s
FX03	Electrode-to-separator alignment accuracy	Center deviation ± 0.3 mm
FX03	Separator end-face alignment accuracy	± 0.3 mm
FX03	Adjacent electrode alignment accuracy	± 0.2 mm
FX03	Overall electrode alignment accuracy	± 0.3 mm
FX03	Stacking layers	Settable within the applicable thickness range
FX03	Outer-wrapped separator	No tail roll; the outer cell layer is a single separator layer
FX03	Yield	99% (defects caused by this equipment only)
FX03	Utilization rate	98% (failures caused by this equipment only)
FX03	Overall dimensions	W2350 x L1800 x H2200 mm (dimensions subject to final design)

Product Item Number	Parameter	Specification
FX03	Weight / floor loading	Approximately 2500 kg; >650 kg/m ²
FX03	Color	Computer gray; equipment branding and company information
FX03	Power supply	AC220V single phase; voltage fluctuation $\pm 10\%$; power: 4 kW; frequency: 50 Hz; British standard plug
FX03	Compressed air	0.5-0.7 MPa (5-7 kgf/cm ²); consumption 200 L/min
FX03	Ambient temperature	5-35°C
FX03	Relative humidity	5-55% RH
FX03	Air / dust requirements	No saline gas, toxic gas, or corrosive gas; no conductive dust
FX03	Magnetic field and vibration requirements	No magnetic field affecting the equipment; no impact or noticeable vibration

Process Stage	Automated Function	Control or Handling Method
Electrode loading	Positive and negative electrode sheets are loaded from material boxes and manually pushed into the equipment.	Separate positive and negative material-box handling arrangement.
Separator supply	Separator is fed into the stacking table.	Motor-driven active unwinding, tension control, integrated module correction, and static elimination.
Electrode pickup	Two robotic suction mechanisms remove positive and negative electrode sheets from their material boxes.	Sucker mechanisms with non-metal suction rods.
Secondary positioning	Electrode sheets are positioned before placement onto the stacking table.	Precision positioning platform with dust extraction.
Stack placement	The separator moves reciprocally to left and right positions for electrode placement.	Reciprocating stacking table.
Stack compression	Electrode sheets are pressed after placement.	Four compression-blade mechanisms operating in an alternating sequence.
Sheet separation inspection	Sheets are separated and checked before stack entry.	Material-box air movement, separation brushes, robotic servo vibration, and ultrasonic sensing.
Tab protection	Electrode tabs are held during the stacking process.	Independent suction cups for electrode tabs.
Corner and tab inspection	Electrode corners and tabs are checked during the process.	Four-corner electrode detection and electrode-tab detection.
Stack completion	The finished cell stack is removed, separator is cut, tape is applied, and the stack is discharged.	Robotic gripping, separator cutting, automatic tape application, separator-tail blowing, and automatic stacked discharge.

Prismatic Battery Barcode Scanning Inspection Eight Bin Sorting Machine

Item Number: FX09



Introduction

Prismatic battery barcode scanning inspection and eight bin sorting equipment combines OCV voltage and internal resistance testing with database upload MES connectivity and reliable automated classification for aluminum shell cell production lines requiring accurate traceable quality decisions at scale.

[Learn More](#)

Application	Description	Key Benefit
Prismatic aluminum-shell cell final inspection	Scan and electrically inspect prismatic aluminum-shell batteries after loading them onto the infeed belt.	Combines cell identification, voltage testing, resistance testing, and sorting within one operating sequence.
OCV-based cell grading	Direct cells into the configured process grades after voltage measurement.	Supports organized handling of cells according to defined voltage sorting requirements.
Internal-resistance classification	Use the specified resistance measurement ranges to support resistance-related selection or pairing criteria.	Provides an automated route from resistance measurement to instructed grade placement.
Battery cell matching preparation	Inspect cells before downstream grouping or matching operations where different voltage and internal-resistance conditions must be managed.	PC settings can be changed when the required detection and matching criteria differ.
MES-connected production monitoring	Connect the station with MES for real-time monitoring and retrieval of uploaded testing data.	Makes inspection and sorting information available to connected manufacturing systems.
Database-backed quality records	Record measurement results from the tester to the industrial control computer and upload the data to a database.	Supports retained, cell-associated records for review and production traceability.
Operator-loaded automated sorting lines	Use the system where personnel load cells and automated mechanisms perform pickup, inspection, conveying, and sorting.	Delivers a clear division between manual loading and automated processing steps.
Battery process grade management	Configure sorting grades in the PC when different voltage and internal-resistance products require different matching settings.	Enables the sorting layout to follow changing process requirements without altering the core handling sequence.

Parameter	Specification
Site-facing item number	FX09
Equipment function	Battery barcode scanning, inspection, database upload, MES connection for real-time monitoring and retrieval, and sorting to corresponding 8+1 grades according to process requirements
Applicable battery type	Prismatic aluminum-shell battery
Sorting configuration	8+1 grades
Operating sequence	Operator places battery on cell loading belt; front-end detection identifies the battery; pickup cylinder clamps the cell; barcode scanning and voltage/internal-resistance testing are completed; conveyor transfers the cell to the sorting station; PC-commanded sorting manipulator assigns the grouping grade
Polarity requirement for voltage and internal-resistance testing	Product voltage and internal resistance can be tested without distinguishing positive and negative terminals
Grade-setting adjustment	When voltage and internal-resistance products requiring detection and matching differ, grade settings must be changed on the PC

Parameter	Specification
Recommended probe replacement interval	1 month
Product yield	99.5% (only refers to product scrap caused by equipment reasons)
Capacity / speed	≥20PPM (varies slightly according to employee operating proficiency)
Equipment utilization rate	≥95% (only failures caused by the equipment)
Electrical supply voltage	220V 60Hz
Permitted voltage fluctuation	Less than ±10%
Equipment power	2.5KW
Air source requirement	≥0.6Mpa (provided by customer)
Voltage measurement resolution	0.1mV
Voltage measurement range	20V
Voltage measurement accuracy	±0.01%rdg.±3dgt
Resistance measurement ranges	3Ω and 30mΩ
Resistance measurement accuracy	±0.5%rdg.±5dgt
Applicable battery width	100-180mm
Applicable battery thickness	20-60mm
Applicable battery height	50*120mm
Base-frame construction	Load-bearing base frame with square-tube welded structure
Upper-frame construction	Sealed frame using aluminum-alloy profile structure with acrylic sealing
Operating interface	Independently operated industrial control computer and touchscreen for each unit
Layout and installation direction	Designed according to the layout drawing in the technical-agreement appendix
Ergonomic requirement	Machine design should provide good ergonomic performance



Kintek Solution

Head Quarter: No.89 Science Avenue, High-Tech Zone,
Zhengzhou, China

