



KINTEK SOLUTION

Electrode Die Cutting Machine Catalog

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COMPANY PROFILE

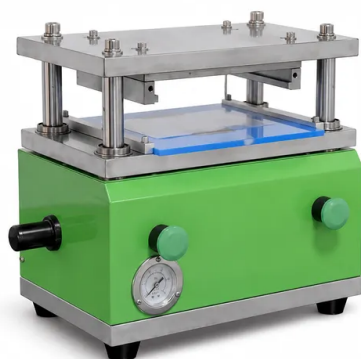
>>> About Us

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.



Laboratory Pneumatic Battery Electrode Sheet Die Cutting Machine

Item Number: MQ02



Introduction

Laboratory pneumatic battery electrode sheet die cutting machine delivers clean precise cuts for battery research with configurable tooling glovebox compatible pneumatic operation long die life and controlled burr performance for dependable electrode preparation in demanding laboratory workflows every day.

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Application	Description	Key Benefit
Lithium-ion battery electrode prototyping	Cuts coated anode and cathode sheets into controlled electrode profiles during laboratory cell-development work.	Supports repeatable sample preparation with ± 0.1 mm punching accuracy.
Glovebox cell assembly preparation	Forms electrode sheets inside a glovebox where the process gas matches the glovebox atmosphere.	Keeps the cutting operation compatible with enclosed handling workflows.
Electrode tab profile cutting	Produces electrode forms that include tabs within the maximum L150 mm cutting length.	Allows electrode and tab geometry to be formed in one cutting operation.
Battery material screening	Prepares consistent electrode specimens for comparative evaluation of coated materials and formulations.	Controlled burr limits help reduce edge-quality variation between samples.
Research-scale pouch-cell preparation	Cuts larger laboratory electrode pieces within a maximum W100 mm cutting width.	Provides a defined format for preparing sheets for research cell construction.
Coin-cell electrode sample preparation	Produces accurately shaped small electrode pieces from sheet material before assembly and testing.	Quick die replacement supports changing sample geometries during R&D.
University battery laboratories	Provides a compact cutting system for repeatable electrode preparation in academic research facilities.	Simple start-valve operation and a small footprint support practical shared-lab use.
Advanced materials sheet processing	Forms sheet-based materials where clean edges and controlled punching dimensions are required.	Four-column guidance supports stable, precise die movement during repeated cycles.

Parameter	Specification
Product Item Number	MQ02
Feeding method	Sheet electrode feeding
Cutting method	Die cutting using a knife die/template
Operating process	Place the electrode at the die-cutting position; press the start valve; the cylinder drives the die-cutting knife assembly upward to cut the electrode automatically; remove the electrode to complete the operation.
Glovebox use	Can be used inside a glovebox
Die replacement	Convenient and quick replacement
Die life	Normal use $\geq 30,000$ times
Cut quality	No burrs, powder shedding, or indentation marks
Guide structure	Four guide columns

Parameter	Specification
Vertical motion	Smooth upper-and-lower sliding with high precision
Vertical burr	$\leq 12\mu\text{m}$
Horizontal burr	$\leq 20\mu\text{m}$
Maximum punching size	L150mm including electrode tab $\times$ W100mm (customizable according to customer requirements)
Punching accuracy	$\pm 0.1\text{ mm}$
Punching pressure	Max. 1T (0.5MPa compressed air); recommended pressure for punching battery electrode sheets: 500Kg
Die-cutting stroke	35mm
Compressed air	0.5MPa compressed air; when used inside a glovebox, the gas shall be consistent with the glovebox gas
Overall dimensions	L350mmW230mmH300mm
Equipment weight	32kg
Mechanical assembly	Upper die knife mechanism, lower template mechanism, drive section, guide section, outer cover, and base section
Pneumatic components	Airtac
Bearing motion components	NSK/Taiwan Baolong
Routine cleaning requirement	Wipe the die-cutting knife plate and guide assemblies frequently to keep them clean.
Lubrication requirement	Lubricate linear-motion areas of the ball guide columns and guide sleeves to maintain smooth movement.
Long-term storage requirement	When not used for an extended period, clean moving-part surfaces and apply anti-rust oil for protection.
Fastener inspection requirement	Inspect screws, nuts, pins, and other fasteners regularly to prevent loosening and avoid equipment-quality and personal-safety incidents.

Metal Electrode Sheet Die Cutting Machine

Item Number: MQ10



Introduction

Precision metal electrode sheet die cutting machine for battery positive and negative electrodes delivers stable dimensions low burrs infrared positioning and safeguarded pneumatic operation with custom tooling for diverse cell formats.

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Application	Description	Key Benefit
Battery R&D electrode preparation	Cuts positive and negative electrode sheets for prototype cell development after electrode materials are ready for blanking.	Controlled sheet geometry with burrs no greater than 12 micrometers and no edge collapse.
Cell-format development	Uses customer-designed die shapes to prepare electrode blanks for different battery sizes during format evaluation.	Custom tooling supports project-specific electrode dimensions and shapes.
Laboratory cell assembly	Produces electrode pieces before downstream assembly work in battery research laboratories.	A direct load, position, dual-start, cut, and remove workflow supports repeatable preparation.
Pilot-line electrode sampling	Creates defined electrode samples for process checks and development-stage evaluation.	Stable punching dimensions help maintain comparable sample formats across repeated cycles.
Positive electrode sheet processing	Forms cathode sheet blanks using the precision concave and convex metal die arrangement.	Precision-guided cutting supports consistent formed edges and dimensions.
Negative electrode sheet processing	Forms anode sheet blanks for laboratory and pilot battery workflows.	Infrared positioning assists accurate material placement before each cutting cycle.
Custom battery component trials	Supports electrode blanking when a research program requires a nonstandard outline or size within the available cutting area.	Customer-required die design expands format flexibility without changing the core equipment.

Parameter	Specification
Site-facing identifier	MQ10
Equipment application	Metal die-cut forming of battery positive and negative electrode sheets
Die configuration	Concave and convex metal dies
Punch die material	SKD11
Cutting method	Precision cutting with a metal die cutting knife set
Positioning device	Infrared positioning device
Cutting accuracy	Burrs $\leq 12\mu\text{m}$, no edge collapse
Tooling life	More than 1 million operations (while maintaining the specified burr level)
Regrinding capability	Up to 10 regrinds
Maximum cutting size	Max. L120*W100mm; can be designed according to customer requirements
Cutting efficiency	5 times/minute
Maximum cylinder pressure	300kg

Parameter	Specification
Die-cutting stroke	40mm
Power supply	220V/50Hz
Power	0.1KW
Compressed air	0.5Mpa□ 0.8 Mpa
Overall dimensions	L480xW420xH630mm
Equipment weight	110kg
Safety protection	Safety light curtain at the feed inlet; dual-start-button safety operation
Die handling	Convenient die removal and installation
Operating sequence	Place the electrode sheet in the die-cutting position, press the dual start buttons, allow the cylinder to drive the metal die cutting knife set downward for automatic cutting, then remove the formed electrode sheet
Exterior construction	Sheet-metal exterior with a three-dimensional geometric design

Manual Benchtop Battery Electrode Sheet Cutting Knife

Item Number: MQ07



Introduction

Manual benchtop battery electrode sheet cutting knife with 380 mm cutting length, high speed tool steel blade, pressure bar, ruler, and stable base for laboratory cell research and aluminum plastic film preparation workflows in demanding materials research laboratories.

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Application	Description	Key Benefit
Battery electrode preparation	Cut positive electrode sheets to the required laboratory sample dimensions before cell assembly or downstream testing.	Supports organized and repeatable preparation of cathode material samples.
Negative electrode preparation	Prepare negative electrode sheets for coin-cell, pouch-cell, or other laboratory battery development workflows where manual sheet cutting is appropriate.	Provides a dedicated cutting method for anode research activities.
Pouch-cell component preparation	Cut aluminum plastic film used in pouch-cell development and related packaging preparation tasks.	Extends one benchtop tool across both electrode and cell component preparation.
Battery R&D laboratories	Perform routine material cutting during formulation studies, process trials, and prototype cell preparation.	Offers a direct manual workflow that can adapt quickly between experiments.
Academic materials research	Support teaching laboratories and research groups investigating electrochemical materials, electrode structures, and cell fabrication methods.	Delivers an accessible preparation tool for controlled laboratory work.
Pilot process development	Prepare electrode and film samples during early-stage process evaluation before larger-scale equipment selection.	Helps researchers assess material handling requirements at laboratory scale.
Advanced materials research	Use the unit for controlled cutting of relevant sheet-form materials in materials science experiments where the specified cutting length is suitable.	Provides a defined working platform and integrated dimensional reference.

Parameter	Specification
Model	MQ07
Primary application	Cutting positive and negative electrode sheets; cutting aluminum plastic film
Cutting length	380 mm
Base plate dimensions	380 mm × 300 mm
Blade material	High speed tool steel
Pressure bar	Included
Ruler	Included
Weight	3.5 KG

Semi Automatic Electrode Laser Cutting Machine

Item Number: MQ11



Introduction

Semi automatic electrode laser cutting machine for lithium ion battery pilot lines delivers fast precision cutting clean dust control reliable handling and consistent production performance with simple software rapid changeover stable fiber laser and high yield results for advanced research

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Application	Description	Key Benefit
Lithium Ion Battery Pilot Lines	Cuts positive and negative electrode sheets into specified outer profiles for small-batch cell production and process verification.	Supports repeatable electrode preparation with a qualification rate of $\geq 99.5\%$.
Battery R&D Laboratories	Enables researchers to evaluate electrode geometries, tab configurations, and cutting parameters during experimental development.	Simple parameter changes and graphical operation accelerate iteration and rapid changeover.
Power Battery Electrode Prototyping	Processes electrode materials sized from 50 mm to 300 mm, including tabs, for prototype power-cell programs.	High-speed laser movement and accurate positioning shorten preparation time.
Positive Electrode Processing	Handles incoming positive electrode material with thicknesses from 60-250um, including applications requiring ceramic layer cutting.	Controlled cutting conditions support profile formation while limiting heat affected area.
Negative Electrode Processing	Cuts negative electrode sheets for laboratory cells, trial batches, and pilot manufacturing workflows.	Vacuum adsorption stabilizes the sheet during cutting and transfer.
Small Batch Cell Fabrication	Provides an automated cutting step between electrode preparation and cell assembly in compact experimental lines.	Compact installation and lower equipment cost suit development-scale production.
Electrode Process Validation	Allows engineering teams to verify cutting speed, dimensional accuracy, dust control, and material response before scale-up.	Measurable performance limits provide a practical basis for process qualification.

Specification Category	Parameter	Value	Notes
Product Identification	Site-facing identifier	MQ11	Semi automatic electrode laser cutting machine
Functional Capability	Primary function	Cutting the outer profile of power lithium ion battery electrodes	Operator loads the electrode, and the system completes positioning, laser cutting, and return transfer
Incoming Material	Maximum incoming material size	300mm*300mm	Includes tabs
Incoming Material	Minimum incoming material size	50mm*50mm	Includes tabs
Incoming Material	Incoming material thickness	60-250um	Positive electrode requires ceramic layer cutting
Incoming Material	Incoming material dimensional accuracy	$\pm 1\text{mm}$	
Laser Processing	Laser cutting method	Laser cutting path	
Electrode Output	Electrode length	50-300mm	Includes tabs
Electrode Output	Electrode width	50-300mm	Includes tabs
Cutting Performance	Laser cutting speed	$\geq 200\text{mm/s}$	

Specification Category	Parameter	Value	Notes
Cutting Performance	Electrode dimensional accuracy	±0.2mm	
Cutting Performance	Dissolved bead size	≤10um	
Cutting Performance	Heat affected zone	≤120um	
Cutting Performance	Metal leakage	≤50um	
Environmental Performance	Equipment noise	≤75 db	Measured at a distance of 1M from the machine
Utilities	Equipment power supply	AC380V±5%,□□ 50Hz	
Utilities	Equipment air supply	Compressed air 0.5-0.6Mpa	
Physical Configuration	Equipment dimensions	□ 1200×1200×1700□□)	Main body
Physical Configuration	Appearance color	Standard warm gray 1C	If required by the customer, a color card must be provided
Physical Configuration	Equipment weight	□ 500Kg	
Production Performance	Product qualification rate	≥99.5 %	
Production Performance	Equipment operating rate	≥95%	
Operating Environment	Adaptable ambient temperature	0-50 C°	

Polymer Lithium Battery Electrode Sheet Manual Punching Machine

Item Number: MQ05



Introduction

Manual punching machine for polymer lithium battery electrode sheets combines 10T pneumatic hydraulic force, precise platen parallelism, adjustable timing, dual-button operation, and light-curtain safety for consistent laboratory electrode die cutting.

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Application	Description	Key Benefit
Polymer lithium battery electrode preparation	Punch coated polymer-cell positive and negative electrode sheets after sheet cutting and before cell assembly.	Provides a defined manual punching sequence for converting larger sheets into die-cut electrode pieces.
Battery R&D laboratory prototyping	Prepare electrode pieces for experimental polymer lithium battery cells where material batches, coatings, and die shapes may change frequently.	Adjustable punching time and manual die loading support flexible research workflows.
Pilot-line electrode processing	Support pre-assembly punching of electrode sheets in pilot-scale battery process development.	Less-than-4-second no-load cycle supports repetitive preparation activities.
Electrode quality-control sample preparation	Produce punched electrode samples from prepared sheets for downstream inspection, comparison, or cell-build evaluation.	Platen parallelism of no more than 0.15 mm supports consistent die engagement.
Battery cell assembly support	Create punched electrode components for polymer lithium battery assembly operations.	The 10T pneumatic-hydraulic cylinder supplies a defined punching-force platform for die cutting.
Advanced materials research	Punch suitable sheet-form research materials using a die-based, manually controlled process where the application procedure permits.	Two working-area options allow the equipment footprint to be matched to die and sheet size requirements.
Academic battery teaching laboratories	Demonstrate a controlled electrode punching sequence in laboratory-scale polymer lithium battery fabrication.	Two-button actuation and safety light curtain protection support a more disciplined operating process.

Parameter	MQ05-400	MQ05-500
Site-facing identifier	MQ05-400	MQ05-500
Intended application	Polymer lithium battery electrode-sheet punching	Polymer lithium battery electrode-sheet punching
Booster cylinder	10T pneumatic-hydraulic booster cylinder	10T adjustable pneumatic-hydraulic booster cylinder
Nominal cylinder capacity	10T	10T
Cylinder adjustment	Not specified	Adjustable
Upper and lower working area	400 x 400 mm	500 x 500 mm
Upper platen thickness	40 mm	40 mm
Lower platen thickness	40 mm	40 mm
Upper and lower platen parallelism	<=0.15 mm	<=0.15 mm

Parameter	MQ05-400	MQ05-500
No-load compressed-air operation cycle	Less than 4 seconds	Less than 4 seconds
Punching-time control	OMRON time relay; punching time adjustable	OMRON time relay; punching time adjustable
Start-delay control	Hydraulic start delay adjustable	Start delay adjustable
Operating method	Dual-button operation	Dual-button operation
Power source	Compressed air (5-8 atmospheres)	Compressed air (5-8 atmospheres)
Safety system	Safety light curtain and safety control	Safety light curtain and safety control
Positioning aid	Not specified	Laser positioning
Main structural material	45# steel for major structural components, electroplated	45# steel for major structural components, electroplated
Sheet-metal finish	Baked gray-white paint	Baked gray-white paint
Approximate overall dimensions (L x W x H)	Not specified	Approximately 750 x 760 x 1850 mm
Basic configuration	10T pneumatic-hydraulic booster cylinder; safety light curtain; safety control; OMRON time relay	10T adjustable pneumatic-hydraulic booster cylinder; safety light curtain; safety control; OMRON time relay; laser positioning
Operating sequence	Place the cut large electrode sheet on the die, push the die to the punching position, press both start buttons to close the upper die, then release the buttons to open the upper die and complete punching.	Not specified

Automatic Battery Electrode Sheet Cutting Machine

Item Number: MQ06



Introduction

Automatic battery electrode sheet cutting machine delivers programmable length cutting or fiber sensor tracking, 500 mm maximum width, adjustable 1-8 m/min speed, and precise pneumatic cutting for consistent electrode preparation in battery research, laboratory, and pilot-line production environments.

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Application	Description	Key Benefit
Battery electrode sample preparation	Cuts electrode sheets to controlled dimensions before downstream cell-assembly work in battery R&D.	Programmable lengths and ± 0.25 mm cutting accuracy support consistent sample formats.
Electrode development laboratories	Prepares repeated electrode-sheet pieces for formulation, coating, and process-development evaluations.	Touchscreen length setting, quantity control, and adjustable speed support changing experimental requirements.
Pilot-scale battery cell fabrication	Processes electrode sheets for pilot-line workflows where repeatable dimensions and visible counts are required.	A 500 mm maximum cutting width and adjustable 1-8 m/min speed support controlled pilot-scale throughput.
Sensor-referenced electrode cutting	Cuts electrode sheet when a fiber sensor detects the required tracking position.	The fiber-sensor tracking mode provides a defined alternative to length-only cutting.
Fixed-length electrode-sheet production	Produces pieces according to an operator-defined length set through the touchscreen.	The feed-and-pneumatic-cut sequence creates a controlled cutting cycle for repeated pieces.
Long-run standard cutting operations	Runs repeat cutting jobs using the standard configuration's adjustable 0.25-10 m cutting length range.	Quantity and count settings from 1-99,999 support higher-volume programmed cutting tasks.
Electrode-sheet incoming material processing	Converts roll-fed electrode sheet stock into specified pieces using a pneumatic expanding unwinding shaft.	Tension-control components and driven rollers provide an organized route from unwinding to cutting.
Advanced materials sheet processing	Supports cutting of electrode sheets and similar sheet materials in laboratory and materials-processing environments.	The two available configurations let users select the sensing, length, and unwinding arrangement appropriate to the task.

Parameter	MQ06 Fixed-Length and Fiber-Sensor Tracking Configuration	MQ06 Standard Configuration
Cutting method	Fixed-length cutting and fiber-sensor tracking cutting	Automatic cutting with photoelectric eye
Operating principle	Stepper motor drives rubber transmission rollers to feed the electrode sheet; pneumatic cylinder actuates the cutting blade when the set length is reached or the photoelectric sensor detects position	Imported stepper motor and driver with rubber and steel feed rollers; photoelectric eye and pneumatic cutting cylinder
Maximum cutting width	500 mm	500 mm
Cutting length	Can be set freely	0.25-10 m adjustable
Positioning accuracy	Not specified	± 0.5 mm
Cutting accuracy	± 0.25 mm	± 0.25 mm
Cutting quantity setting	1-9999 freely set	1-99999 freely set
Count setting	1-9999	1-99999
Cutting speed	1-8 m/min, adjustable	1-8 m/min, adjustable
Edge-cutting accuracy	± 0.5 mm	± 0.5 mm

Parameter	MQ06 Fixed-Length and Fiber-Sensor Tracking Configuration	MQ06 Standard Configuration
Cut-edge flatness	±0.5 mm	Not specified
Unwinding arrangement	Unwinding section, unwinding motor, and tension-control mechanism	Pneumatic-shaft unwinding with magnetic-powder tension-control mechanism and magnetic-powder clutch
Unwinding shaft	Ø75 pneumatic expanding shaft	Ø75 pneumatic expanding shaft
Drive components	Stepper motor and driver; unwinding motor	Imported stepper motor and driver
Feed rollers	Rubber transmission rollers	Rubber roller and steel roller set
Material-holding component	Not specified	Material-pressing cylinder
Cutting actuator	Airtac cutting cylinder	Airtac cutting cylinder
Blade	Inlaid high-speed-steel blade	SKD11 blade
Sensor	Fiber sensor for tracking	Photoelectric eye
HMI and control	Taiwan Weinview touchscreen; Panasonic PLC	Taiwan Weinview touchscreen; Panasonic PLC
Overall equipment dimensions (L × W × H)	1060x910x1350 mm	1200x1000x1100 mm
Power supply	AC220V/50HZ	AC220V/50HZ
Power	2.5KW	1.5KW
Equipment weight	Approx. 380KG	Approx. 1.0 ton
Packaging dimensions (L × W × H)	115013001650 mm	Not specified
Packaging weight	Approx. 430kg	Not specified

Automatic Battery Electrode Sheet Die Cutting Forming Machine

Item Number: MQ04



Introduction

Automatic battery electrode sheet die cutting forming machine delivers 30-40 cycles per minute, ≤ 0.1 mm cutting accuracy, ≤ 0.015 mm burrs, and $\geq 98\%$ qualified output for reliable lithium battery production with stable web handling and precise closed loop alignment control.

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Application	Description	Key Benefit
Lithium Battery Electrode Production	Automatically die cuts positive or negative electrode roll material into configured sheet formats for downstream cell fabrication.	Improves dimensional consistency and reduces manual cutting labor.
Battery Pilot Lines	Supports repeatable electrode forming during pilot-scale process validation and production transfer.	Provides controlled throughput and programmable batch quantities.
Laboratory Battery R&D	Processes electrode rolls for coin cell, pouch cell, and other research-oriented assembly workflows where repeatable samples are required.	Reduces variation between test samples and improves experimental repeatability.
Electrode Material Development	Handles electrode materials with thicknesses from 20 to 180 μm during formulation and coating studies.	Supports comparison of material batches with controlled cutting conditions.
High-Precision Sheet Preparation	Produces electrode sheets with cutting accuracy of ≤ 0.1 mm and burrs of ≤ 0.015 mm when operated within specified conditions.	Helps maintain clean edges and consistent active-area dimensions.
Advanced Materials Research	Provides automated roll-to-sheet conversion for thin functional materials used in battery and materials research.	Combines alignment, tension control, and automatic collection in one process.
Small-Batch Manufacturing	Produces defined quantities using touchscreen-configured die-cutting counts and step precision.	Makes short runs easier to manage while limiting unnecessary material waste.

Parameter	Specification
Product Identifier	MQ04
Application	Automatic die cutting and forming of lithium battery electrode sheets
Incoming Material Format	Roll stock
Maximum Incoming Material Width	≤ 300 mm
Maximum Incoming Roll Diameter	≤ 400 mm
Incoming Material Thickness	20-180 μm
Product Size Range	350 × 350 mm
Production Speed	30-40 cuts/min
Qualified Product Rate	$\geq 98\%$
Equipment Fault Rate	$\leq 5\%$; faults caused by the equipment only
Cutting Dimension Accuracy	≤ 0.1 mm

Parameter	Specification
Burr Height	≤0.015 mm
Finished Material Collection	Automatic flow into receiving tray
Edge Trim Handling	Automatic edge-trim collection

Parameter	Specification
Electrical Supply	AC220 ±10%
Power Consumption	≤4.5 kW
Compressed Air Requirement	≥0.6 MPa
Weight	2.0 T
Overall Dimensions	3200 × 1250 × 1500 mm, length × width × height

Function or Assembly	Configuration and Performance
Unwinding Control	Variable-frequency motor with position-detection potentiometer for intelligent variable-speed unwinding
Tension Control	Floating roller mechanism maintains suitable electrode tension
Web Alignment	Precision servo correction mechanism with alignment sensor and high-precision closed-loop control
Feeding Drive	Servo motor with precision planetary reducer
Feed Roller Surface	Nitrile rubber roller
Die-Cutting Station	Single high-speed die-cutting station
Main Control System	PLC program control
Operator Interface	Touchscreen for setting step precision and die-cutting quantity
Lower Die Platform Adjustment	Stepper motor controlled vertical movement with touchscreen adjustment for each upward or downward step displacement
Edge-Trim Collection Drive	Speed-adjustable motor
Edge-Trim Conveyor	Pull-belt collection system using a brown-paper conveyor belt

Assembly	Main Components
Unwinding and Alignment Assembly	Painted square-tube main frame, variable-frequency motor, servo push rod, brown surface-hardened aluminum roller, plated metal components, and aluminum alloy components
Front Roller Assembly	Plated metal components and plated metal roller drum
Paired-Roller Feeding Assembly	Plated metal base, servo motor, planetary reducer, nitrile rubber roller, tape-joining pressing cylinder, and tape-joining stainless steel platform
Die-Cutting Assembly	Cast machine base with metal transmission and moving components
Edge-Trim Collection Assembly	Speed-adjustable motor, plated metal roller drum, aluminum alloy side panels, and brown-paper conveyor belt

Semi Automatic Pouch Cell Electrode Sheet Die Cutting Machine

Item Number: MQ03



Introduction

Semi-automatic pouch cell electrode die cutting machine with infrared positioning, adjustable 3T or 5T force, +/-0.1 mm precision, 800-2000 pieces per hour, clean edges, and safe light curtain protection for reliable battery research and scalable laboratory production workflows.

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Application	Description	Key Benefit
Pouch Cell Electrode Prototyping	Cuts cathode and anode sheets into repeatable pouch-cell formats during early-stage battery development.	Supports consistent electrode dimensions and faster iteration between cell designs.
Lithium-Ion Battery Cell Assembly	Prepares electrode pieces before stacking, alignment, tab positioning, and pouch-cell assembly.	Reduces edge defects that could interfere with downstream cell assembly.
Battery R&D Laboratories	Provides repeatable sample preparation for researchers evaluating electrode materials, loading levels, and cell configurations.	Offers higher throughput than manual cutting while retaining operator flexibility.
Pilot-Scale Cell Fabrication	Processes small batches of electrode sheets for process validation and pre-production trials.	Bridges the operational gap between hand tools and fully automatic production equipment.
Advanced Materials Research	Cuts experimental sheet materials and coated samples into controlled test geometries.	Enables efficient preparation of multiple samples for comparative testing.
University and Academic Research	Supports teaching laboratories and research groups conducting battery fabrication or materials-processing experiments.	Combines compact dimensions, straightforward operation, and practical safety protection.
Custom Electrode Formats	Handles project-specific cutting dimensions when customers require formats beyond the standard working sizes.	Provides a customizable preparation platform for specialized cell designs.

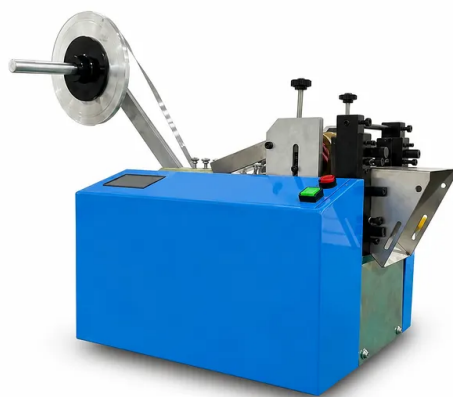
Parameter	MQ03 280 mm Variant	MQ03 320 mm Variant
Maximum cutting size	280 including tab x 180 mm; customizable according to customer requirements	320 including tab x 240 mm; customizable according to customer requirements
Booster cylinder	3T	5T
External dimensions	L580 x W455 x H900 mm	L700 x W440 x H970 mm
Equipment weight	170 kg	220 kg

Parameter	Specification
Vertical burr	<=15 um
Horizontal burr	<=20 um
Die service life under normal use	>=30,000 operations
Cutting accuracy	+/-0.1 mm

Parameter	Specification
Die-cutting stroke	150 mm
Capacity	800-2000 EA/H; sheet-material die-cutting efficiency is slightly lower
Power supply	220 V/50 Hz
Power	100 W
Compressed air	0.5 MPa-0.8 MPa
Cutting-force and speed adjustment	Gas-liquid booster cylinder drive; cutting force and cutting speed are adjustable
Standard cutting quantity	2 pieces per cycle
Cutting quantity range	1-8 pieces per cycle, depending on electrode size
Positioning system	Infrared positioning device
Feed protection	Safety light curtain at the equipment feed opening
Main mechanical assemblies	Feed guide section, upper die assembly, lower template assembly, drive section, guide section, external cover and frame, base section, and discharge section
Electrical and standard components	Electrical control components, booster cylinder, pneumatic components, bearings and motion components, and safety light curtain
Electrical control components	Omron / Chint or equivalent
Booster cylinder supplier	Taiwan Jiuli / Xintuo or equivalent
Pneumatic components	SMC / Taiwan Airtac
Bearing and motion components	NSK / Taiwan Baolong
Safety light curtain	SUNX or equivalent
Operating method	Place the electrode sheet at the die-cutting position, press the foot valve, allow the booster cylinder to drive the die set downward, and remove the finished electrode after cutting
Routine cleaning	Regularly wipe the die-cutting plate and guide components to keep them clean
Lubrication	Apply lubricant to the linear-motion areas of the ball guide columns and guide bushings to maintain smooth movement
Long-term storage	When the equipment will remain unused for an extended period, wipe moving-component surfaces clean and apply rust-preventive oil
Fastener inspection	Periodically inspect screws, nuts, pins, and other fasteners to prevent loosening and reduce the risk of equipment or personal safety incidents
Operating safety	Do not place hands or other body parts in the die, ball guide column and bushing movement areas, or other hazardous zones during operation
Multi-person operation	Operation by two or more people at the same time is prohibited to prevent unintended injury
Service restrictions	Unqualified personnel and unauthorized personnel must not disassemble or adjust the equipment
Electrical service restriction	Circuit components must not be disassembled without authorization

0.1Mm 10M Nickel Strip Cutting Machine

Item Number: MQ09



Introduction

Precision nickel strip cutting machine for battery manufacturing processes, handling copper, aluminum, copper foil tape, and nickel strip with adjustable cut lengths, widths from 0.1 to 100 mm, and dependable 150 cuts per minute throughput for laboratory production teams.

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Application	Description	Key Benefit
Battery nickel strip preparation	Cuts battery nickel strip to the required length and width before downstream battery-related fabrication or research activities.	Adjustable 1 mm to 100 m length setting supports different prepared-strip requirements.
Copper foil processing	Processes copper foil into defined strip sections for laboratory material preparation and related battery workflows.	Accommodates cutting widths from 0.1 to 100 mm.
Aluminum foil preparation	Cuts aluminum foil strip materials where controlled dimensions are required before subsequent handling or assembly.	Provides a specified cutting speed of 150 cuts per minute.
Copper foil tape conversion	Prepares copper foil tape in selected lengths for research, development, and process preparation tasks.	Freely adjustable length setting reduces dependence on fixed-length cutting arrangements.
Electrode-material laboratory workflows	Supports strip-material preparation involving foil and nickel-strip inputs used in battery R&D environments.	One unit is specified for copper foil, aluminum foil, copper foil tape, and battery nickel strip.
Advanced materials sample preparation	Cuts compatible metal and non-metal strip materials into dimensions suited to experimental and evaluation workflows.	ARM-based control and SKD-11 high-speed steel cutter form a defined cutting configuration.
Production-preparation stations	Provides repeated cutting of stated strip materials for organized pre-processing activities.	150 cuts per minute provides a clear throughput reference for process planning.
Academic materials research	Helps research teams prepare foil, tape, and strip specimens with selectable lengths and widths.	Compact 360300350 mm dimensions support installation planning in space-conscious laboratories.

Parameter	Specification
Site-Facing Identifier	MQ09
Primary Use	Cutting various metal and non-metal strip materials, including copper foil, aluminum foil, copper foil tape, and battery nickel strip
Control Mode	Latest-generation ARM control system
Motor System	High-power AC motor
Cutter Material	Imported SKD-11 high-speed steel
Belt Material	Imported belt
Cutting Length	1mm~100m freely adjustable
Cutting Width	0.1~100mm
Cutting Speed	150 knife/min
Input Power	AC/220V/50,60Hz
Power	Maximum power 500W

Parameter	Specification
Overall Dimensions	360300350mm
Weight	26KG

Laboratory Compact Hydraulic Positioning Die Cutting Machine

Item Number: MQ01



Introduction

Compact hydraulic positioning die cutting machine for laboratory battery electrode and lithium foil preparation delivers accurate burr free cuts glovebox compatibility and protected adjustable pressure control for reliable research cell fabrication workflows with fast die changes daily use

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Application	Description	Key Benefit
Lithium-Ion Battery Electrode Preparation	Die cutting of positive and negative electrode sheets into required specimen or cell-component shapes during battery research.	Produces accurate cuts with a specified precision of ± 0.1 mm and avoids burrs, powder shedding, and pressure marks.
Lithium Sheet Cutting	Cutting and forming lithium sheets for laboratory battery work where enclosed material handling is needed.	Compact equipment can be placed and operated inside a glovebox.
Battery R&D Cell Fabrication	Preparation of electrode components before downstream laboratory cell assembly activities.	Quick die replacement supports changes between cutting geometries used in research workflows.
Coin Cell Research Sample Preparation	Forming small electrode pieces for battery research sample sets and comparative material studies.	A maximum punching size of 120x80mm accommodates compact electrode-sheet cutting tasks.
Electrode Material Development	Preparing consistently shaped positive or negative electrode specimens while evaluating active-material formulations and coating conditions.	Hydraulic cutting without vibration supports stable forming of electrode sheets.
Academic Battery Laboratories	Teaching and research laboratories preparing battery electrode or lithium-sheet samples in limited laboratory space.	Small overall dimensions and straightforward manual operation suit compact laboratory environments.
Glovebox Battery Processing	Enclosed preparation of lithium sheets and electrode pieces in workflows that require glovebox placement.	The unit can be positioned within the glovebox while retaining pressure observation through its embedded gauge.
Repetitive Electrode Cutting	Routine cutting of electrode sheets for ongoing battery R&D programs.	Die life of at least 30,000 cycles under normal use supports repeated laboratory preparation.

Parameter	Specification
Product Item Number	MQ01
Suitable Materials	Battery positive electrode sheets, battery negative electrode sheets, lithium sheets
Primary Function	Die cutting and forming
Maximum Punching Size	120x80mm (can be customized according to customer requirements)
Punching Precision	± 0.1 mm
Die-Cutting Stroke	35mm
Drive Method	Hydraulic drive
Pressure Observation	Embedded pressure gauge
Pressure Protection	Built-in safety relief oil valve; adjustable pressure and settable pressure upper limit
Guided Structure	Four guide posts
Die Replacement	Convenient and quick replacement

Parameter	Specification
Die Life	≥30,000 times under normal use
Cut Quality	No burrs, powder shedding, or pressure marks
Operating Characteristics	No vibration and no oil leakage during die cutting
Structural Material	High-strength chrome steel
Surface Treatment	Environmentally friendly electroplating and spray coating treatment
Glovebox Use	Can be placed and operated inside a glovebox
Overall Dimensions	223170325mm
Weight	25kg
Manual Operating Sequence	Place electrode sheet; tighten oil-release valve handwheel clockwise to the limit position; repeatedly move hand lever to raise and press; loosen handwheel counterclockwise by half a turn for automatic die opening and part removal

Fully Automatic Lithium Ion Battery Electrode Sheet Die Cutting Machine

Item Number: MQ08



Introduction

Fully automatic lithium ion battery electrode sheet die cutting machine integrates unwinding, alignment, tab forming, CCD inspection, dust removal and rewinding for accurate high speed continuous coated electrode production.

[Learn More](#)

Application	Description	Key Benefit
Power lithium battery electrode production	Forms tabs on continuously coated roll electrode sheets for power battery manufacturing processes.	Integrates roll handling, tab cutting, inspection, and rewinding for a coordinated production sequence.
Lithium ion cell electrode preparation	Produces electrode sheets with lengths from 150-500 mm, including the tab, for subsequent cell assembly operations.	Supports controlled electrode dimensions with specified accuracy of +/-0.2 mm.
Continuous coating line downstream processing	Handles coated electrode rolls after continuous coating, using automatic unwinding and correction before die cutting.	Reduces manual roll handling within the electrode forming process.
Electrode tab manufacturing	Creates formed electrode tabs while maintaining stated burr limits in both longitudinal and transverse directions.	Supports edge-quality control with longitudinal burrs <=15 um and transverse burrs <=10 um.
In-line electrode quality inspection	Uses CCD defect detection and CCD dimensional detection during continuous electrode processing.	Adds inspection functions directly into the production workflow.
High-volume electrode roll conversion	Processes feed rolls with an outside diameter of >=750 mm and weight of <=500Kg, then automatically rewinds output rolls.	Supports sustained material processing with production speed >=35 m/min.
Battery manufacturing process control	Provides defined performance targets for product qualification rate and equipment failure rate.	Supports production planning around a qualified-product rate >=99.5% and equipment failure rate <=2%.

Parameter	Specification
Product Item Number	MQ08
Primary Function	Power lithium battery electrode sheet forming for continuous coating processes
Applicable Material Form	Roll electrode sheet / continuous coated electrode sheet
Process Functions	Automatic roll electrode unwinding; electrode correction; tab die cutting; CCD defect inspection; electrode dust removal; CCD dimensional inspection; automatic electrode rewinding
Electrode Sheet Length	150-500mm (including tab)
Feed Roll Core Inner Diameter	6 inch
Feed Roll Outside Diameter	>=750mm
Feed Roll Weight	<=500Kg
Take-Up Roll Outside Diameter	<=750mm
Equipment Production Speed	>=35M/min (design >=45M/min)

Parameter	Specification
Electrode Sheet Dimensional Accuracy	+/-0.2mm
Mold Life	More than 1 million cycles per use; more than 10 grinding operations
Longitudinal Burr	<=15um
Transverse Burr	<=10um
Rewinding Neatness	+/-1mm
Equipment Noise	<=75 db (at a distance of 1M from the machine)
Electrical Supply	AC380V+/-5%, three-phase 50Hz
Starting Power	<=40Kw
Operating Power	<=30Kw
Air Supply	Compressed air 0.5-0.6Mpa
Air Consumption	1000L/min
Equipment Dimensions	Approximately 9500x2300x2700 (main body)
Standard Appearance Color	Standard warm gray 1C; customer color requests require a color card
Equipment Weight	Approximately 15000Kg
Qualified Product Rate	>=99.5%
Equipment Failure Rate	<=2%
Applicable Ambient Temperature	0-50 C°



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