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 ≥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	≤12μm
Horizontal burr	≤20μm
Maximum punching size	L150mm including electrode tab × W100mm (customizable according to customer requirements)
Punching accuracy	±0.1 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	L350mm*W230mm*H300mm
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.