Z Shaped Semi Automatic Stacking Machine

Item Number: RB06

Introduction

Z shaped semi automatic stacking machine for lithium ion cell research delivers automated electrode alignment controlled separator tension and accurate programmable Z stacking for flexible prototype assembly in glovebox compatible laboratory workflows with adjustable fixtures vacuum pickup HMI operation.

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Application	Description	Key Benefit
Lithium-ion pouch-cell R&D	Assemble Z-stacked positive electrode, negative electrode, and separator layers for laboratory pouch-cell prototypes.	Automated positioning and programmed layer counts improve repeatability during sample builds.
Metallic lithium cell development	Stack metallic lithium using the specified 6–8 s per-sheet operating rate, with the desktop unit positioned in a glovebox when required.	Supports controlled-atmosphere assembly workflows for lithium-containing experimental cells.
Electrode formulation screening	Build comparable multilayer test cells after evaluating different cathode or anode formulations.	Defined alignment performance helps keep stack construction consistent between formulation samples.
Separator-material evaluation	Use roll-form separator material under automatic servo constant-tension control during Z-shaped cell-stack assembly.	Provides a controlled separator-feed method for comparative separator trials.
Cell-format prototyping	Adjust positioning fixtures to handle supported electrode widths and lengths for evolving research cell dimensions.	Allows one laboratory platform to accommodate multiple supported prototype sizes.
Academic battery laboratories	Prepare sample stacked cells for university research into electrode materials, separators, and cell architectures.	Combines manual sheet loading with automated layering for practical research-scale operation.
Pilot process development	Establish and observe a repeatable Z-stacking sequence before transferring a cell concept to a larger production process.	PLC/HMI operation and preset stack quantities create a structured laboratory process reference.
Solid-state and advanced-cell studies	Assemble experimental multilayer structures where layer registration and controlled separator handling are part of the research procedure.	Pulse-motor adjustment and vacuum-assisted placement support careful stack setup.

Parameter	Specification
Product Item Number	RB06
Stacking Method	Z-shaped stacking, separator is roll type
Operating Method	Robotic automatic pick-and-place stacking; automatic separator pulling with constant-tension control
Sheet Pickup Vacuum	Better than -65Kpa
Stacking Accuracy	Neatness ≤±0.3mm (relative position dimension between electrode sheets, stacking layers 25)
Electrode Width	40□ 90mm
Electrode Length	40□ 100mm (tab direction, excluding tab dimension)
Electrode Tab Length	Max.15mm
Stack Thickness	Max.15mm
Maximum Stack Layer Setting	Max.100
Separator Roll Diameter	Max. 200mm

Parameter	Specification
Separator Roll Core	3-inch roll core, expanding shaft clamping
Stacking Speed: Electrode Sheets	4□ 6S/sheet
Stacking Speed: Metallic Lithium	6□ 8S/sheet
Stacking Speed Note	Does not include stacking preparation time for each cell
Power Supply Voltage	Single-phase AC220V±10% (customizable 110VAC)
Power Supply Frequency	50Hz/60Hz
Power	0.4KW
Air Supply	0.5~0.8MPa
Equipment Dimensions	L800*W600*H720mm
Weight	120Kg