

Lithium Ion Battery Z Type Semi Automatic Stacking Machine

Item Number: RB05



Introduction

Lithium ion battery Z type semi automatic stacking machine combines controlled separator tension, foot pedal operation, precise alignment, and digital timing for efficient research sample preparation and small batch cell prototyping.

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Application	Description	Key Benefit
Lithium-ion battery R&D sample preparation	Assemble Z-stacked positive electrodes, negative electrodes, and separator material for development cells.	Supports structured preparation of research samples with specified alignment better than ± 0.5 mm.
Small-batch cell trial production	Prepare repeated stacked-cell assemblies for limited trial runs before larger-scale process decisions.	Semi-automatic operation improves efficiency compared with manual stacking.
Electrode format evaluation	Evaluate electrode sheets and tab arrangements within the stated 44 mm x 44 mm to 200 mm x 150 mm stacking range.	Broad supported dimensions allow teams to assess multiple cell-size concepts on one unit.
Separator handling studies	Use the automatic tension-control system while forming Z-shaped separator layers between electrodes.	Controlled separator handling supports orderly layer formation during process evaluation.
University battery laboratories	Produce stacked cell samples for academic battery research, teaching laboratories, and experimental studies.	Straightforward adjustment, operation, and maintenance suit frequently changing research work.
Pilot-line workflow development	Establish repeatable operator procedures using foot-pedal cylinder control, counting, zeroing, and digital timing.	Built-in operating functions support clear, repeatable trial workflows.
Cell assembly process comparison	Compare manual and semi-automatic stacking approaches when assessing stack neatness and operating efficiency.	The unit is designed to provide higher stacking efficiency and improved neatness relative to manual stacking.
Multi-format prototype development	Build prototypes with tabs on the long side within the maximum stated stack dimensions.	Defined maximum dimensions and tab orientation help teams plan compatible prototype formats.

Parameter	Specification
Site-facing item identifier	RB05
Stacking process	Z-shaped stacking of positive electrode sheets, negative electrode sheets, and separator material
Separator movement	Cylinder drives separator movement left and right
Separator control	Automatic tension-control system
Stacking mode	Semi-automatic
Stacking accuracy	Neatness better than ± 0.5 mm
Minimum stacking size, including tab length	L44 mm x W44 mm; smaller sizes require replacement of the pressing plate
Maximum stacking size, including tab length	L200 mm x W150 mm; tabs on the long side
Maximum stacking thickness	12 mm; thicker stacks require replacement of the adjustment plate
Maximum separator roll diameter	220 mm
Control method	Foot switch controls cylinder action

Parameter	Specification
Operating functions	Automatic counting and zeroing
Timing display	Digital timer
Parameter retention	Automatically retains the last-used parameter status after power loss or non-use
Equipment dimensions	L512 mm x W820 mm x H580 mm
Weight	Approximately 50 kg
Power supply voltage	Single-phase 220 VAC +/-10%; 110 VAC can be customized
Power supply frequency	50 Hz/60 Hz
Power	200 W
Compressed-air supply	0.4~0.6 MPa compressed air