

Pouch Cell Vacuum Pre Sealing And Top Side Sealing Machine For Lithium Battery Fabrication

Item Number: CC10



Introduction

Designed for lithium battery pouch cell fabrication, this dual-mode vacuum pre-sealing and top side sealing machine delivers high-integrity seals up to 250°C, deep -95 kPa evacuation, precise ± 0.1 -second timing, and reliable automatic edge alignment across demanding research environments.

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Application	Description	Key Benefit
Lithium-Ion Pouch Cell Pre-Sealing	Evacuation and initial thermal sealing of liquid electrolyte-filled pouch cells prior to formation cycles.	Eliminates internal gas pockets and achieves -95 kPa deep vacuum to guarantee uniform electrolyte wetting across electrode layers.
Pouch Cell Top & Side Sealing	Primary atmospheric thermal bonding of top and side edges on aluminum laminated film cases before filling.	Delivers consistent 6 mm soft-seal welds with precise $\pm 2^\circ\text{C}$ temperature control, preventing pinholes and barrier layer damage.
Solid-State Battery Packaging	Hermetic sealing of solid-state pouch cells requiring high mechanical pressure and precise edge alignment.	Maintains edge distance tolerances within 0.5 mm, safeguarding delicate internal ceramic or polymer electrolyte separator layers.
Sodium-Ion Battery Development	Vacuum packaging and final sealing of alternative-chemistry pouch cells sensitive to ambient moisture and air ingress.	Provides repeatable dwell times with ± 0.1 -second precision, ensuring reproducible barrier integrity for novel chemical formulations.
Supercapacitor Pouch Encapsulation	High-integrity sealing of non-aqueous electrical double-layer capacitors (EDLC) and hybrid supercapacitor cells.	Uniform heat distribution prevents thermal degradation of current collectors and volatile non-aqueous solvents.
Pilot-Line Cell Quality Assurance	Rapid prototyping, sample batch assembly, and destructive weld-strength verification in battery testing facilities.	Flexible manual commissioning mode and adjustable baffles enable rapid changeovers between diverse cell dimensions.

Specification Parameter	Technical Value / Detail (CC10)
Product Identifier	CC10
Operational Modes	Vacuum Pre-Sealing Mode / Top & Side Sealing Mode (Rotary Switch Selection)
Maximum Pouch Cell Dimensions	350 mm (L) $\times$ 350 mm (W) $\times$ 12 mm (H)
Maximum Sealing Temperature	250 $^\circ\text{C}$
Temperature Control Accuracy	$\pm 2^\circ\text{C}$
Temperature Controller Type	Omron Precision Digital Controller
Sealing Dwell Time Range	1 – 99 seconds (Fully Adjustable)
Timer Precision	± 0.1 seconds
Sealing Head Configuration	Soft seal, 6 mm width
Pneumatic Cylinder Specification	AirTAC Pneumatic Cylinder, Bore: $\varnothing$ 63 mm
Edge Alignment Accuracy	Self-guiding heads; sealing edge distance from pouch edge ≤ 0.5 mm
Achievable Vacuum Level	≥ -95 kPa
Vacuum Measurement System	Panasonic Digital Display Vacuum Gauge

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Automation & Control Core	PLC Control System with Precision Time Relays
Mechanical Adjustability	Manual tuning mode, movable positioning baffles, and integrated air filter mesh
Enclosure Integration	Split-type design; electrical control box positioned externally to glovebox
Overall Equipment Dimensions	630 mm (L) × 420 mm (W) × 730 mm (H)