

Fully Automatic Mechanical Battery Sealing Machine For Cylindrical Cell Assembly

Item Number: CC12



Introduction

Engineered for high throughput cylindrical cell manufacturing this fully automatic mechanical battery sealing machine provides precise progressive crimping pneumatic height calibration and fast forty five PPM throughput with ninety nine percent yield for premium industrial cell assembly operations worldwide

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Application	Description	Key Benefit
Automotive Cylindrical Power Cells	High-volume automated final crimping of large-format cylindrical power batteries used in electric vehicle battery packs.	Maintains micro-tolerance height consistency and zero-leakage hermetic seals under severe vibrational and thermal stresses.
Energy Storage Systems (ESS)	Precision sealing of high-capacity cylindrical energy storage cells designed for commercial, industrial, and grid-scale storage modules.	Delivers uniform 360-degree perimeter sealing pressure, preventing electrolyte dry-out and extending operational cycle life.
Consumer Electronics & Power Tools	Rapid automated encapsulation of 18650, 21700, and related cylindrical formats destined for power tools, e-bikes, and smart devices.	Delivers sustained throughput of ≥ 45 PPM with minimal reject rates, optimizing per-unit manufacturing cost efficiency.
Sodium-Ion & Solid-State Pilot Lines	Controlled progressive mechanical crimping of emerging sodium-ion and advanced solid-state cylindrical cell chemistries.	Mitigates internal structural shearing and short-circuit risks during casing fold-over through controlled multi-step mechanical force.
Supercapacitor Production	High-integrity mechanical sealing and height calibration for high-rate supercapacitor aluminum shells and rubber-gasket interfaces.	Ensures optimal radial sealing gasket compression without micro-cracking the terminal insulation rings.
Specialized Defense & Aerospace Cells	Critical-tolerance sealing for high-reliability military and aerospace cylindrical electrochemical power cells.	Guaranteed concentricity and structural repeatability via rigid four-pillar ball-guided tooling sets.

Specification Parameter	Value / Technical Requirement
Product Item Number	CC12
Primary Equipment Function	Automated multi-stage mechanical sealing and height calibration of post-injection cylindrical batteries
Sealing Drive Mechanism	Mechanical kinematic drive combined with precision pneumatic booster for height leveling
Tooling Die Set Construction	Four-pillar integral die set frame with high-precision ball guide pillars
Sealing Station Progression	1st Pre-Seal → 2nd Intermediate Crimp → 3rd Final Crimp → 4th Squaring/Height Calibration (□□)
Cell Transfer System	Continuous slat-chain conveyor with intermittent fixed-pitch distribution mechanism
Production Capacity / Speed	≥ 45 PPM (Parts Per Minute)
Product Qualification Rate (Yield)	$\geq 99\%$ (equipment-attributable scrap $< 1\%$)
Equipment Operating Rate (Uptime)	$\geq 98\%$ (equipment-attributable downtime $< 2\%$)
Main Electrical Supply	380 V AC, 3-Phase, 50 Hz
Allowable Voltage Fluctuation	$< \pm 10\%$
Total Connected Power	3.0 kW
Required Pneumatic Supply Pressure	≥ 0.6 MPa (Clean, dry compressed air supplied by customer)

Specification Parameter	Value / Technical Requirement
Structural Materials	Anodized aluminum alloys, stainless steel, and electroplated anti-corrosion components
Machine Ergonomics	High-visibility access panels, ergonomic loading/unloading interfaces, fully enclosed safety interlocks