

Semi Automatic Cylindrical Battery Cell Grooving Machine

Item Number: GC06



Introduction

Engineered for high-precision cylindrical battery fabrication, this semi-automatic grooving machine provides programmable depth control, electrolyte-resistant digital operation, and rapid 400 units per hour processing for 18650, 21700, and 26650 cell cases in advanced battery research and pilot lines.

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Application	Description	Key Benefit
Lithium-Ion 18650 & 21700 Cell Assembly	Forming uniform seal-retaining grooves on standard commercial steel cylindrical cases prior to crimping.	Delivers consistent groove depth within ± 0.1 mm to guarantee hermetic cap sealing and avoid electrolyte leakage.
High-Capacity 26650 Prototyping	Processing heavy-duty cylindrical steel housings for energy storage and electric vehicle research.	Accommodates larger form factors with rigid structural support and adjustable grooving depths from 1.2 mm to 2.0 mm.
Aluminum Electrolytic Capacitor Housing	Indenting circumferential retention channels on miniature to mid-sized aluminum casing shells up to $\Phi 30$ mm.	Gentle, controlled radial pressure prevents wall deformation on softer aluminum substrates during high-speed rotation.
Battery R&D & Formulation Pilot Lines	Conducting pilot-run cell fabrication to evaluate novel anode/cathode materials and electrolyte formulations.	Fast mechanical changeover between cell formats with intuitive PLC parameter storage reduces trial setup downtime.
Academic & Industrial Materials Research	Teaching and prototyping advanced electrochemical energy storage architectures in university and institutional labs.	Safe, ergonomic benchtop footprint featuring simple maintenance protocols and digital speed verification.
Supercapacitor Enclosure Preparation	Fabricating structural retaining grooves in thin-walled metallic enclosures for high-rate supercapacitor cells.	Preserves casing concentricity and structural integrity through ultra-smooth, motorized rotary forming.

Parameter	Specification (GC06)
Product Identifier	GC06
Control Architecture	PLC Touchscreen Controller with Digital Parameter Display
Input Hardware	Corrosion-Resistant Metallic Waterproof Pushbuttons
Compatible Housing Materials	Stainless Steel, Nickel-Plated Steel, Aluminum Enclosures
Supported Cylindrical Form Factors	18650, 21700, 26650, and other standard cylindrical steel cases
Capacitor Shell Compatibility	Aluminum capacitor casings up to $\Phi 30$ mm outer diameter
Grooving Depth Range	1.2 mm – 2.0 mm (Continuously Adjustable)
Grooving Width Range	1.1 mm – 1.5 mm (Standard blade thickness configuration)
Machining Accuracy	± 0.1 mm
Tooling Blade Service Life	> 1,000,000 cycles
Production Throughput	Up to 400 pieces / hour (Semi-Automatic)
Rotational Speed Adjustment	Digitally displayed variable-speed governor
Operating Compressed Air Pressure	0.5 MPa – 0.7 MPa (Pneumatic drive)
Electrical Power Requirements	220V AC / 50 Hz Single Phase

Parameter	Specification (GC06)
Rated Power Consumption	140 W
System Dimensions (L × W × H)	740 mm × 250 mm × 350 mm
Net Weight	37 kg
Maintenance Lubrication Target	Guide pillars, rotary bushings, sliding rails, and drive assemblies