

Vertical Cylindrical Battery Grooving Machine

Item Number: GC07



Introduction

Engineered for cell assembly, this high precision vertical cylindrical battery grooving machine delivers uniform depth control, programmable touchscreen operation, and robust tooling durability for battery research laboratories, pilot production lines, and supercapacitor manufacturing facilities seeking superior process repeatability.

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Application	Description	Key Benefit
Lithium-Ion Battery R&D	Forming uniform circumferential grooves on prototype cylindrical steel cans prior to electrolyte filling and final crimping.	Prevents internal component shift and ensures tight mechanical sealing tolerances for reliable electrochemical testing.
Pilot-Scale Cylindrical Cell Assembly	Performing semi-automated grooving on small-to-medium batch runs of commercial battery formats.	Reaches throughput rates up to 400 EA/H with repeatable ± 0.1 mm depth accuracy across production batches.
Aluminum Supercapacitor Manufacturing	Precision grooving of thin-walled aluminum capacitor shells with outer diameters up to $\Phi 30$ mm.	Produces controlled deformation without cracking or thinning the lightweight aluminum casing material.
Large-Format Cylindrical Cell Development	Custom-tooled processing for next-generation large-format cells, including 32700 and 4680 formats.	Modular chuck and blade architecture easily adapts to high-capacity commercial energy storage geometries.
Sodium-Ion and Solid-State Cell Prototyping	Mechanical casing preparation for emerging cell chemistries utilizing specialized housing alloys.	High-rigidity mechanical positioning accommodates varied casing hardness levels without tool chatter.
Educational and Industrial Research Facilities	Practical fabrication training and process parameter optimization in university cleanrooms and corporate research labs.	User-friendly PLC interface and compact footprint enable safe, straightforward operation in multi-user settings.

Parameter	Specification (GC07)
Product Item Number	GC07
Workpiece Loading Orientation	Vertical
Grooving Depth Range	1.2 – 2.0 mm (Adjustable)
Grooving Width Range	1.1 – 1.5 mm (Determined by blade thickness)
Machining Accuracy	± 0.1 mm
Cutter Blade Service Life	> 1,000,000 cycles
Production Capacity	Semi-automatic, up to 400 EA/H
Primary Compatible Workpiece Range	Aluminum capacitor shells & cylindrical steel cans up to $\Phi 30$ mm
Large-Format Customization Options	Available for 32700, 4680, and custom large cylindrical formats
Control System	Programmable Logic Controller (PLC) with Touchscreen Interface
Operating Power Supply	220 V / 50 Hz
Rated Power Consumption	200 W
Required Pneumatic Pressure	0.5 – 0.7 MPa

Parameter	Specification (GC07)
Equipment Dimensions (L x W x H)	420 x 370 x 550 mm
Equipment Net Weight	50 kg