

Cnc Grooving Pre Sealing Machine For Supercapacitor Sealing

Item Number: CX10



Introduction

Precision CNC grooving and pre-sealing equipment for supercapacitor housings delivers servo-controlled forming, stable concentric clamping, programmable dimensions, and high uptime for consistent roll-groove and crimp-seal production across demanding high-volume manufacturing operations with reliable tooling and controlled motion performance.

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Application	Description	Key Benefit
Supercapacitor Can Grooving	Forms the required rolling groove in size 60 supercapacitor housings before final sealing operations.	Servo-controlled feed supports groove-depth accuracy of LA: $\pm 0.02\text{mm}$.
Supercapacitor Pre-Sealing	Produces the rolled sealing edge on capacitor products after grooving.	Controlled transition from fast approach to slow rim forming supports gradual sealing-edge formation.
Cylindrical Energy-Storage Device Assembly	Supports housing preparation steps for cylindrical supercapacitor products within an energy-storage production process.	Concentric sleeve clamping keeps the component stable during rotating-tool operations.
High-Volume Capacitor Production	Repeats grooving and pre-sealing cycles for production-oriented manufacturing.	Rated capacity of $\geq 3\text{PCS}$ and a 98% operating rate support production continuity.
Customized Supercapacitor Housing Formats	Accommodates other product specifications beyond the stated H50 to H204 mm length range through customization.	HMI-based dimensional setting enables precise adjustment to required process data.
Automated Capacitor Manufacturing Cells	Provides a controlled grooving and sealing station that can form part of an automated line.	PLC control and interface-based parameter display facilitate automation-oriented operation.

Parameter	Specification
Site-facing identifier	CX11
Applicable product	Size 60 battery supercapacitor
Applicable product length	H50~204mm
Other product specifications	Customizable
Process method	Mold-roller grooving method
Workpiece clamping	Automatic sleeve clamping ring; concentric capacitor fixation
Spindle motion	Motor-driven sleeve main spindle with uniform rotation
Grooving tool motion	Servo motor-driven feed
Sealing tool motion	Servo motor-driven downward rotating seal forming
Grooving and sealing drive method	Servo motor screw drive
Sealing motion sequence	Rapid tool feed followed by slow, gradual rim forming at the sealing edge
Tool-feed guidance	High-precision linear guide group
Control system	PLC control with human-machine interface display

Parameter	Specification
Safety protection	Intelligent external protective enclosure
Capacitor height after sealing	HA□ ±0.05mm
Grooving height accuracy	LB□ ±0.05mm
Grooving depth accuracy	LA□ ±0.02mm
Grooving width	L □ 1.4mm□ optional□
Tooling and mold service life	More than 5 million cycles under normal use
Capacity	≥3PCS
Operating rate	98□
Air supply	0.5~0.7MPa adjustable
Air consumption	0.2m³/min
Compressed-air requirement	Dried compressed air at 0.5□ 0.7MPa pressure
Power supply	Single-phase 220V/50HZ
Power	2.5KW
Overall dimensions	L1100mm *W 640mm * 1700mm
Net weight	350KG
Gross weight	400KG
Working temperature	15□ 30℃
Working humidity	30□ 80□ Rh
Ground-floor handling requirement	Handling height greater than 1.8m
Upper-floor elevator requirement	Elevator width 1m, height 1.8m, and depth 1.3m or more
Installation logistics requirement	Confirm the handling route and installation method from outside the plant to the workshop before delivery