

Integrated Dual Servo Heated Horizontal Rolling Press Calender Machine

Item Number: DG18



Introduction

Discover our integrated dual servo heated horizontal rolling press calender machine for precision electrode calendering, featuring independent roll heating, automated gap control, asynchronous rotation capability, and micrometric thickness uniformity for demanding clean energy and advanced battery material research applications worldwide.

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Application	Description	Key Benefit
Lithium-Ion Battery Cathode & Anode Densification	Calendering coated current collector foils (aluminum and copper substrates) under regulated temperature and compressive load.	Enhances volumetric energy density, optimizes electrode porosity, and strengthens mechanical adhesion between active mass and current collector.
Dry-Process Electrode (DBE) Fabrication	Direct pressing and fibrillization of solvent-free binder-powder mixtures using independent asynchronous roller shearing and thermal assistance.	Eliminates solvent drying stages, prevents binder migration, and produces self-standing electrode membranes with uniform thickness.
Solid-State Electrolyte Membrane Compaction	Hot pressing of inorganic, composite, or polymer-based solid-state electrolyte sheets to eliminate microscopic voids and grain boundary defects.	Maximizes ionic conductivity and suppresses dendrite growth by achieving ultra-high packing density and smooth interface topography.
Supercapacitor Electrode Calendering	High-precision thickness reduction of thick activated carbon coatings and conductive matrices on metallic substrates.	Achieves consistent low-resistance contacts and precise target sheet resistance across the entire surface area.
Non-Ferrous Foil Precision Rolling	Micro-rolling and reduction of ductile non-ferrous metals, precious metal foils, and functional alloys under clean laboratory conditions.	Delivers mirror-grade surface finishes with cross-sheet thickness deviation controlled within tight micrometric boundaries.
Polymer & Composite Film Lamination	Continuous hot compaction and thermal bonding of multi-layer functional polymers, separator membranes, and conductive polymer sheets.	Ensures bubble-free interfacial bonding and uniform thermal fusion across widths up to 200 mm.

Parameter	Specification Detail (DG18)
Product Identification	DG18
Drive Configuration	Dual Servo Motors (Independent Upper/Lower Control, Supports Asynchronous Rotation)
Roller Orientation	Horizontal Layout
Roller Diameter	Φ 96 mm
Roller Effective Width	0 – 200 mm
Roller Surface Hardness	HRC 62 (Hard Chrome Plated)
Roller Cylindricity	≤ ±2 μm
Roller Surface Finish	Dry-process pressing: Ra ≤ 0.8 μm; Wet-process pressing: Ra ≤ 0.4 μm
Rolling Thickness Range	0 – 3 mm (Continuously Adjustable)
Gap Adjustment Mechanism	Inclined Wedge-Block with Self-Locking Mechanical Handwheels

Parameter	Specification Detail (DG18)
Gap Measurement Display	Digital Electronic Gauge Display
Feeding & Rolling Speed	0 – 40 mm/s (Continuously Variable, Digital Display)
Operational Motion Modes	Forward and Reverse Motorized Rolling
Heating System	Internal Core Heating within Upper and Lower Rollers
Temperature Control Range	Ambient to 130 °C (Independently Controlled Upper & Lower Rollers)
Temperature Resolution	0.1 °C (Digital Readout)
Temperature Control Accuracy	± 2 °C
System Automation & Control	Centralized PLC Interface with Digital Parameter Management
Material Infeed System	Guide Plate with Detachable Powder Hopper Funnel
Electrical Power Supply	AC 220 V / 50 Hz
Total Power Consumption	1.5 kW
Overall Equipment Dimensions	L 770 mm × W 540 mm × H 530 mm
Net Equipment Weight	105 kg