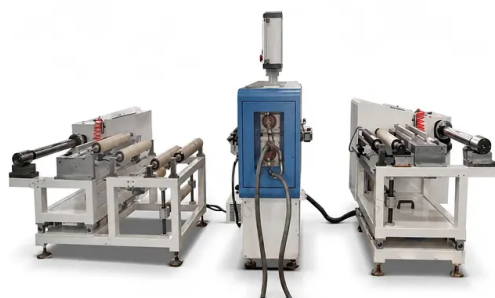


210 330Mm Hydraulic Battery Electrode Calendaring Machine

Heated Roller Press

Item Number: DG15



Introduction

210 x 330 mm hydraulic battery electrode calendaring machine with heated precision rolls, servo gap control, variable speed, and high pressure capability for consistent electrode density and thickness in advanced cell manufacturing research workflows.

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Application	Description	Key Benefit
Lithium-ion cathode electrode calendaring	Compress coated cathode sheets after coating to establish the required electrode thickness and densification condition before cell assembly.	Supports thickness control through servo-adjusted roll-gap settings and electro-hydraulic pressure.
Lithium-ion anode electrode calendaring	Process coated anode sheets through the horizontal roll pair after coating and before cutting or assembly operations.	Provides controlled compression over an effective usable width of 300 mm.
Heated electrode roll pressing	Apply roll heating when a battery-electrode process requires temperature-controlled calendaring conditions.	Delivers independent upper- and lower-roll heating power with closed-loop temperature control.
Battery R&D process optimization	Compare roll gap, rolling speed, pressure, and temperature settings while developing electrode fabrication parameters.	HMI-based gap adjustment and variable-speed operation make process settings observable and repeatable.
Pilot-scale electrode sheet preparation	Produce compacted electrode samples for subsequent slitting, punching, stacking, winding, or electrochemical evaluation.	Combines defined roll geometry, stable drive capability, and a specified throughput range of 0.8 to 5 m/min.
Coated foil thickness finishing	Roll coated battery foil where the coating uniformity has been established upstream and final sheet thickness requires adjustment.	Under the user-guaranteed coating-uniformity condition, post-rolling thickness uniformity is specified as $\leq \pm 0.002$ mm.
Advanced materials sheet densification studies	Investigate compression behavior of battery electrode-sheet materials in materials science and academic laboratory programs.	The 0 to 2.0 mm gap range and 2 to 8 r/min operating speed provide controlled variables for comparative studies.

Parameter	Specification
Site-facing identifier	DG15
Equipment type	Hydraulic roller press / battery electrode calendaring machine
Primary function	The electrode sheet is pressed between rolls to achieve a specified thickness
Applicable sheet or foil type	Battery electrode sheet
Roll specification	Dia. 210 x 330 mm (roll-face diameter x roll-face width)
Effective usable width	300 mm
Roll arrangement	Upper and lower rolls arranged horizontally
Machine speed	2 to 8 r/min
Machine efficiency	0.8 to 5 m/min
Coating uniformity	± 0.002 mm (guaranteed by user)
Post-rolling electrode thickness uniformity	$\leq \pm 0.002$ mm, subject to user-guaranteed coating uniformity

Parameter	Specification
Frame construction	Cast-steel portal frame
Roll material	Cr3-series high-alloy cold-roll steel
Roll surface hardness	Above HRC66
Quench-layer depth	18 to 25 mm
Roll chrome plating	≥ 0.18 mm
Roll radial runout	$\leq \pm 0.002$ mm
Roll surface roughness	$R_a \leq 0.04$
Roll-gap adjustment method	HMI input changes hydraulic pressure to adjust roll gap; roll movement value displayed on HMI servo screen
Roll-gap adjustment range	0 to 2.0 mm
Pressing method	Electric hydraulic pump
Hydraulic cylinder specification	Cylinder bore dia. 63 mm; stroke 15 mm
Maximum working pressure	37 T x 2 cylinders
Working oil pressure	40 MPa
Maximum pressure	60 MPa
Roller press drive	Cycloidal pinwheel reducer
Main motor power	0.75 kW (380 V, 50 Hz)
Bearings	Dedicated rolling-mill bearings
Lubrication	No. 3 lithium-base grease
Heating system	Closed-loop heating system with temperature controller, solid-state relay, and K-type thermocouple
Heating power	1.6 kW x 2 (one for upper roll and one for lower roll)
Heating voltage	220 V (to be determined)
Temperature accuracy	± 2 degrees C
Maximum temperature	130 degrees C
Electrical control	Electrical control system included
Additional mechanisms	Gas-liquid pressurization system, feed protection plate, and roll-surface cleaning mechanism
Safety protection	Two dial indicators; protection device marked with warning color
Equipment appearance	Computer gray and blue
Standard equipment color	Computer gray
Main unit weight	Approximately 1 T