

Slot Die Transfer Dual Mode Multifunction Coating Machine

Item Number: TB17



Introduction

Dual mode slot die and three roll transfer coating equipment delivers continuous or intermittent electrode coating, precise alignment, stable web handling, and double sided hot air drying for lithium ion battery materials research and pilot production applications worldwide.

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Application	Description	Key Benefit
Lithium iron phosphate cathode coating	Applies lithium iron phosphate slurry to aluminum foil for positive-electrode fabrication.	Supports controlled coating width, thickness, and mass-density consistency for cathode development or pilot production.
Graphite anode coating	Coats graphite-based negative-electrode slurry onto copper foil.	Accommodates copper foil thicknesses from 6 to 30 um with stable web handling.
Silicon-carbon anode processing	Produces coated silicon-carbon electrode sheets requiring controlled slurry delivery and dimensional positioning.	Servo-driven, pulse-free feeding supports stable delivery for applicable slurry viscosities.
Lithium cobalt oxide electrode manufacturing	Supports coating of lithium cobalt oxide positive-electrode materials on aluminum foil.	Slot die and transfer methods give process teams options for different coating approaches.
Lithium manganate electrode development	Produces lithium manganate electrode samples and pilot-scale coated sheets.	Continuous and intermittent modes support both standard web coating and defined coated-area patterns.
Vanadium sodium battery electrode work	Handles coating processes for vanadium sodium battery electrode material systems.	Double-sided hot-air drying and alignment functions support structured electrode workflows.
Battery material formulation trials	Evaluates water-based or NMP-based slurry formulations with solids content from 20 to 85%.	The broad supported viscosity range enables process investigation across multiple slurry formulations.
Advanced materials surface coating	Applies compatible coating materials to aluminum or copper foil substrates in research environments.	Adjustable metering, web guidance, and coating-method selection improve experimental flexibility.

Parameter	Specification	Notes
Product Item Number	TB17	Site-facing identifier
Suitable material systems	Vanadium sodium, lithium iron phosphate, lithium cobalt oxide, lithium manganate, graphite, silicon-carbon, and other battery positive and negative electrode coating processes	
Coating methods	Continuous coating; intermittent coating	Slot die plus transfer coating machine
Coating speed	Approximately 1.5~3 m/min	Depending on drying conditions
Intermittent coating length	Coating length 105000 mm; uncoated length 10500 mm	
Double-sided intermittent alignment	Photoelectric gap detection automatically tracks head and tail gaps for reverse-side alignment	
Running substrate thickness	Aluminum foil (Al): 830 um; copper foil (Cu): 630 um	
Roll-face design width	400 mm	

Parameter	Specification	Notes
Guaranteed coating width	Within 350 mm	
Coating roller and rubber roller diameter	Phi 120 mm	
Doctor roller diameter	Phi 100 mm	
Coating accuracy	+/-3 um	
Coating mass-density accuracy	<= +/-1.5%	Includes substrate; excludes abnormal edge areas; sampling measurement standard follows product evaluation
Suitable slurry viscosity	2000~12000 mPas	
Single-side dry coating thickness range	20-200 um	
Supported oil-based solvent	NMP (s.g=1.033, b.p=204 C)	
Supported water-based solvent	H2O/NMP (s.g=1.000, b.p=100 C)	
Suitable solids-content range	20~85%	
Coating dimensional accuracy	L<= +/-1 mm; W<= +/-0.5 mm	L: length direction; W: width direction
Front-to-back registration accuracy	L<= +/-1 mm; W<= +/-0.5 mm	
Web-guiding deviation	+/-0.3 mm	
Machine structure	Head section, oven, and tail section; split type	
Doctor blade runout	<= +/-1.5 um	
Doctor blade surface roughness	Ra0.4	
Doctor blade straightness	<= +/-1.5 um	
Coating steel-roll runout	<= +/-1.5 um	
Coating steel-roll surface roughness	Ra0.4	
Coating steel-roll straightness	<= +/-1.5 um	
Rubber-roll runout	<=10 um	
Rubber-roll straightness	<=10 um	
Head-section ambient temperature	25~30 C	Installation environment requirement
Other-area ambient temperature	10~40 C	Installation environment requirement
Head-section relative humidity	Positive electrode RH<=35%; negative electrode RH<=98%	Installation environment requirement
Other-area relative humidity	<=98%	Installation environment requirement
Power supply	380 V, three-phase five-wire, 50 Hz	Voltage fluctuation range: +10%~-10%
Total startup power	30 KW	
Compressed air	Dried, filtered, and pressure-stabilized air	Outlet pressure approximately 0.5 MPa
Overall dimensions	L7000W1200H1800 mm	Fitted with casters and leveling feet
Weight	Approximately 2000 KG	
Routine cleaning	Wipe regularly with a soft cloth moistened with alcohol	Keep surfaces clean

Parameter	Specification	Notes
Motion-part lubrication	Lubricate moving parts regularly	Maintains smooth motion
Long-term storage	Clean moving-component surfaces and apply anti-rust oil	Required when the unit is not used for an extended period
Fastener inspection	Inspect screws, nuts, pins, and other fasteners regularly	Helps prevent loosening and associated equipment or personnel safety incidents