

Lithium Battery Electrode Sheet Continuous Slitting Machine

200 To 560 Mm Slitting Width

Item Number: FQ03



Introduction

Continuous lithium battery electrode sheet slitting machine processes rolled coated electrodes across 200 to 560 mm widths with closed loop tension control precision web guiding dust removal and dual differential shaft rewinding.

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Application	Description	Key Benefit
Lithium iron phosphate electrode production	Slits calendered positive and negative electrode rolls used in lithium iron phosphate cell manufacturing.	Controlled web handling supports stable preparation of multiple electrode strips from wide parent rolls.
Nickel cobalt manganese electrode processing	Converts calendered electrode sheets for nickel cobalt manganese oxide material systems into specified strip formats.	Precision rotary shearing helps maintain defined slit widths and controlled metal-burr performance.
Lithium cobalt oxide and lithium manganate cell lines	Processes coated and rolled electrode materials for lithium cobalt oxide and lithium manganate battery manufacturing.	Dual upper and lower rewinding separates slit strips into orderly finished rolls.
Lithium titanate electrode conversion	Handles calendered lithium titanate electrode material within the supported foil, electrode-thickness, and roll-diameter limits.	Closed-loop tension and automatic web guiding promote stable movement of sensitive coated webs.
Graphite and carbon anode preparation	Slits graphite or carbon-based negative electrode sheets after coating and calendering.	Integrated brushing and extraction remove loose powder generated around the slitting stage.
Pilot-line electrode format development	Produces repeated multi-strip widths, including the stated 56/58 mm one-out-nine configuration, for process development and evaluation.	Adjustable continuous operation allows teams to establish slitting conditions based on actual cut results.
Battery manufacturing edge-trim recovery	Collects side trim generated during electrode strip conversion using dedicated waste handling.	Independently adjustable scrap tension helps maintain stable edge-material collection.

Parameter	Specification	Notes
Site-facing item number	FQ03	
Suitable electrode systems	Lithium iron phosphate, lithium cobalt oxide, lithium manganate, ternary materials, nickel cobalt manganese oxide, lithium titanate, carbon, graphite, and related systems	For coated and calendered electrode sheets
Unwind type	Single-shaft center unwind	
Splicing method	Manual web splicing	
Tension control	Automatic closed-loop, continuous tension control system	
Slitting method	Circular disc knives for simultaneous multi-strip continuous rotary shearing	Knife-type roll slitting
Guaranteed slitting width	200-560 mm	
Slitting specification	56/58 mm, one-out-nine, two groups	Each knife holder includes knives, spacers, and knife sleeves
Effective slitting width	Maximum 530 mm	
Slit-width accuracy	+/-0.05 mm	

Parameter	Specification	Notes
Roller-face design width	650 mm	
Mechanical running speed	50 m/min	
Mechanical speed setting	Maximum 50 m/min, continuously adjustable	
Slitting speed	20-50 m/min	Determined by slitting result
Slitting acceptance speed	50 m/min	
Electrode thickness range	80-250 μ m	
Slittable electrode thickness	90-300 μ m	
Incoming aluminum foil thickness	10-30 μ m	Width 100-560 mm; maximum roll diameter 450 mm
Incoming copper foil thickness	6-30 μ m	Width 100-560 mm; maximum roll diameter 450 mm
Adaptable copper foil thickness	5-20 μ m	
Adaptable aluminum foil thickness	10-25 μ m	
Maximum foil width	560 mm	
Maximum unwind roll diameter	Phi 450 mm	
Maximum unwind weight	250 kg	
Unwind core inside diameter	Phi 3 inch (Phi 76.2 mm)	
Web-guiding controller travel and accuracy	+/-50 mm; +/-0.2 mm	Unwind correction control
Rewinding method	Upper and lower sets of differential-shaft winding devices	
Differential-shaft configuration	Nishimura method	
Maximum rewind width	650 mm	Equipped with 40# differential shaft
Maximum rewind diameter	Phi 450 mm	
Rewind shaft diameter	Phi 3 inch inside diameter	Rewind core supplied by the user
Rewind accuracy	+/-0.4 mm	
Rewind pressure roller	Two-wheel rolling roller	Helps prevent wound-roll edge curl
Longitudinal metal burr	Less than 8 μ m	Beyond electrode coating surface; in the direction beyond the electrode
Transverse metal burr	Less than 10 μ m	In the electrode direction
Electrode meandering	+/-0.5 mm/1000 mm	Curvature in the slitting direction; measured by fixing both ends of a flat strip against a one-meter ruler and checking the maximum gap
Slitting knives	Domestic tungsten carbide alloy knives	
Standard supplied knife sizes	Phi 100 x Phi 65 x 0.7 (30 degrees); Phi 100 x Phi 55 x 2.0 (90 degrees)	Factory standard
Minimum usable upper-knife outside diameter	Phi 96 mm	
Cleaning system	Dust-removal device brushes and extracts floating powder after slitting; upper-knife dust extraction included	
Edge-scrap handling	Independent nip-roll collection device	Edge-scrap tension manually adjustable; edge scrap greater than 3 mm, with 5 mm recommended for stable collection
Electrical supply	Three-phase 380 V / 30 A / 50 Hz	
Air consumption	450 L/h	

Parameter	Specification	Notes
Total power	Approximately 5 kW	
Equipment availability	At least 95%	
Overall equipment dimensions	Approximately 1800 x 2200 x 1900 mm	Length x width x height
Dust collector dimensions	Approximately 800 x 600 x 1400 mm	Length x width x height
Knife-holder cart dimensions	Approximately 1200 x 400 x 1000 mm	Length x width x height
Weight	Approximately 3.5 t	
Standard equipment color	Dark gray	
Included documentation	Chinese operation manual, equipment maintenance manual, and documentation for purchased components	
Operating sequence	Transfer-cart loading to unwind shaft, splicing platform, traction roller, knife group, roller group, upper and lower differential-shaft rewinding, and edge-scrap winding	Set required electrode tension, switch web guiding to automatic mode, and start automatic slitting, winding, and collection