

Benchtop Slot Die Flat Plate Coater Battery Laboratory Coating Machine

Item Number: TB03



Introduction

Precision benchtop slot die flat plate coater and battery laboratory coating machine delivers uniform films, sealed syringe feeding, vacuum fixation, adjustable speed, controlled heating, and repeatable electrode coating for advanced research lithium ion solar polymer and OLED materials research.

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Application	Description	Key Benefit
Lithium Ion Battery Electrode Research	Coat cathode or anode slurries onto metallic current-collector substrates for coin-cell, pouch-cell, and materials screening workflows.	Produces repeatable laboratory electrodes with controlled movement, feeding, and wet-film conditions.
Solid State Battery Materials	Apply formulated catholyte, electrolyte, electrode composite, or interfacial material layers onto flat research substrates.	Vacuum fixation and adjustable coating parameters support stable deposition of sensitive laboratory formulations.
Solar Photovoltaic Film Development	Coat functional layers and photovoltaic research materials onto sheet substrates for process comparison and film optimization.	Uniform flat-plate motion helps researchers compare formulations under consistent coating conditions.
Polymer Conductive Film Production	Deposit conductive polymer solutions or composite coatings for electronic, sensor, and flexible-material investigations.	Enclosed syringe feeding reduces outside interference and limits material waste during small-volume trials.
OLED Material Research	Apply OLED-related functional layers and solution-based materials to suitable flat substrates during laboratory process development.	Precise travel and configurable coating methods support controlled thin-film experimentation.
Academic and Advanced Materials Research	Evaluate coating behavior for ceramics, composites, catalysts, coatings, and other functional materials requiring a flat substrate.	Multiple coating methods provide flexibility for screening different materials and experimental techniques.

Specification Category	TB03 Short Travel Variant	TB03 Extended Travel Variant
Coating method	Slot die flat plate coating; optional blade coating, four-sided film applicator coating, and wire rod coating	Slot die flat plate coating; optional blade coating, four-sided film applicator coating, and wire rod coating
Standard film applicator	TB03 standard TOB-JY100 film applicator	TB03 standard TOB-JY100 film applicator
Standard feeding system	TB03 standard TOB-ZCB-01 plunger pump feeding unit	TB03 standard TOB-ZCB-01 plunger pump feeding unit
Approximate coating stroke	Approximately 250 mm; stroke is continuously adjustable through the touchscreen	Adjustable from 0 to 800 mm
Coating drive	Motor-driven; coating speed is continuously adjustable through the touchscreen	Motor-driven; coating speed is continuously adjustable through the touchscreen
Coating speed	0.5 to 20 mm/s	0 to 120 mm/s
Vacuum plate	Aluminum vacuum flat plate included	Aluminum vacuum flat plate included
Vacuum plate dimensions	L365 mm × W200 mm × H32 mm	L900 mm × W350 mm × H32 mm
Adjustable coating head thickness	0 to 5 mm	0 to 5 mm
Injection capacity	Stainless steel injection syringe, maximum 60 ml	Stainless steel injection syringe, maximum 60 ml
Feeding speed	0.05 to 5 mm/s, referring to syringe piston speed	0.05 to 5 mm/s, referring to syringe piston speed

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Coating accuracy	±3 µm; a 1 µm dial indicator display is available as an option	±3 µm; a 1 µm dial indicator display is available as an option
Heating and drying system	Room temperature to 130°C; digital temperature controller; accuracy ±1°C	Room temperature to 130°C; digital temperature controller; accuracy ±1°C
Control system	PLC and touchscreen control for parameter adjustment, storage, and operation	PLC and touchscreen control for parameter adjustment, storage, and operation
Power supply	220 V/50 Hz	220 V/50 Hz
Weight	65 kg	140 kg
Overall dimensions	L560 mm × W420 mm × H370 mm	L1000 mm × W450 mm × H320 mm
Vacuum pump	One built-in oil-free vacuum pump included	One built-in oil-free vacuum pump included