

30L Planetary Vacuum Dispersing Mixer For Battery Slurry

Item Number: JL07



Introduction

30L planetary vacuum dispersing mixer for battery slurry processing, high-viscosity powder-liquid mixing, dual agitation, high-speed dispersion, temperature control, and reliable vacuum operation with 15-30L working capacity, 304 contact parts, electric lifting, and mobile casters for research and pilot production environments

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Application	Description	Key Benefit
Lithium-ion battery slurry preparation	Mix and disperse active powders, conductive additives, binders, and liquid media for electrode slurry development.	Combines planetary bulk mixing with high-speed dispersion for more uniform slurry preparation.
Battery formulation research	Evaluate different powder-liquid ratios, viscosity levels, and processing conditions during laboratory-scale formulation work.	Adjustable mixing and dispersion speeds provide flexible process control for comparative trials.
High-viscosity electrode materials	Process dense formulations with viscosities up to 1,200,000 cP where conventional low-torque laboratory mixers may be unsuitable.	Supports demanding rheological conditions within the specified operating range.
Electrode manufacturing process development	Produce pilot batches for coating trials, scale-up studies, and repeatability checks before larger production implementation.	The 15-30L effective capacity bridges laboratory research and small-batch process validation.
Advanced materials processing	Homogenize viscous powder-liquid systems used in materials science, ceramics, and related research programs.	304 stainless steel contact parts and temperature-control jackets support a broad range of experimental workflows.
Vacuum-assisted slurry processing	Connect the vessel to a suitable external vacuum system through the dedicated G3/4 internal-thread port.	Provides an organized interface for vacuum integration while sight glasses support visual process observation.

Category	Parameter	Specification
Product identification	Item number	JL07
Operating range	Suitable materials	Powder and liquid mixing and dispersion for common batteries
Operating range	Maximum material viscosity	≤1,200,000 cP
Lower vessel	Designed total volume	45 L
Lower vessel	Effective volume	15-30 L
Lower vessel	Vessel internal diameter	400 mm
Lower vessel	Vessel internal depth	360 mm
Lower vessel	Material-contact parts	304 stainless steel
Lower vessel	Temperature-control jacket	Single-layer vessel-wall jacket for cooling or heating; single-layer vessel-bottom jacket for cooling or heating
Lower vessel	Jacket connections	G1/2, with quick-opening union fittings
Lower vessel	Jacket pressure resistance	≤0.4 MPa
Lower vessel	Jacket circulation system	Customer supplied

Category	Parameter	Specification
Lower vessel	Recommended jacket inlet-water temperature	$\leq 8^{\circ}\text{C}$
Lower vessel	Recommended cooling-water flow	$> 15 \text{ L/min}$
Lower vessel	Discharge outlet	One G1 three-piece bottom discharge ball valve
Lower vessel	Design ambient temperature	$-10 \text{ to } +120^{\circ}\text{C}$
Lower vessel	Mobility	Caster-mounted mobile configuration
Mixing assembly	Working frequency	5-50 Hz
Mixing assembly	Mixing power	4 kW
Mixing assembly	Mixing paddle speed	8-83 rpm
Mixing assembly	Planetary box speed	5-53 rpm
Mixing assembly	Mixing paddle diameter	223 mm
Mixing assembly	Mixing paddle style	Spiral twist type; precision casting and machining ensure a 90-degree spiral line
Mixing assembly	Mixing paddle material	304 stainless steel
Mixing assembly	Mixing paddle linear speed	0.09-0.9 m/s
Mixing assembly	Number of mixing paddles	2
Mixing assembly	Paddle-to-paddle distance	$9 \pm 2 \text{ mm}$
Mixing assembly	Paddle-to-vessel-wall distance	$4 +2/-1 \text{ mm}$
Mixing assembly	Paddle-to-vessel-bottom distance	$3 \pm 2 \text{ mm}$
Dispersion assembly	Working frequency	5-50 Hz
Dispersion assembly	Dispersion power	4 kW
Dispersion assembly	Dispersion speed	540-5,400 rpm
Dispersion assembly	Dispersion disc diameter	80 mm
Dispersion assembly	Dispersion disc style	Toothed type
Dispersion assembly	Dispersion disc material	304 stainless steel
Dispersion assembly	Dispersion disc linear speed	2.1-21 m/s
Dispersion assembly	Number of dispersion discs	2
Dispersion assembly	Number of dispersion shafts	1
Wall-scraping assembly	Scraper support material	304 stainless steel
Wall-scraping assembly	Scraper plate material	Polytetrafluoroethylene
Wall-scraping assembly	Scraper speed	Same as planetary box speed
Wall-scraping assembly	Removability	Removable design
Wall-scraping assembly	High-viscosity operating condition	The scraper must be removed during high-viscosity processing
Base and lifting assembly	Structural material	Carbon steel for high-rigidity structures
Base and lifting assembly	Lifting method	Electric lifting
Base and lifting assembly	Lifting guide	High-precision linear guide rails
Base and lifting assembly	Lifting travel	$\leq 500 \text{ mm}$
Upper vessel	Material	304 stainless steel
Upper vessel	Powder-feed port	One ISO quick-opening DN80 port
Upper vessel	Liquid-feed port	Shared with the powder-feed port
Upper vessel	Sight-glass ports	Two DN80 tempered-glass sight glasses

Category	Parameter	Specification
Upper vessel	Vacuum port	One G3/4 internal-thread port
Upper vessel	Exhaust port	One G1/2 internal-thread port
Upper vessel	Digital vacuum-gauge port	One M14 × 1.5 metric internal-thread interface