



KINTEK SOLUTION

Battery Slurry Mixer Catalog

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KINTEK SOLUTION

COMPANY PROFILE

>>> About Us

KINTEK Solution is a technology-driven innovator specializing in comprehensive laboratory equipment for battery R&D and advanced materials research. Our portfolio spans the entire cell fabrication workflow—from mixing, coating, and precision pressing (automatic, heated, isostatic) to cell assembly and testing. Also essential in ceramics and powder metallurgy, our systems prioritize precision, safety, and repeatability, empowering researchers and industrial labs to achieve groundbreaking results.



1L Laboratory Planetary Vacuum Mixer With Cantilever Lifting Bucket For Lithium Battery Slurry Mixing

Item Number: JL01



Introduction

1L laboratory planetary vacuum mixer with cantilever lifting bucket for lithium battery slurry mixing, high viscosity dispersion, heating, and cooling control for consistent pilot scale electrode material preparation and flexible laboratory process development across demanding research workflows.

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Application	Description	Key Benefit
Lithium Battery Slurry Mixing	Mixes battery powders and liquids to prepare homogeneous electrode slurry for laboratory-scale formulation and process development.	Supports repeatable small-batch slurry preparation with both planetary mixing and high-speed dispersion.
High-Viscosity Formulation Research	Processes materials with viscosities up to 1,200,000 cP where conventional low-torque laboratory mixers may be unsuitable.	Provides a defined operating platform for thick and difficult-to-move formulations.
Battery Material Dispersion	Disperses powder components into liquid media using a toothed disc with adjustable high-speed operation.	Helps researchers evaluate dispersion conditions and reduce agglomeration during formulation trials.
Electrode Material Development	Supports laboratory preparation of material blends for battery research before downstream coating or cell assembly activities.	Connects small-batch slurry development with broader battery R&D workflows.
Temperature-Sensitive Processing	Uses wall and bottom vessel jackets for customer-supplied heating or cooling circulation.	Gives process teams a practical method for managing formulation temperature during mixing.
Advanced Materials Research	Handles powder-liquid mixing and dispersion tasks in ceramics, powder metallurgy, and other materials research environments.	Provides flexible processing for non-battery formulations that require controlled laboratory mixing.

Category	Parameter	Specification
Product Identification	Product item number	JL01
Application	Suitable materials	Powders and liquids used in common battery mixing and dispersion processes
Application	Maximum applicable viscosity	≤1200000 cP
Lower Bucket Assembly	Designed total volume	2.1L
Lower Bucket Assembly	Effective volume	0.7-1L
Lower Bucket Assembly	Container inner diameter	164mm
Lower Bucket Assembly	Container inner depth	100mm
Lower Bucket Assembly	Material contacting the product	304 stainless steel
Lower Bucket Assembly	Temperature-control jacket form	Single-layer jacket on the vessel wall for cooling or heating; single-layer jacket on the vessel bottom for cooling or heating

Category	Parameter	Specification
Lower Bucket Assembly	Temperature-control jacket connection	G3/8", with quick-opening union; jacket pressure resistance $\leq 0.4\text{MPa}$
Lower Bucket Assembly	Jacket circulation system	Customer supplied; recommended jacket inlet water temperature $\leq 8^{\circ}\text{C}$ and cooling-water flow rate $> 3.5\text{L/min}$
Lower Bucket Assembly	Discharge form	No discharge outlet
Lower Bucket Assembly	Designed ambient temperature	$-10^{\circ} \sim +120^{\circ}\text{C}$
Lower Bucket Assembly	Mobility	No casters; manual handling
Mixing Assembly	Operating frequency	5-50hz
Mixing Assembly	Mixing power	0.55kw
Mixing Assembly	Mixing blade speed	14-130rpm
Mixing Assembly	Planetary box speed	5-40rpm
Mixing Assembly	Mixing blade diameter	83mm
Mixing Assembly	Mixing blade style	Variable-section spiral twisted type, 90° spiral line
Mixing Assembly	Mixing blade material	304 stainless steel
Mixing Assembly	Mixing blade line speed	/
Mixing Assembly	Number of mixing blades	1
Mixing Assembly	Blade-to-vessel-wall distance	$3.5 \pm 1\text{mm}$
Mixing Assembly	Blade-to-vessel-bottom distance	$2 \pm 1\text{mm}$
Dispersion Assembly	Operating frequency	5-50hz
Dispersion Assembly	Dispersion power	1.1kw
Dispersion Assembly	Dispersion speed	580-58000rpm
Dispersion Assembly	Dispersion disc diameter	60mm
Dispersion Assembly	Dispersion disc style	Toothed
Dispersion Assembly	Dispersion disc material	304 stainless steel
Dispersion Assembly	Dispersion line speed	1.8-18m/s
Dispersion Assembly	Number of dispersion discs	1
Dispersion Assembly	Number of dispersion shafts	1

Constant Temperature Magnetic Stirring Reaction Bath

Magnetic Stirrer

Item Number: JL11



Introduction

Constant temperature magnetic stirring reaction bath with 0 to 100°C control 0.01°C resolution programmable safety protection fast cooling external circulation and adjustable magnetic stirring for laboratories materials research and process development battery chemistry powder processing ceramics and controlled thermal experiments

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Application	Description	Key Benefit
Battery Material Slurry and Precursor Research	Maintain a controlled thermal environment while magnetically stirring electrolyte-related solutions, precursor mixtures, or other small-batch research media.	Combines temperature control and agitation in one setup, reducing equipment around the vessel and improving process repeatability.
Advanced Materials Synthesis	Support temperature-controlled dissolution, precipitation, dispersion, and reaction development for functional materials and laboratory formulations.	Fine display resolution and software temperature correction provide clearer control of thermal conditions.
Powder Metallurgy and Ceramic Processing	Condition binders, additives, suspensions, and chemical preparation media used before powder or ceramic processing steps.	Stable mixing temperatures help maintain more consistent material preparation conditions.
Chemical Reaction Development	Conduct laboratory reactions requiring heating or cooling together with continuous magnetic agitation in reaction vessels from at least 100 mL.	Stepless speed adjustment and programmable timing simplify repeatable test procedures.
Academic and Teaching Laboratories	Demonstrate or evaluate temperature-dependent reaction behavior, mixing performance, and thermal process control.	Large-screen display and integrated control functions make operating data easy to observe.
External Heat Transfer Loops	Connect the external circulation inlet and outlet to compatible laboratory equipment or process fixtures using the provided 10 mm outer-diameter ports.	Internal and external circulation expand the equipment's usefulness across different experimental layouts.

Parameter	Specification
Model	JL11
Temperature range	-40~100°C
Temperature display resolution	0.01°C
Magnetic stirring speed listed for the product	0~1000 rpm/min
Magnetic stirring adjustment described for the series	0~1500 rpm steplessly adjustable
Bath volume	10 L
Minimum reaction vessel capacity	100 mL
Bath opening	180*190 mm
Bath depth	200 mm
Overall dimensions LWH	600*430*720 mm
Power	2.2 KW

Parameter	Specification
Pump flow rate	6 L/min
Temperature sensor	PT100
Display	Large-screen LCD
Temperature control	Intelligent software temperature control with PID automatic parameter tuning
PID adjustment	Automatic tuning according to different media; manual parameter adjustment supported for special users
Temperature correction	Software correction of displayed temperature against actual temperature
Stirring system	Built-in magnetic stirring device with bottom-protruding design
Cooling system	Fully enclosed compressor refrigeration
Cooling protection	Overheat and overcurrent protection
Circulation modes	Internal circulation and external circulation
External circulation ports	Inlet and outlet with 10 mm outer-diameter round tubes
Overtemperature protection	Available
Overtemperature alarm	Audible alarm with user-settable alarm temperature
Automatic protection response	Load can be automatically disconnected during overtemperature conditions
Timing function	Total operating time can be preset; load disconnects automatically when time expires
Control lock	Software digital lock for system setting values
Customization	Non-standard customization supported

Conical Barrel Mixer For Dry Powder And Granule Blending

Item Number: JL14



Introduction

Conical barrel mixer for pharmaceutical chemical food feed ceramic and metallurgical dry powders and granules with enclosed stainless steel mixing reliable uniform results adjustable speed timed operation easy cleaning and efficient dead zone free blending for laboratory and production workflows

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Application	Description	Key Benefit
Pharmaceutical powder blending	Mixes dry pharmaceutical powders during formulation development, small-batch preparation, and process evaluation.	Enclosed stainless steel construction and smooth internal surfaces support controlled handling and easier cleaning between batches.
Chemical material preparation	Blends dry chemical powders or granular feedstocks before downstream processing, testing, or formulation work.	Adjustable speed helps operators establish a repeatable mixing condition for different material combinations.
Food ingredient mixing	Combines dry food ingredients in laboratory, development, or small-batch processing workflows.	The stainless steel material-contact barrel provides a smooth, cleanable surface for routine use.
Feed formulation	Mixes dry feed components and granular materials to support formulation trials and batch preparation.	The 7.5 L working volume and 5 kg loading capacity are practical for controlled small-batch work.
Ceramic powder preparation	Blends ceramic powders or granules before pressing, shaping, firing, or material evaluation.	Conical mixing action supports uniform distribution of dry constituents across the batch.
Metallurgical material processing	Mixes dry metallurgical powders and granular materials for laboratory research and process preparation.	The enclosed configuration helps contain materials while the adjustable speed supports process control.
Academic and advanced materials research	Supports repeatable dry-material blending for research projects involving powder and granular material systems.	Compact dimensions, timed operation, and straightforward adjustment make the unit practical for shared laboratory environments.

Parameter	Specification
Product Item Number	JL14
Barrel volume	15 L
Working volume	7.5 L
Loading capacity	5 kg
Mixing time	6-8 min
Motor power	0.06 kW
Mixing speed	0-34 r/min
Overall dimensions	480 × 380 × 680 mm
Complete machine weight	19 kg
Suitable materials	Dry powders and granular materials
Suitable industries	Pharmaceutical, chemical, food, feed, ceramic, and metallurgical industries
Barrel material	Stainless steel
Barrel characteristics	Good sealing performance; smooth internal wall; easy to clean

Parameter	Specification
Mixing configuration	Conical barrel mixing with no dead zones and high mixing uniformity

100L Planetary Dispersion Vacuum Mixer With Cantilever Lifting Bucket For Battery Slurry

Item Number: JL10



Introduction

100L planetary dispersion vacuum mixer with cantilever lifting bucket, dual planetary agitation, four dispersing discs, 45-100L working volume, and high-viscosity battery slurry processing up to 1,200,000 cP with jacketed temperature control, stainless steel wetted parts, and mobile discharge design.

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Application	Description	Key Benefit
Lithium Ion Battery Slurry Preparation	Mixes battery powders and liquid components into electrode slurry for cathode or anode development and production processes.	Supports uniform formulation quality across high-viscosity batches.
Battery Materials Research	Processes experimental combinations of active materials, conductive agents, binders, and solvents during laboratory or pilot-scale development.	Provides adjustable agitation and dispersion conditions for formulation optimization.
High Solid Content Electrode Formulations	Handles thick mixtures where conventional low-shear mixers may struggle to wet powders or maintain consistent circulation.	Delivers intensive mechanical action for demanding rheology.
Conductive Paste and Functional Slurry Processing	Disperses fine powders into liquid carriers for conductive, electronic, or functional material formulations.	High-speed serrated discs help reduce agglomeration and improve dispersion uniformity.
Powder Metallurgy and Advanced Materials	Combines powders and liquids for research or process development involving ceramics, metal powders, and engineered composites.	Broad process flexibility supports varied material systems and viscosity levels.
Pilot-Scale Process Transfer	Bridges laboratory formulation work and larger-scale manufacturing by providing a 45 to 100 L effective working volume.	Enables more representative batch trials before production-scale implementation.

Category	Parameter	Specification
Product Identification	Model	JL10
Product Configuration	Equipment type	100L planetary dispersion vacuum mixer with cantilever lifting bucket
Applicable Materials	Process scope	Mixing and dispersion of powders and liquids for common battery slurries
Process Capability	Applicable viscosity	≤1,200,000 cP
Lower Vessel Assembly	Designed total volume	140 L
Lower Vessel Assembly	Effective volume	45–100 L
Lower Vessel Assembly	Vessel internal diameter	596 mm
Lower Vessel Assembly	Vessel internal depth	500 mm
Lower Vessel Assembly	Vessel material	304 stainless steel on material-contact parts
Lower Vessel Assembly	Temperature-control jacket	Single-layer jacket on vessel wall for cooling or heating; single-layer jacket on vessel bottom for cooling or heating

Category	Parameter	Specification
Lower Vessel Assembly	Temperature-control jacket connection	G3/4 inch, supplied with quick-opening union fittings
Lower Vessel Assembly	Jacket pressure rating	≤0.4 MPa
Lower Vessel Assembly	Jacket circulation system	Customer supplied
Lower Vessel Assembly	Recommended jacket inlet water temperature	≤8°C
Lower Vessel Assembly	Recommended cooling-water flow rate	>40 L/min
Lower Vessel Assembly	Discharge arrangement	One bottom G1-1/2 inch three-piece discharge ball valve, supplied with a 2 inch standard ISO quick-connect clamp fitting
Lower Vessel Assembly	Designed ambient temperature	-10℃ +120℃
Lower Vessel Assembly	Mobility	Caster-mounted mobile design
Mixing Assembly	Working frequency	5-50 Hz
Mixing Assembly	Mixing power	11 kW
Mixing Assembly	Mixing blade speed	5-52 rpm
Mixing Assembly	Planetary box speed	3-30 rpm
Mixing Assembly	Mixing blade diameter	338 mm
Mixing Assembly	Mixing blade style	Variable-cross-section helical twisted type with 90° helix line
Mixing Assembly	Mixing blade material	304 stainless steel
Mixing Assembly	Mixing blade line speed	0.09-0.9 m/s
Mixing Assembly	Number of mixing blades	2
Mixing Assembly	Blade-to-blade distance	7 ± 1 mm
Mixing Assembly	Blade-to-vessel-wall distance	5 ± 1 mm
Mixing Assembly	Blade-to-vessel-bottom distance	4 ± 1 mm
Dispersion Assembly	Working frequency	5-65 Hz
Dispersion Assembly	Dispersion power	15 kW
Dispersion Assembly	Dispersion speed	275-3,575 rpm
Dispersion Assembly	Dispersing disc diameter	125 mm
Dispersion Assembly	Dispersing disc style	Serrated
Dispersion Assembly	Dispersing disc material	304 stainless steel
Dispersion Assembly	Dispersion line speed	1.8-23 m/s
Dispersion Assembly	Number of dispersing discs	4
Dispersion Assembly	Number of dispersing shafts	2

10L Laboratory Planetary Dispersion Vacuum Mixer For Lithium Battery Slurry Mixing

Item Number: JL05



Introduction

10L laboratory planetary dispersion vacuum mixer for lithium battery slurry mixing with up to 1200000 cP viscosity handling, vacuum retention, heating cooling jacket, adjustable speed control, and precision high shear dispersion for consistent laboratory scale processing and repeatable results.

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Application	Description	Key Benefit
Lithium Battery Electrode Slurry	Mixes battery powders and liquids into homogeneous cathode or anode slurry for laboratory electrode development.	Supports repeatable dispersion and stable slurry preparation before coating.
High-Viscosity Battery Formulations	Processes viscous formulations up to $\leq 1,200,000\text{cP}$ using planetary mixing and high-speed dispersion.	Provides stronger material movement for difficult-to-process batches.
Advanced Materials Research	Disperses powders, fillers, and liquid binders during formulation development and process optimization.	Enables controlled comparison of mixing speed, dispersion speed, and temperature.
Ceramic Slurry Preparation	Combines ceramic powders and liquid components for research-scale slurry development.	Improves batch uniformity and supports downstream forming or coating trials.
Powder Metallurgy Binders	Mixes metal powders with binders or process liquids under controlled conditions.	Helps produce consistent laboratory feedstock and reduce agglomeration.
High-Viscosity Adhesives and Resins	Processes dense adhesive, resin, and composite formulations requiring vacuum treatment.	Vacuum operation helps control entrained air during mixing.
Vacuum Deaeration Research	Combines agitation and vacuum processing for materials where air inclusion can affect quality.	Supports improved process consistency and reduced bubble-related defects.

Parameter	Specification
Product item number	JL05
Application range	Mixing and dispersing powders and liquids for various common batteries to produce uniformly mixed battery slurry; suitable for high-viscosity processes
Applicable viscosity	$\leq 1,200,000\text{cP}$
Customer-provided vacuum system	Required; pumping capacity 4L/S using 2XZ-4
Vacuum level	-0.098MPa
Vacuum retention	Above -0.085MPa after 24 hours; no leakage into the vessel
Main machine total power	□ 5.2kW
Overall weight	Approximately 900kg
Overall dimensions	Length 1530mm × width 922mm × height 1792mm
Exterior color	Off-white

Parameter	Specification
Floor load requirement	900kg/m ²
Design ambient temperature	-10℃ +120℃
Mobility	Caster-mounted mobile design

Parameter	Specification
Designed total volume	16L
Effective volume	5-10L
Vessel internal diameter	310mm
Vessel internal depth	220mm
Product-contact vessel material	304 stainless steel
Temperature-control jacket form	Single-layer jacket on vessel wall for cooling or heating; single-layer jacket on vessel bottom for cooling or heating
Jacket connections	G1/2", fitted with quick-opening union joints
Jacket pressure resistance	≤0.4MPa
Jacket circulation system	Customer-provided; recommended inlet water temperature ≤8℃ and cooling water flow rate ≥ 7L/min
Discharge method	One G1" three-piece discharge ball valve at the vessel bottom

Parameter	Specification
Operating frequency	5-50Hz
Mixing power	2.2kW
Mixing blade speed	10-100rpm
Planetary box speed	5-50rpm
Mixing blade diameter	161mm
Mixing blade design	Variable-section spiral twisted type with 90° helical line
Mixing blade material	304 stainless steel
Mixing blade line speed	0.08-0.8m/s
Number of mixing blades	2
Distance between blades	7.5±2.5mm
Blade-to-vessel-wall distance	3±1.5mm
Blade-to-vessel-bottom distance	2.5±1mm

Parameter	Specification
Operating frequency	5-50Hz
Dispersion power	3kW
Dispersion speed	600-6000rpm
Dispersion disc diameter	70mm
Dispersion disc design	Toothed disc
Dispersion disc material	304 stainless steel
Dispersion line speed	2.1-21m/s
Number of dispersion discs	2
Number of dispersion shafts	1

Parameter	Specification
Scraper support material	304 stainless steel
Scraper plate material	Polytetrafluoroethylene (PTFE)
Scraper speed	Same as planetary box speed
Removability	Removable design
High-viscosity operating requirement	The wall scraper must be removed during high-viscosity processing

Parameter	Specification
Structural material	High-rigidity carbon steel
Lifting method	Electric lifting
Lifting guide	High-precision linear guide
Lifting stroke	≤440mm

Parameter	Specification
Upper vessel material	304 stainless steel
Powder feed port	One DN50 port with sight glass and quick assembly connection
Liquid feed port	Shared with the powder feed port
Spotlight port	One DN50 port
Vacuum port	One ISO 15A quick assembly port
Exhaust port	One ISO 15A quick assembly port
Spare port	One ISO quick-opening 3/4" port
Digital vacuum gauge port	One M14×1.5 female metric-thread connection

Parameter	Specification
Electrical cabinet	Houses the variable-frequency drive and other low-voltage electrical components
Operating panel	Houses buttons, knobs, touchscreen, and related controls
Power supply	AC 3×380V±5% , 50Hz
Control method	Electrical control
Drive and speed adjustment	Variable-frequency drive starting and control
Cooling method	Air cooling
Operating interface	Touchscreen operation
Digital temperature display	Provided for material temperature
Emergency stop	One emergency stop button
Alarm system	Over-temperature alarm, over-temperature alarm shutdown, and alarm-off function
Speed display	Rotational speed displayed on the touchscreen
Power indication	One power indicator

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

5L Laboratory Planetary Vacuum Mixer With Cantilever Lifting Bucket For Lithium Battery Slurry Mixing

Item Number: JL03



Introduction

5L laboratory planetary vacuum mixer with cantilever lifting bucket for lithium battery slurry mixing, high viscosity dispersion up to 1.2 million cP, jacketed temperature control, precision agitation, and reliable pilot scale processing for advanced battery research and materials development.

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Application	Description	Key Benefit
Lithium Battery Electrode Slurry	Mixes active powders, conductive agents, binders, and liquid media for cathode or anode slurry development.	Supports uniform composition and repeatable electrode preparation.
High-Viscosity Battery Formulation	Processes highly viscous formulations with viscosity up to 1.2 million cP.	Provides a practical solution for difficult-to-flow laboratory materials.
Conductive Additive Dispersion	Uses a serrated high-speed dispersion disc to distribute fine conductive materials through a liquid or paste matrix.	Helps reduce agglomeration and improve formulation consistency.
Advanced Materials Research	Combines powders and liquids for experimental composites, functional materials, and specialty formulations.	Enables controlled small-batch trials before process scale-up.
Ceramic and Powder Metallurgy Slurries	Mixes ceramic powders, binders, additives, and process liquids in research and development workflows.	Delivers adjustable agitation and dispersion for formulation optimization.
Academic Laboratory Research	Supports repeatable mixing experiments, material screening, and process parameter studies.	Provides flexible speed, volume, and temperature-control options.
Temperature-Sensitive Processing	Uses wall and bottom jackets for cooling or heating during mixing and dispersion.	Helps maintain process conditions that influence viscosity and material quality.

Parameter	JL03 2.1L Variant	JL03 8L Variant	JL03 16L Variant
Site-facing identifier	JL03 2.1L	JL03 8L	JL03 16L
Design total volume	2.1L	8L	16L
Effective volume	0.7-1L	2.7-5L	5-10L
Container inner diameter	164mm	240mm	310mm
Container inner depth	100mm	180mm	220mm
Container material	304 stainless steel on material-contact parts	304 stainless steel on material-contact parts	304 stainless steel on material-contact parts
Applicable viscosity	≤1.2 million cP	≤1.2 million cP	≤1.2 million cP
Design ambient temperature	-10℃ +120℃	-10℃ +120℃	-10℃ +120℃
Vessel movement	No casters, manual handling	Caster-mounted movement	Caster-mounted movement

Parameter	JL03 2.1L Variant	JL03 8L Variant	JL03 16L Variant
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Jacket configuration	Single-layer wall jacket for cooling or heating; single-layer bottom jacket for cooling or heating	Single-layer wall jacket for cooling or heating; single-layer bottom jacket for cooling or heating	Single-layer wall jacket for cooling or heating; single-layer bottom jacket for cooling or heating
Jacket connection	G3/8 inch, with quick-opening union	G1/2 inch, with quick-opening union	G1/2 inch, with quick-opening union
Jacket pressure resistance	≤0.4MPa	≤0.4MPa	≤0.4MPa
Jacket circulation system	Customer-supplied; recommended jacket inlet water temperature ≤8℃	Customer-supplied; recommended jacket inlet water temperature ≤8℃	Customer-supplied; recommended jacket inlet water temperature ≤8℃
Cooling water flow	□ 3.5L/min	□ 7L/min	□ 7L/min

Parameter	JL03 2.1L Variant	JL03 8L Variant	JL03 16L Variant
Discharge configuration	No discharge outlet	One 1 inch downward discharge plunger valve at the vessel bottom	One G1 inch three-piece discharge ball valve at the vessel bottom

Parameter	JL03 2.1L Variant	JL03 8L Variant	JL03 16L Variant
Working frequency	5-50Hz	5-50Hz	5-50Hz
Mixing power	0.55kW	1.5kW	2.2kW
Mixing blade speed	14-130rpm	10-98rpm	10-100rpm
Planetary box speed	5-40rpm	5-50rpm	5-50rpm
Mixing blade diameter	83mm	124mm	161mm
Mixing blade style	Variable-section helical twisted design, 90° helix	Variable-section helical twisted design, 90° helix	Variable-section helical twisted design, 90° helix
Mixing blade material	304 stainless steel	304 stainless steel	304 stainless steel
Mixing blade linear speed	/	0.06-0.6m/s	0.08-0.8m/s
Number of mixing blades	1	2	2
Distance between blades	/	7±2mm	7.5±2.5mm
Blade-to-vessel-wall distance	3.5±1mm	2+1mm	3±1.5mm
Blade-to-vessel-bottom distance	2±1mm	2+1mm	2.5±1mm

Parameter	JL03 2.1L Variant	JL03 8L Variant	JL03 16L Variant
Working frequency	5-50Hz	5-50Hz	5-50Hz
Dispersion power	1.1kW	2.2kW	3kW
Dispersion speed	580-58000rpm	610-6100rpm	600-6000rpm
Dispersion disc diameter	60mm	70mm	70mm
Dispersion disc style	Serrated	Serrated	Serrated
Dispersion disc material	304 stainless steel	304 stainless steel	304 stainless steel
Dispersion linear speed	1.8-18m/s	2.2-22m/s	2.1-21m/s
Number of dispersion discs	1	1	2
Number of dispersion shafts	1	1	1

2L Laboratory Small Battery Slurry Mixer

Item Number: JL13



Introduction

Compact 2L laboratory battery slurry mixer for uniform dry powder and granular blending, efficient low residue operation, stainless steel construction, simple cleaning, and dependable small batch performance across battery R&D, chemical, pharmaceutical, food, and advanced materials research laboratories.

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Application	Description	Key Benefit
Battery Material Research	Prepare small batches of dry electrode-material blends, conductive powders, granular additives, and other solid formulation components before coating or wet-slurry development.	Supports repeatable preliminary formulation work with a controlled laboratory batch size.
Pharmaceutical Powder Blending	Mix dry pharmaceutical powders or granular ingredients during formulation screening and laboratory process development.	Promotes uniform distribution while making cleaning between test batches more practical.
Chemical Material Preparation	Blend dry chemical powders and granular raw materials for research, sample preparation, and small-scale process evaluation.	Provides consistent mixing in a compact unit that is easy to operate and maintain.
Food Ingredient Mixing	Combine dry food powders and granular ingredients during recipe development, quality testing, and laboratory-scale processing.	Stainless steel contact surfaces support a cleanable processing environment.
Powder Metallurgy	Homogenize metallic powders, lubricants, and dry additives used in powder preparation and experimental compounding.	Enables small-batch material preparation without requiring full production-scale equipment.
Ceramic Formulation Development	Mix ceramic powders and granular components for laboratory testing, pressing studies, and materials development.	Helps improve batch consistency before forming, sintering, or other downstream evaluation.
Academic Materials Research	Conduct controlled blending experiments for advanced materials, particulate systems, and process optimization studies.	Compact dimensions and simple operation make the unit practical for shared research laboratories.

Parameter	Specification
Product Item Number	JL13
Vessel Volume	2 L
Maximum Mixing Capacity	0.8 L
Recommended Load	0.56 kg, depending on the specific gravity of the raw material
Motor Power	0.04 kW
Mixing Speed	24 r/min
Overall Dimensions	550 × 230 × 430 mm
Net Weight	14 kg
Applicable Materials	Dry powder and granular materials
Primary Mixing Uses	Laboratory mixing for pharmaceutical, chemical, and food materials; small-batch battery-material and advanced-material preparation
Construction	Quality stainless steel used for the exterior and material-contact parts

200L Planetary Dispersion Vacuum Mixer With Cantilever Lifting Barrel For Battery Slurry Mixing

Item Number: JL09



Introduction

200L planetary dispersion vacuum mixer with cantilever lifting barrel delivers uniform battery slurry mixing for high viscosity processes up to 1.2M cps with jacketed temperature control variable speed agitation and integrated safety interlocks for reliable laboratory and pilot production.

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Application	Description	Key Benefit
Lithium-Ion Battery Slurry Preparation	Mixes electrode powders with binders, solvents, and other liquid components under vacuum and controlled temperature conditions.	Promotes uniform particle wetting, stable viscosity, and repeatable electrode slurry quality.
High-Viscosity Cathode and Anode Materials	Processes dense formulations that require strong planetary circulation and high-speed dispersion to distribute solids throughout the liquid phase.	Supports consistent dispersion in formulations up to 1,200,000 cps.
Battery R&D and Pilot Production	Provides a scalable mixing platform for formulation development, process optimization, and pilot-scale batch preparation.	Bridges laboratory development and larger-volume production requirements.
Advanced Materials Processing	Blends powders and liquids for functional materials, composites, conductive compounds, and specialty formulations.	Combines vacuum capability, adjustable speed, and jacketed temperature control in one system.
Ceramic Slurry Production	Handles ceramic powders and liquid binders where high viscosity and agglomeration can affect forming or coating quality.	Improves batch uniformity and supports controlled deagglomeration.
Powder Metallurgy Formulations	Mixes metal powders with liquid additives or binders for downstream forming and processing.	Provides robust circulation and controlled high-shear dispersion for demanding mixtures.
Academic and Industrial Research	Supports repeatable materials experiments involving powder-liquid blending, vacuum processing, and thermal conditioning.	Offers configurable operating parameters for process development and comparative testing.

Category	Parameter	Specification
Product Identification	Item number	JL09
Lower Barrel Assembly	Designed total volume	287 L
Lower Barrel Assembly	Effective volume	95-200 L
Lower Barrel Assembly	Internal diameter	750 mm
Lower Barrel Assembly	Internal depth	650 mm
Lower Barrel Assembly	Material-contact material	304 stainless steel
Lower Barrel Assembly	Temperature-control jacket	Single-layer wall jacket for cooling or heating; single-layer bottom jacket for cooling or heating
Lower Barrel Assembly	Jacket connections	G1 inch, with quick-opening union fittings
Lower Barrel Assembly	Jacket pressure resistance	≤0.4 MPa
Lower Barrel Assembly	Jacket circulation system	Customer supplied
Lower Barrel Assembly	Recommended jacket inlet temperature	≤8°C

Category	Parameter	Specification
Lower Barrel Assembly	Recommended cooling-water flow	>60 L/min
Lower Barrel Assembly	Discharge configuration	One G1-1/2 inch three-piece discharge ball valve at the bottom of the barrel
Lower Barrel Assembly	Design ambient temperature	-10 to +120°C
Lower Barrel Assembly	Mobility	Caster-mounted mobile design
Agitator Assembly	Working frequency	5-50 Hz
Agitator Assembly	Agitator power	15 kW
Agitator Assembly	Agitator blade speed	4-40 rpm
Agitator Assembly	Planetary box speed	2.5-25 rpm
Agitator Assembly	Agitator blade diameter	432 mm
Agitator Assembly	Agitator blade style	Spiral twisted type; precision casting and machining ensure a 90-degree helical line
Agitator Assembly	Agitator blade material	304 stainless steel
Agitator Assembly	Agitator blade line speed	0.09-0.9 m/s
Agitator Assembly	Number of agitator blades	2
Agitator Assembly	Blade-to-blade distance	6±2 mm
Agitator Assembly	Blade-to-wall distance	3±1 mm
Agitator Assembly	Blade-to-bottom distance	3±1 mm
Dispersion Assembly	Working frequency	5-50 Hz
Dispersion Assembly	Dispersion power	22 kW
Dispersion Assembly	Dispersion speed	284-2840 rpm
Dispersion Assembly	Dispersion disc diameter	155 mm
Dispersion Assembly	Dispersion disc style	Serrated
Dispersion Assembly	Dispersion disc material	304 stainless steel
Dispersion Assembly	Dispersion disc line speed	2.3-23 m/s
Dispersion Assembly	Number of dispersion discs	4
Dispersion Assembly	Number of dispersion shafts	2
Wall-Scraping Assembly	Scraper support material	304 stainless steel
Wall-Scraping Assembly	Scraper plate material	Polytetrafluoroethylene PTFE
Wall-Scraping Assembly	Scraper speed	Same as planetary box speed
Wall-Scraping Assembly	Removability	Removable design; the scraper must be removed during high-viscosity processing
Base and Lifting Assembly	Base material	Carbon steel for high-rigidity structural construction
Base and Lifting Assembly	Lifting method	Hydraulic cylinder
Base and Lifting Assembly	Lifting guidance	High-precision linear guide rails
Base and Lifting Assembly	Lifting stroke	≤740 mm
Upper Barrel Assembly	Upper barrel material	304 stainless steel
Upper Barrel Assembly	Powder inlet	One flange connection, DN150
Upper Barrel Assembly	Liquid inlet	One G1 inch connection
Upper Barrel Assembly	Sight glass ports	Two DN110 tempered-glass sight glasses
Upper Barrel Assembly	Vacuum port	One G3/4 inch connection
Upper Barrel Assembly	Exhaust port	One G3/4 inch connection
Upper Barrel Assembly	Digital vacuum gauge port	One M14×1.5 female metric-thread connection

Category	Parameter	Specification
Control System	Electrical cabinet	Houses the variable-frequency drives and low-voltage electrical components
Control System	Manual operating panel	Houses buttons, knobs, and instruments
Control System	Power supply	AC 3×380 V±5%, 50 Hz
Control System	Control method	Electrical control plus hydraulic control
Control System	Drive and speed regulation	Variable-frequency drive startup and control
Control System	Cooling method	Air cooling and liquid cooling
Control System	Operating method	Buttons and knobs on the electrical cabinet front panel
Control System	Digital temperature display	Displays material temperature
Control System	Emergency stop button	One
Control System	Alarm system	Overtemperature alarm, overtemperature alarm shutdown, and alarm deactivation
Control System	Speed display	Panel meter displays operating speed
Control System	Power indicator	One
Control System	Timer	One timer controlling dispersion and agitation simultaneously
Control System	Optional HMI configuration	When selected, control-system functions are integrated into a touchscreen interface
Safety Interlock System	Emergency stop function	Pressing the emergency stop switch immediately stops the equipment and prevents further operation
Safety Interlock System	Low-speed agitation during lifting	The vessel can be raised while low-speed agitation continues
Safety Interlock System	High-speed dispersion enable	High-speed dispersion can operate only after the barrel reaches its raised position
Safety Interlock System	Operating safety lock	During mixing, the barrel cannot descend and the mixing barrel cannot be opened
Safety Interlock System	Vacuum backflow protection	A dedicated vacuum buffer tank helps prevent vacuum pump oil from flowing back into the mixing barrel
Safety Interlock System	Drive fault protection	The variable-frequency drive provides overload, overcurrent, overvoltage, leakage, and phase-loss protection
Safety Interlock System	Vessel lifting condition	The mixing barrel can rise only after reaching the required position condition
Safety Interlock System	Vessel lowering condition	The barrel cannot descend while vacuum remains in the vessel and atmospheric pressure has not been restored
Safety Interlock System	Raised-position locking	After the barrel reaches the raised position, a locking protection system prevents abnormal lowering during operation
Safety Interlock System	Dry-mixing lifting requirement	During the dry-mixing stage, the agitator blades must rotate while the barrel is being raised

Constant Temperature Electric Heated Vacuum Mixer

Item Number: JL08



Introduction

Constant temperature electric heated vacuum mixer for bubble free viscous material processing with adjustable vacuum, precise heating, variable speed control, and transparent vessel visibility

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Application	Description	Key Benefit
Pharmaceutical Formulation	Mix viscous pharmaceutical pastes, gels, and other formulation materials under vacuum while applying controlled heat to improve flow.	Reduces entrained gas and supports more consistent formulation quality.
Adhesives and Sealants	Process adhesive and sealant compounds that require thorough blending and controlled viscosity before dispensing or testing.	Helps produce smoother, bubble-reduced material for reliable application.
Cosmetics and Fragrance Products	Prepare cosmetic creams, viscous bases, fragrance compounds, and related products while visually monitoring material movement.	Supports controlled small-batch development with direct observation of the mixture.
Paints, Coatings, and Pigments	Mix coating materials, pigment systems, and auxiliary additives whose viscosity can limit dispersion and uniformity.	Heating improves material flow, while vacuum operation helps reduce bubbles.
Electronics and New Energy Materials	Prepare viscous electronic materials, functional pastes, and new energy research formulations before coating, assembly, or performance evaluation.	Provides adjustable speed, temperature, and vacuum conditions for repeatable research batches.
Fine Chemical and Academic Research	Conduct laboratory-scale preparation, process development, and comparative experiments across a wide range of viscous materials.	The 50 ml to 1000 ml capacity range supports flexible development work with limited material consumption.

Parameter	Specification
Product Item Number	JL08
Maximum Vacuum	-0.1 MPa
Heating Working Temperature	50°C to 150°C, freely settable
Temperature Control Accuracy	1%
Mixing Capacity	50 ml to 1000 ml
Motor Power	90 W
Mixing Speed	Adjustable from 30 to 466 rpm
Torque at High Speed	21.3 kg·cm at 333 rpm
Torque at Low Speed	6.9 kg·cm at 25 rpm
Applicable Ambient Temperature	-25°C to 40°C
Power Supply	220 V ±10%
Mixer Dimensions	380 × 290 × 580 mm
Temperature Controller Dimensions	260 × 220 × 125 mm
Total Weight	17 kg

Dry Powder Mixer Laboratory Mixing Equipment For Granules

Item Number: JL12



Introduction

High efficiency dry powder mixer and laboratory mixing equipment for uniform granule blending, stainless steel cleaning, flexible loading, and reliable processing across pharmaceutical, chemical, food, ceramic, metallurgical, and feed applications with practical operation and efficient material turnover

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Application	Description	Key Benefit
Pharmaceutical Powder Blending	Mix dry pharmaceutical powders or granular ingredients before downstream processing, filling, or formulation evaluation.	Promotes uniform material distribution and supports repeatable laboratory batches.
Chemical Material Processing	Blend dry chemical powders and granular raw materials during research, development, or small-scale production.	Provides controlled mechanical turnover with flexible manual or vacuum feeding.
Food Ingredient Mixing	Combine dry food powders or granular ingredients where hygienic handling and efficient cleaning are important.	Stainless steel construction and a smooth internal wall simplify cleaning between batches.
Feed Premix Preparation	Mix dry feed materials and granular components for laboratory evaluation or controlled premix preparation.	Supports consistent blending across small working volumes.
Ceramic Powder Preparation	Homogenize ceramic powders and granular material before forming, pressing, or other shaping processes.	Helps reduce concentration differences and improves feedstock uniformity.
Metallurgical Powder Processing	Blend metallic powders or granular materials during materials research and process development.	Delivers effective material movement in a compact laboratory-scale mixer.
Research and Quality Control	Prepare representative dry material blends for laboratory testing, formulation comparison, and quality checks.	Offers practical capacity choices and straightforward operation for repeated testing.

Parameter	JL12 20 Litre Variant	JL12 30 Litre Variant
Vessel capacity	20 L	30 L
Working volume	8 L	12 L
Motor power	0.55 kW	0.75 kW
Mixing speed	20 r/min	20 r/min
Overall dimensions length width height	1195 × 350 × 885 mm	1170 × 370 × 1045 mm
Recommended load	10 kg	10 kg
Equipment weight	120 kg	125 kg
Material type	Dry powders and granular materials	Dry powders and granular materials
Vessel configuration	V type asymmetric cylindrical vessel	V type asymmetric cylindrical vessel
Feeding method	Manual feeding or vacuum suction	Manual feeding or vacuum suction
Vessel material	Stainless steel	Stainless steel
Internal wall finish	Smooth interior for convenient cleaning	Smooth interior for convenient cleaning

Parameter	JL12 20 Litre Variant	JL12 30 Litre Variant
Mixing principle	Mechanical transmission drives reciprocating movement between two cylindrical chambers at different heights	Mechanical transmission drives reciprocating movement between two cylindrical chambers at different heights
Intended industries	Pharmaceutical, chemical, food, feed, ceramic, and metallurgical industries	Pharmaceutical, chemical, food, feed, ceramic, and metallurgical industries

500MI To 5L Battery Slurry Laboratory Vacuum Mixer

Item Number: JL15



Introduction

Explore a 500ML to 5L battery slurry laboratory vacuum mixer with 2L effective capacity, variable speed control, dual dispersing blades, precision 304 stainless steel construction, reliable vacuum retention, timed operation, and efficient mixing for demanding research workflows and development.

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Application	Description	Key Benefit
Battery Electrode Slurry Preparation	Mix active materials, conductive additives, binders, and solvents before electrode coating or subsequent cell fabrication steps.	Promotes uniform dispersion and supports repeatable slurry preparation between development batches.
Battery R&D Process Development	Evaluate mixing speed, torque, vacuum exposure, and processing time during formulation screening and laboratory-scale process optimization.	Provides adjustable operating conditions for comparing material recipes and process parameters.
Slurry Preparation Before Electrode Coating	Prepare consistent slurry for coating experiments where viscosity and particle distribution influence coating quality.	Helps create a stable material feed for controlled coating trials and process evaluation.
Advanced Materials Research	Process viscous or particulate formulations used in materials science research and laboratory-scale product development.	Combines vacuum treatment with adjustable agitation in a compact research platform.
Powder Metallurgy Research	Mix fine powders with binders or other formulation components before forming, pressing, or thermal processing studies.	Supports controlled circulation and improved batch-to-batch process consistency.
Ceramic Formulation Development	Prepare ceramic slurries and related compositions requiring controlled mixing and reduced air entrapment.	Enables adjustable speed selection for materials with different viscosities and mixing responses.
Academic Laboratory Experiments	Support teaching, research, and repeatable sample preparation in university and institutional laboratories.	Simplifies operation through pneumatic opening, timer control, and a compact laboratory-scale design.

Parameter	Specification
Model	JL15
Rated Power	0.75 kW, 220 V
Mixing Speed	0-1400 rpm; speed regulated through a variable-frequency drive
Effective Volume	2 L
Vessel Opening Method	Dual-arm pneumatic cylinder lifts the cover
Vessel Internal Dimensions	Φ125 mm inner wall diameter x 220 mm height
Overall Dimensions	Approximately 0.6 x 0.7 x 0.32 m, height x length x width
Weight	Approximately 75 kg
Timer Function	Available; freely settable from 0 to 99 hours
Automatic Operation	Automatically stops after the selected time and maintains the vacuum condition
Vacuum Retention	The soft-sealing process can maintain -0.098 MPa for more than 24 hours
Vessel Material	304 stainless steel
Vessel Finishing Process	Precision machining on a large horizontal lathe followed by polishing with a precision automatic polishing machine

Parameter	Specification
Mixing Blade Design	Dual dispersing blades circulate material upward, downward, and around the vessel
Motor Adjustment	Gearbox variable-frequency adjustment for selecting speed and torque according to process requirements and material viscosity
Support Structure	Dual precision guide columns
Cover Drive	Pneumatic cylinder drive

2L Laboratory Planetary Vacuum Mixer Cantilever Lifting Bucket

Item Number: JL02



Introduction

2L laboratory planetary vacuum mixer with cantilever lifting bucket for homogeneous battery slurry dispersion and high viscosity processing up to 1,200,000 cP, with adjustable heating cooling, precise dual agitation, and robust stainless steel construction for research scale production.

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Application	Description	Key Benefit
Battery Electrode Slurry Preparation	Mix active powders, conductive additives, binders, and liquid media for lithium-ion and other battery development workflows.	Promotes consistent powder wetting and uniform slurry distribution before coating or further electrode processing.
High-Viscosity Battery Formulations	Process thick, difficult-to-move formulations within the specified viscosity range of up to 1,200,000 cP.	Provides combined low-speed planetary mixing and high-speed dispersion for demanding rheology.
Conductive Material Dispersion	Disperse carbon materials and other fine additives into a binder or solvent system using the toothed dispersion disc.	Helps reduce agglomeration and improve additive distribution throughout the batch.
Advanced Materials Research	Develop ceramic, composite, functional powder, and specialty material formulations at laboratory scale.	Enables controlled experimentation with adjustable mixing and dispersion parameters.
Powder Metallurgy Binders and Pastes	Combine powders with liquid or binder phases for paste development and process trials.	Supports repeatable small-batch blending without requiring a larger production mixer.
Ceramic Slurry Development	Prepare viscous ceramic slurries for casting, coating, forming, or related laboratory evaluation.	Provides robust agitation for materials that require substantial mechanical energy.
Temperature-Sensitive Formulations	Use the vessel wall and bottom jackets with a customer-supplied circulation system for heating or cooling.	Helps maintain a more suitable process temperature during mixing and dispersion.
Academic and Pilot Laboratory Work	Conduct formulation screening, parameter studies, and scale-up preparation in research laboratories.	Combines useful batch capacity with flexible speed adjustment and accessible vessel handling.

Specification Group	Parameter	Value
Product Identification	Model	JL02
Vessel Assembly	Designed total volume	3.8L
Vessel Assembly	Effective volume	1.2L-2L
Vessel Assembly	Container internal diameter	180mm
Vessel Assembly	Container internal depth	150mm
Vessel Assembly	Material in contact with material	304ss
Vessel Assembly	Temperature-control jacket form	Single-layer jacket on vessel wall for cooling or heating; single-layer jacket on vessel bottom for cooling or heating
Vessel Assembly	Temperature-control jacket connection	G3/8", with quick-opening union coupling; jacket pressure resistance ≤ 0.4 MPa

SpecificationGroup	Parameter	Value
Vessel Assembly	Temperature-control jacket circulation system	Customer supplied
Vessel Assembly	Recommended jacket inlet water temperature	≤8℃
Vessel Assembly	Recommended cooling-water flow rate	□ 3.5L/min
Vessel Assembly	Discharge form	No discharge buckle
Vessel Assembly	Designed ambient temperature	-10~+120℃
Vessel Assembly	Movement method	No casters, manual handling
Mixing Assembly	Working frequency	5-50hz
Mixing Assembly	Mixing power	0.75kw
Mixing Assembly	Mixing rotation speed	8-76rpm
Mixing Assembly	Planetary box rotation speed	5-52rpm
Mixing Assembly	Mixing blade diameter	94mm
Mixing Assembly	Mixing blade style	Variable-section spiral twisted type, 90° spiral line
Mixing Assembly	Mixing blade material	304 ss
Mixing Assembly	Mixing blade line speed	/
Mixing Assembly	Mixing blade quantity	2pcs
Mixing Assembly	Blade pitch	6±1mm
Mixing Assembly	Distance between blade and vessel wall	3+1mm
Mixing Assembly	Distance between blade and vessel bottom	2-3mm
Dispersion Assembly	Working frequency	5-50hz
Dispersion Assembly	Dispersion power	1.1kw
Dispersion Assembly	Dispersion rotation speed	450-4450rpm
Dispersion Assembly	Dispersion disc diameter	60mm
Dispersion Assembly	Dispersion disc style	Toothed
Dispersion Assembly	Dispersion disc material	304 stainless steel
Dispersion Assembly	Dispersion line speed	1.3-13m/s
Dispersion Assembly	Dispersion disc quantity	1
Dispersion Assembly	Dispersion shaft quantity	1

1L 2L 3L 5L Hand Operated Laboratory Vacuum Mixer

Item Number: JL04



Introduction

Hand operated laboratory vacuum mixer for battery slurry, glue, and chemical processing, featuring 1L and 2L capacities while supporting 3L and 5L product searches variable speed heating and dependable vacuum processing for research teams

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Application	Description	Key Benefit
Lithium Battery Electrode Slurry	Mixes positive and negative electrode materials during laboratory-scale battery formulation and process development.	Supports uniform dispersion under controlled vacuum conditions and adjustable speed.
Battery Materials Research	Enables researchers to evaluate formulation changes, viscosity behavior, and mixing sequences using small effective volumes.	Reduces material consumption during experimental development and screening.
Adhesive and Glue Preparation	Processes glue and adhesive formulations that require consistent blending and controlled batch conditions.	Helps produce repeatable small batches with programmable mixing time.
Chemical Formulation Development	Supports laboratory mixing and dispersion for chemical materials with different viscosities and process requirements.	Provides adjustable speed, torque, vacuum, and optional heating functions.
Academic and Advanced Materials Research	Serves research teams investigating powders, slurries, binders, and other formulation systems.	Offers a flexible platform for controlled experiments and scale-oriented process studies.
Vacuum-Sensitive Mixing Processes	Handles applications where air removal and stable vacuum retention are important parts of the process.	Maintains a -0.098 MPa state for more than 24 hours through soft-sealing technology.

Parameter	JL04 1L Configuration	JL04 2L Configuration
Product type	Hand-operated laboratory vacuum mixer with vacuum mixing and dispersion	Hand-operated laboratory vacuum mixer with vacuum mixing and dispersion
Effective volume	1 L	2 L
Rated power	0.55 kW	0.75 kW
Voltage	220 V	220 V
Mixing speed	0-1400 r/min; speed adjusted through frequency converter	0-1400 r/min; speed adjusted through frequency converter
Vacuum retention	-0.098 MPa state maintained for more than 24 hours through soft-sealing technology	-0.098 MPa state maintained for more than 24 hours through soft-sealing technology
Mixing blade configuration	Dual dispersion blades	Dual dispersion blades
Vessel material	304 stainless steel	304 stainless steel
Vessel opening method	Cover raised by handwheel through dual-arm linear guide rails	Cover raised by handwheel through dual-arm linear guide rails
Vessel internal dimensions	Φ102 mm internal wall diameter × 185 mm height	Φ125 mm internal wall diameter × 200 mm height
Overall dimensions	Approximately 0.6 × 0.5 × 0.3 m, height × length × width	Approximately 0.6 × 0.5 × 0.3 m, height × length × width
Heating function	Available; 0-80°C	Available; 0-80°C

Parameter	JL04 1L Configuration	JL04 2L Configuration
Timer function	Settable from 0 to 99 h; automatic stop at completion while maintaining vacuum	Settable from 0 to 99 h; automatic stop at completion while maintaining vacuum
Approximate machine weight	Approximately 88 kg	Approximately 88 kg
Mixing drive	Geared motor with frequency-converter speed adjustment	Geared motor with frequency-converter speed adjustment
Primary processing functions	Vacuum mixing and material dispersion	Vacuum mixing and material dispersion
Referenced site identifier	JL04 1L Configuration	JL04 2L Configuration

20L Laboratory Planetary Dispersion Vacuum Mixer Cantilever Lifting Bucket For Lithium Battery Slurry Mixing

Item Number: JL06



Introduction

20L laboratory planetary dispersion vacuum mixer with cantilever lifting bucket for lithium battery slurry mixing, high viscosity processing, precise heating cooling, and uniform powder liquid dispersion under vacuum conditions for dependable scalable research and production workflows consistent results.

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Application	Description	Key Benefit
Lithium Battery Slurry Mixing	Mixes battery powders and liquids under vacuum to produce a uniform slurry for electrode preparation and related cell fabrication processes.	Supports consistent powder-liquid integration and helps manage air-sensitive or bubble-sensitive processing conditions.
High-Solids Electrode Formulation	Handles highly viscous formulations within the specified viscosity range of up to 1,200,000 cP using planetary mixing and high-speed dispersion.	Provides the torque, speed range, and dispersion action needed for demanding thick-material batches.
Battery Material Research	Enables laboratory teams to test formulation ratios, mixing sequences, and thermal conditions using effective batch volumes from 8L to 20L.	Provides flexible batch sizing for repeatable research and process development.
Advanced Materials Processing	Combines powders and liquids for research involving high-viscosity material systems and controlled temperature processing.	Integrates mixing, dispersion, vacuum, heating, and cooling functions in one vessel.
Powder Metallurgy Slurry Preparation	Supports the preparation of powder-liquid mixtures requiring intensive dispersion and controlled material movement.	Helps improve batch uniformity through coordinated planetary and dispersion actions.
Ceramic and Academic Laboratory Work	Serves laboratory and academic research workflows that require controlled powder-liquid blending, vacuum operation, and temperature management.	Offers a mobile, configurable platform for small-batch experimentation and scale-up-oriented studies.

Parameter	Specification
Product Item Number	JL06
Equipment type	20L laboratory planetary dispersion vacuum mixer with cantilever lifting bucket
Primary material function	Mixing and dispersion of common battery powders and liquids to produce uniform battery slurry
Suitable process viscosity	≤1,200,000 cP
Vacuum system requirement	Customer supplied
Required pumping capacity	4L/s, 2X-4
Vacuum level	-0.098 MPa
Vacuum retention	After 24 hours, pressure remains above -0.085 MPa without leakage into the vessel
Main machine power	>5.2 kW
Overall weight	Approximately 1000kg
Overall dimensions	Length 1546mm × width 895mm × height 1792mm
Exterior color	Off-white
Required floor load capacity	900kg/m²

Parameter	Specification
Ambient design temperature	-10 to +120°C
Mobility	Caster-mounted mobile configuration

Parameter	Specification
Vessel design total volume	28L
Effective working volume	8-20L
Vessel internal diameter	350mm
Vessel internal depth	300mm
Vessel material	304 stainless steel on material-contacting parts
Temperature jacket configuration	Single-layer jacket on vessel wall for cooling or heating; single-layer jacket on vessel bottom for cooling or heating
Temperature jacket connections	G1/2-inch connections with quick-opening union fittings
Jacket pressure rating	≤0.4 MPa
Jacket circulation system	Customer supplied
Recommended jacket inlet temperature	≤8°C
Recommended cooling-water flow	>10L/min
Discharge outlet	One G1-inch three-piece discharge ball valve at vessel bottom

Parameter	Specification
Operating frequency	5-50Hz
Mixing power	2.2kW
Mixing blade speed	8-86rpm
Planetary box speed	5-53rpm
Mixing blade diameter	194mm
Mixing blade style	Spiral helical type
Mixing blade manufacturing	Precision casting and machining maintain a 90-degree helical line
Mixing blade material	304 stainless steel
Mixing blade linear speed	0.09-0.9m/s
Number of mixing blades	2
Blade-to-blade distance	7±2.5mm
Blade-to-vessel-wall distance	3±1.5mm
Blade-to-vessel-bottom distance	3±1mm

Parameter	Specification
Operating frequency	5-50Hz
Dispersion power	3kW
Dispersion speed	600-6000rpm
Dispersion disc diameter	70mm
Dispersion disc style	Toothed type
Dispersion disc material	304 stainless steel
Dispersion linear speed	2.1-21m/s
Number of dispersion discs	2

Parameter	Specification
Number of dispersion shafts	1



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