

GRS Corporation

Your Battery Research Partner...

- Coin Cell Lab Line
- Coin Cell Lab Research Process & Equipment
- Battery / Super Capacitor / Lab Line Electrode Preparation
- Battery Lab Line Pouch Cell / Supercapacitor
 Assemble
- Battery / Supercapacitor Tester
- Battery Material
- Other Lab Equipment









LiFePO4

LiCoO2

LiMn2O4







LiMnCoO2

Polyvinylidene Fluoride (PVDF)

NMP







Graphite

Li4Ti5O12

Carboxymethyle Cellulose (CMC)









Acetylene Black



Conductive Carbon Black



Electrolyte



Aluminum Foil



Copper Foil



Aluminum Laminated Film



Battery Separator



Nickel Aluminum Tube





High Temperature Kapton Tape



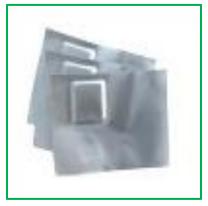
Hot Melt Adhesive



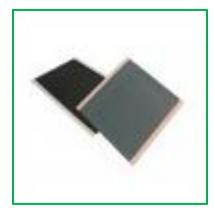
Strapping Tape



Teflon Tape



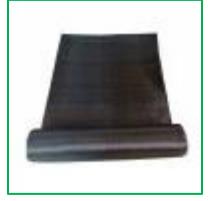
Formed Aluminum Laminated Film



Cathode Electrode & Anode Electrode



Activated Carbon



Carbon Coil



Aluminum &Copper Mesh





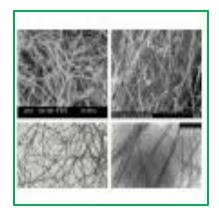
Carbon Coated
Aluminum Foil & Copper
Foil



Graphite Sheet



Nickel Aluminum Strip



Carbon Nano Tubes



Conductive Graphite



Graphene



Graphite Oxide



Copper Foam



Nickel & Iron Nickel Foam

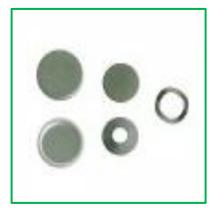




1B650 Battery Case



Air Can Cell Case



CR2032 Coin Cell Case



Lithium Metal Foil



Lithium Chips



Aluminum Bottles





VACUUM OVEN

PRODUCT DESCRIPTION

The vacuum oven is used for lithium battery materials, electrode and battery core vacuum dying.



SPECIFICATION

Valtage	AC 440/000V F0/00UZ	
Voltage	AC 110/220V, 50/60HZ	
Power	500W	
Temperature range	RT+10-250℃	
Temperature fluctuation	±0.5℃	
Vacuum degree	-0.1MPa	
Inner box size(L*W*H)	300mm*300mm*270mm	
Inner box material	304 stainless steel	
Outside shell material	High quality cold-rolled steel plate electrostatic spray	
Box door	Toughened bulletproof double glass door	
Safety device	With over temperature protection, grounding etc.	
Shelf	1pc	
Dimension(L*W*H)	580mm*450mm*450mm	

VACUUM MIXER

PRODUCT DESCRIPTION

This vacuum mixer is vacuum mixing, dispersion efficient equipment, it is suitable for battery electrode paste and various ceramic materials mixing, due to complete the process in vacuum station, fully implemented without air bubbles, improve the filling material and density.



SPECIFICATION

Voltage	AC 110/220V, 50/60HZ	
Power	150W	
Stirring speed	0 - 320 RPM; the inverter speed control	
Vacuum	≤-90 ~ -95Kpa	
Accessories volume	150ml stainless steel vacuum drum, can be customized	
Mixing time	0 - 9999 minutes (can be set)	
Oscillation mode	Infinitely adjustable-speed	
Dimensions(L*W*H)	330mm*310mm*510mm	
Weight	20kg	

VACUUM PLANETARY MIXER

PRODUCT DESCRIPTION

It is one high efficiency equipment with vacuum molding and dispersion function, suitable for the battery lab research of anode and cathode electrode slurry mixing process, as well as for the powdered and ceramic materials mixing.



Voltage	AC 220V/110V, 50/60HZ		
Power	200W		
Stirring speed	Max 600 rpm		
Multi segment function	There segment speed can be set		
Fitting volume	500ml stainless steel vacuum mixing tank		
Stirring time	0 - 600min can be set		
Dimension(L*W*H)	330mm*320mm*570mm		
Weight	35kg		
Remark	Built in vacuum pump, vacuum value -0.08Mpa. Standard double screw propeller, others according to the design of tank.		





VACUUM MIXER

PRODUCT DESCRIPTION

The film coating machine with dryer is used for varies kinds of materials coating. It is supplied with Internal vacuum pump and heating system, with a precision heating temperature upto 200°C.





Voltage	AC 110/220V, 50/60HZ	
Power	650W	
Coating speed	0-100mm/s, step-less transmission	
Accuracy	10mm/sec	
Stroke length	10 - 250 mm adjustable by using adjustable position switch	
Platform	Aluminum alloy flat vacuum chuck	
Slicker	Width 0-150mm; adjustable range 0.01-3.5mm	
Heating dry system	RT-200°C, digital temperature control accuracy ±1°C	
Dimension (L*W*H)	500mm*350mm*320mm	
Weight	42kg	

MANUAL ROLLER PRESS MACHINE

PRODUCT DESCRIPTION

This is a manual rolling press machine. It has dual rollers and dual grade micrometer. It is an ideal rolling press for adjusting thickness and increasing active material density of the electrode in Li-ion batteries research after coating and drying.

SPECIFICATION

Roller dimension	96mm(Dia.) x 100mm(W)	
Roller material	Made from hardened tool steel (HRC > 60)	
	With Cr electroplated coating, surface finish > 0.8	
Roller press accuracy	≤±0.005	
Roller press thickness	0-2mm adjusted with dial gauge	
Roller press width	Max 100mm	
Dimension(L*W*H)	350mm*240mm*350mm	
Weight	45kg	

ELECTRIC ROLLER PRESS MACHINE

PRODUCT DESCRIPTION

This is a compact precision electric rolling press machine. It has dual rollers and dual grade micrometer. It is an ideal rolling press for adjusting thickness and increasing active material density of the electrode in Li-ion batteries research after coating and drying.



Voltage	AC 110/220V, 50/60HZ	
Power	120W	
Roller dimension	96mm(Dia.) x 100mm(W)	
Roller material	Hardness HRC62; surface finish >0.8	
Roller press accuracy	≤±0.005	
Roller press thickness	0-2mm adjusted with dial gauge	
Roller press width	Max 100mm	
Roller press speed	0-40mm/s adjustable	
Dimension(L*W*H)	385mm*245mm*355mm	
Weight	55kg	





HOT ROLLER PRESS MACHINE

PRODUCT DESCRIPTION

This is a compact hot rolling press machine mainly serves for pressing samples in the lab or other applications in the material research especially for increasing active material density of the electrode in Li-ion batteries research after coating.



SPECIFICATION

Voltage	AC 110/220V, 50/60HZ	
Power	800W	
Roller temperature	RT-130, adjustable and digital display	
Roller diameter	2-Ф96mm	
Roller surface	Hardness HRC62; surface finish >0.8	
Roller press thickness	0-2mm, adjustable	
Working speed	0-40mm/s	
Roller press width	Max 100mm	
Dimension (L*W*H)	500mm*220mm*320mm	
Weight	55kg	

HYDRAULIC PRESS MACHINE

PRODUCT DESCRIPTION



It is a desktop manual pressing machine for materials / chemistry research laboratories to prepare compound ceramic sample.

SPECIFICATION

Press die size	Diameter 50mm, customized	
Press stroke	30mm	
Rocker pressure	<6kg	
Max pressure	200kg/cm2	
Working pressure	80-100kg/cm2	
Dimension(L*W*H)	232mm*165mm*320mm	
Weight	28kg	

ELECTRODE PUNCHING MACHINE

PRODUCT DESCRIPTION

The coin cell disc cutter is used for coin cell electrode punching with customized cutting die. The resulting discs can be used as electrode/separator discs of split test cell and coin cell for battery researchers.



Operating	Manual	
Punching size	φ8-24mm can be chosen	
Punching stroke	25mm	
Punching thickness	0.005-0.5mm electrode and separator	
Dimension(L*W*H)	110mm*150mm*235mm	
Weight	6kg	





HYDRAULIC COMPILING MACHINE

PRODUCT DESCRIPTION

Coin cell crimper is a newly designed coin cell sealing machine with lighter weight. It can also be used for disassemble purpose with disassemble die.

SPECIFICATION



Standard crimping Die	One set of crimping or disassemble die for CR2032, CR2025, and CR2016 or CR2325, CR2450, AG3, AG5
Structure	Heavy duty steel platform
Pressure	Max. 8 metric tons hydraulic pump with automatic pressure relief Max.200kg/cm2 on CR20XX series coin cell
Dimension	228mm*176mm*310mm
Weight	25kg

BATTERY SPLIT TEST CELL

PRODUCT DESCRIPTION

The split test cell is used for rechargeable battery and battery electrode materials research.

SPECIFICATION

Model	TOB-EQ-STC	TOB-3ESTC15
Structure	Full stainless steel	Full stainless steel
Electrode thickness	Max.6mm	Accept various thicknesses
Optional	10, 12, 15, 19, 20, and 24 mm diameter customized	

COATING DEVICE

PRODUCT DESCRIPTION

Multi-groove coating device is designed for use on a flat substrate coating uniformly paint, adhesives and similar products.



SPECIFICATION

The effective coating width:

TOB-ZBQ206 universal type 80mm (coating device total length 100mm)
TOB-ZBQ205 lengthened type 160mm (coating device total length 190mm)

Universal Type	Thickness	Lengthened type	Thickness
TOB-ZBQ206/1	5μm,10μm,15μm,20μm	TOB-ZBQ205/1	5μm,10μm,15μm,20μm
TOB-ZBQ206/2	25µm,50µm,75µm,100µm	TOB-ZBQ205/2	25µm,50µm,75µm,100µm
TOB-ZBQ206/3	50μm,100μm,150μm,200μm	TOB-ZBQ205/3	50μm,100μm,150μm,200μm
TOB-ZBQ206/4	30µm,60µm,90µm,120µm	TOB-ZBQ205/4	30µm,60µm,90µm,120µm
TOB-ZBQ206/5	100μm,200μm,300μm,400μm	TOB-ZBQ205/5	100µm,200µm,300µm,400µm
TOB-ZBQ206/6	50µm,75µm,100µm,150µm	TOB-ZBQ205/6	50μm,75μm,100μm,150μm
TOB-ZBQ206/7	100µm,150µm,200µm,250µm	TOB-ZBQ205/7	100µm,150µm,200µm,250µm
TOB-ZBQ206/8	250µm,500µm,750µm,1000µm	TOB-ZBQ205/8	250µm,500µm,750µm,1000µm





PRODUCT DESCRIPTION



It is an excellent tool to make quality film for material research in laboratory to make ceramic tape casting, battery electrodes, and various coating at lower cost. Stainless steel knife blade with precision ground edge.



Model	TOB-KTQ-100	TOB-KTQ-180S	TOB-KTQ-150WA	TOB-KTQ-150D	TOB-KTQ-150DA
Photo		1	No.	The state of the s	
Feature	General type	With slurry guiding plate	Width adjustable	Double blades	Adjustable digital display
Material	Blade: 304 stainless steel; frame: aluminum alloy				
Accuracy	10 microns				
Thickness	0-3500um				
Width	50mm, 100mm, 150mm, 200mm, 250mm				





GLOVE BOX & SAFETY BOXES

Glovebox with Purification System

- High quality manufacturing ISO 9001:2008
- Leak test according to ISO 10648 2, Class 1
- Stainless steel1.4301 (AISI 304)
- Different sizes for 2, 3, 4 gloves
- Modular design for high flexibility (expandable)
- HEPA H14 filters
- LED inside
- Front window in polycarbonate, easy to disassemble
- Leveling feet and solid base stand with castors

Gas Purifier X-Line

- Filter columns for removal of O₂ and H₂O
- Achievable values for O₂ and H₂O < 1ppm
- Fully automated purification and regeneration
- For gloveboxes up to 2, 6 m3
- X-Line (1 filters column)
- GS ECO-Safety Mode< 100 W for standard system
- Siemens PLC with 7" color touch screen
- Intuitive GS software
- Recording of values for O₂, H₂O and pressure for 5 days

Antechambers

- Standard antechambers in d = 400 mm and d = 150
- mm
- Manual antechamber cycles
- Different antechamber sizes and shapes available

Accessories

- Solvent vapor removal
- Freezer up to 40 °C
- Microscope
- Further individualized solutions available











Flushing Glove Box

Negative Pressure Glove Box

Power Handling Glove Box

Safety Working Box

Mobile Desiccator

Mini Storage Desiccator

Mini Black Storage Desiccator

Vacuum Desiccator

Glove Box Accessories



