Shandong Xinxu Group Corporation

For Better Tomorrow

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01 Company Profile

Shandong Xinxu Group Corporation. Ltd is the leading battery equipment manufacturer, specializes in manufacturing and delivery of high quality equipment, service, expertises to address the diverse need for green battery making.

With continuous technological development and state of the art product, satisfying the customer is the major motivation to every Xinxu employee.

Due to this principle, it got ISO9001 Quality Management System, ISO14001 Environmental Management Certificate and Europe CE Certificate in the year of 2011.

With day by day hard work, we have successfully occupied 90% domestic market and exported to India, Thailand ,Turkey , Ukraine, Tunisia, Morocco, Egypt , Bangladesh with high reputation from the customers.

02 Company Structure

2010: Zibo Xinxu Power Technology Co.,Ltd	Battery Production& Lead Recycly Machines
2015: Yantai Goldentide Battery Co.,Ltd	Battery Manufacturing
2015: Shandong Walton Radiation Protection Equipment Co.,Ltd	Production & trading of nuclear radistion products
2015: Shandong Walton Power Technology Co.,Ltd	Lithium Battery making
2017: Shandong Environmental Technology Co.,Ltd	Water treatment
2018: CSIC Xinxu Energy Co.,Ltd	Oil pump and pipeline making

02 Main Business

Main Product:
Forklift Battery,
OPzS/OPzV Battery;
Golf Car Battery.

Zibo Xinxu Power Technology Co.Ltd

R&D and Manufacturing of Industrial Battery Equipment, Lithium Battery Making Machines and Lead Recycle Equipment

PE Separator

Yantai Goldentide Unikodi Battery Co.,Ltd

Separator Technology Co.,ltd

02 Company Constituting

Shandong Walton Power Technology Ltd

Manufacturing & Trading of Nuclear Radiation Proectition Facility

Main Business:

Environmental Engineering

Manufacturing of Lithium Battery

Shandong Walton Lithium Battery Co.,Ltd

Shandong Xinxu Environmental Technology Co.Ltd

02

02 Marketing Network

03 Main Business

- Tubular Battery Making Equipment
- Industrial Battery Production & Turnkey Project
- Car Battery Making Machine
- PE Separator Production
- Lead Recycle Projects
- Lithium Branch and Projects

03 Automatic & Manual Unloading Pressure Die Casting Machine

03 Pressure Die Casting Machine

Parameter / Model	Length(mm)	Diameter(mm)	Lead Pot Capacity(T)	Total Power (Kw)	Capacity (Pcs/ Min)	Mold Locking Power(K·N)	Dimensions (mm)
PDC-300	≤350	≥1.8	1.5	49	2-4	≤1800	4100×780×1500
PDC-300 Twin	≤300	≥1.8	1.5	49	4-6	≤1800	4100×950×1500
PDC-500	≤530	≥3.2	1.5	52	2-3	≤1800	4500×850×1550
PDC-500 Twin	≤450	≥3.2	1.5	52	4-6	≤1800	5000×950×1550
PDC-700	≤630	≥3.2	1.5	52	2-3	≤2400	5000×900×1600
PDC-700 AUTO	≤630	≥3.2	1.5	56	3-4	≤2400	5000×2200×2200

03 Gravity Casting Machine

Small & Industrial caster

1 pot with Max 8 Caster

Electric Heating /Gas Heating for option

Match with Wirz Mould

03 Grid Pasting Machine

参数 Parameter / 型号 Model	板栅长度 Grid length (mm)	铅膏密度 Adaptation lead paste density (g/cm³)	板栅厚度 Paste thickness (mm)	涂板精度 Thickness error (mm)	生产效率 Production capacity (pcs/min)	总功率 Total Power (kw)
TBJ-I	350-620	3.8-4.6	2.6-5	±0.1	40-50	15
TBJ II	200-400	3.8-4.6	1.5-5	±0.1	80-120	15

Application: used to paste the viscous or sandy paste to the Pb-Sb and Pb-Ca grids.
Composition: Auto plate feeding device, pasting machine, acid- drenching and pressing devices, control system and facial drier (optional).

Performance feature

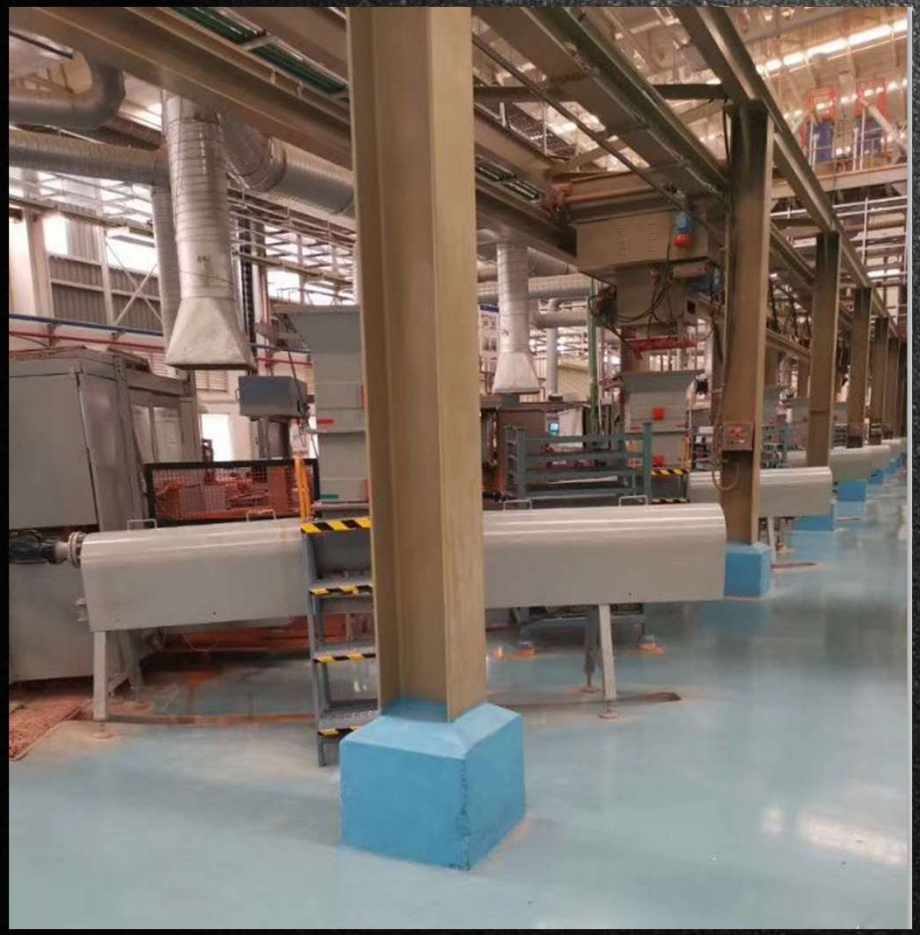
☆The pasting machine is mechanically auto supplied, the pasting width can be adjusted manually;
☆The machine will stop working if no grid or overlapping is tested;
☆The hopper can be left in tilt to facilitate the operator to observe and maintain fault;
☆Accurate paste feeding with better surface quality;
☆With high production efficiency.

03 Paste Filling System

- Application:used for acitve material filling during battery tube spine pasting process.
- **Performance** Feature:

✓ Automatically position and feed the plate,fill the paste,seal and weld the bottom bar,wash and weigh;
✓ Environmental friendly;
✓ The wasted lead paste and water can be collected and reused.
✓ Use transducers to control the speed,the paste and be well pased;
✓ Controlled by HIM & PLC with high precision to ensure smooth and safe running;
✓ It can detect grid automatically,will stop without grid;

03 Paste Filling System



03 Dry Filling System

Filling Jig

Composition: 1. Lead Oxide Silo; 2.Weighting Device; 3. Lead Oxide Mixer; 4. Lifting Device; 5. Screw Converyor;6. Metering Device ; 7. Lead Oxide Returning Screw; 8. Exhauster & Collection Device

03 Automatic Water Bath Formation

Including formation tank,

auto battery conveyor,

fume treatment system,

water recycle system

03 Acid Recirculation System-12V

Application

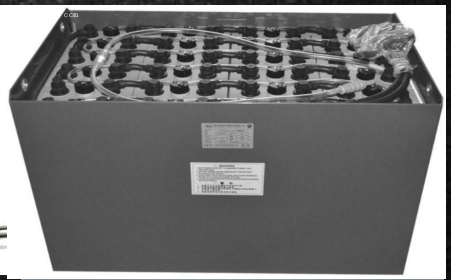
Used for Formation and Charging for 12V flooded battery.

- Truck Battery,
- Golf Car Battery,
- Solar Battery.

03 Acid Recirculation System-2V

Used for Formation and Charging for 2V flooded battery.

- Forklift Batteries
- OPzV/OPzS batteries



03 Acid Recirculation System-2V

03 Acid Recirculation System

03 Acid Recirculation System

Battery type / Item	12V Car Battery	12V Truck Battery	12V Inverter Battery	2V Traction Battery	2V OPzS OPzV
Cycle Time	3 cycles/day	2-2.5 cycles/day	20-22 hrs/cycle	<48hrs	48-60hrs
PS: The formation time depends on the battery technologies difference					
Battery Qty/Cycle	180-360pcs	180pcs	180pcs	384pcs	384pcs
Machine Size:	16*2.3*4.0m			11*2.4*4.5m	
Rectifier	300V/60A-6Circuits,300V/100A-2Circuits, 270V/180A-2Circuits			220V300A-Single Circuit; 220V500A-Single Circuit	
Powered Conveyor for Option					

03 Water Spraying Facility & Flow Indicator

Considering the safe production of the customers,we add “Water Spraying Facility” for the ACS.

Much more convenient for the operators to check if the plug blocked,to ensure the battery formation quality.

03 Rectifier

- IGBT & SCR Rectifier available
- Communication with formation system, Easy operation
- Computer control for optional

03 Curing Chamber

Performance Advantage:

- **Curing&Drying process can be completed in one time and also independently.**
- Imported temperature&humidity transducer with high temperature resistant, anti acid mist and dust, long service life.
- PLC control, touch screen operation panel, 10 sets of different process parameters can be stored in advance. Each set can consist of 20 period and each period can last for 999 minutes.
- Humidification has two ways, atomized water and steam. It can switch automatically according to the actual temperature and customer’ s demand.

03 Curing Chamber

Back

Control range	Curing: Temp: 0～65℃/Hmd≥95%
	Drying: Temp: 0～85℃/Hmd≤15%
Control accuracy	Temp: ±2℃(below 55℃)
	Temp: ±3℃(above 55℃)
	Hmd: ±3%RH
Inner size	3940(w)×3500(t)×2900(h)mm
Circulating fan	Wind amount: 17000 M3/H, Motor power:11kw
Temp/hmd checkin	Adopting w,ml;et and dry bulb temperature and humidity measurement.
Compressed air	0.4MPa～0.6MPa
Water pressure	0.1MPa～0.2MPa
Power	Total power:14kw(exclude the electricity heating)
Heating way	Indirect heating of stainless steel heat exchanger
Others	Steam generator and mist pipe need pure water, and gas pressure need to meet the demand of burner.

03 Forklift Battery : BS & DIN types

03 Forklift Battery： BS & DIN types

JUNGHEINRICH

HYSTER

MITSUBISHI MOTORS

DOOSAN

LIUGONG 柳工

CROWN 科朗叉车

03 OPzS & OPzV Battery

03 OPzS Series

OPzS 系列
OPzS Series

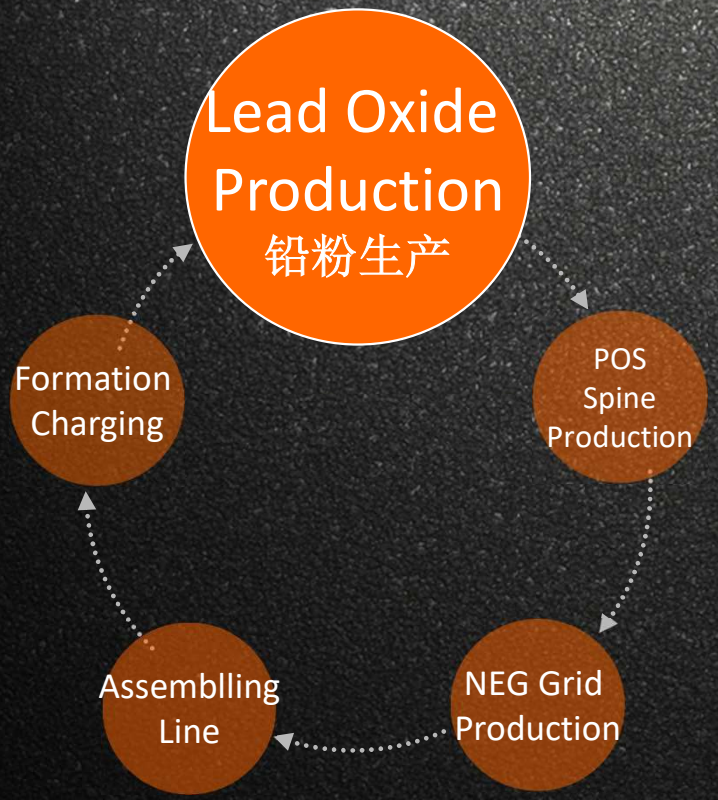
型号 Type	额定电压 Rated Voltage (V)	额定容量 Rated Capacity (Ah)			最大外形尺寸 Maximum Outer Size (mm)				参考重量 Weight (kg)
		10hr	1hr	0.5hr					
		终止电压 Final Voltage 1.80V	终止电压 Final Voltage 1.75V	终止电压 Final Voltage 1.65V	长 Length	宽 Width	高 Height	总高 Total Height	
4OPzS200	2	200	90	70	105	208	357	412	17.5
5OPzS250		250	112.5	87.5	126	208	357	412	21.3
6OPzS300		300	135	105	147	208	357	412	25.0
5OPzS350		350	157.5	122.5	126	208	473	528	28.3
6OPzS420		420	189	147	147	208	473	528	33.5
7OPzS490		490	220.5	171.5	168	208	473	528	38.5
6OPzS600		600	270	210	147	208	648	703	46.5
8OPzS800		800	360	280	193	212	648	703	63.0
10OPzS1000		1000	450	350	235	212	648	703	77.0
12OPzS1200		1200	540	420	277	212	648	703	91.0
12OPzS1500		1500	675	525	277	212	800	855	112.0
16OPzS2000		2000	900	700	401	216	775	830	153.0
20OPzS2500		2500	1125	875	489	214	775	830	189.3
24OPzS3000		3000	1350	1050	578	214	775	830	224.2

03 OPzV Series

OPzV 系列
OPzV Series

型号 Type	额定电压 Rated Voltage (V)	额定容量 Rated Capacity (Ah)			最大外形尺寸 Maximum Outer Size (mm)				参考重量 Weight (kg)
		10hr	3hr	1hr	长 Length	宽 Width	高 Height	总高 Total Height	
		终止电压 Final Voltage 1.80V	终止电压 Final Voltage 1.80V	终止电压 Final Voltage 1.75V					
4OPzV200	2	200	150	96	105	208	357	388	19.3
5OPzV250		250	187.5	120	126	208	357	388	23.8
6OPzV300		300	225	144	147	208	357	388	27.3
5OPzV350		350	262.5	168	126	208	473	504	30.8
6OPzV420		420	315	201.6	147	208	473	504	36.3
7OPzV490		490	367.5	235.2	168	208	473	504	41.8
6OPzV600		600	450	288	147	208	648	679	49.3
8OPzV800		800	600	384	193	212	648	679	66.3
10OPzV1000		1000	750	480	235	212	648	679	80.8
12OPzV1200		1200	900	576	277	212	648	679	96.5
12OPzV1500		1500	1125	720	277	212	799	830	118.5
16OPzV2000		2000	1500	960	401	216	774	805	161.5
20OPzV2500		2500	1875	1200	489	214	774	805	199.8
24OPzV3000		3000	2250	1440	578	214	774	805	237.0

03 Oxide Production



03 Positive Plate Production

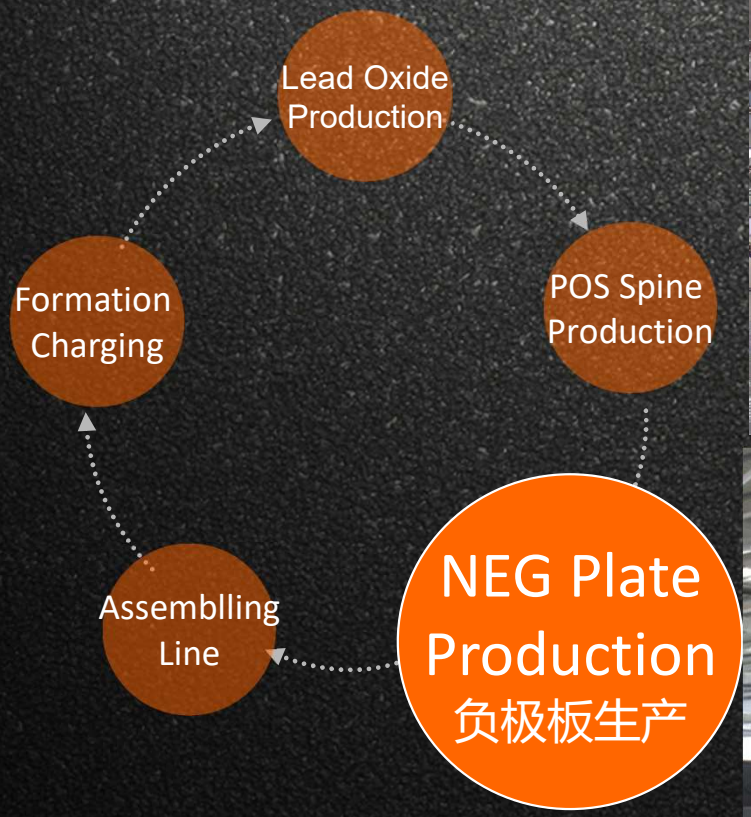
Lead Oxide Production

Formation Charging

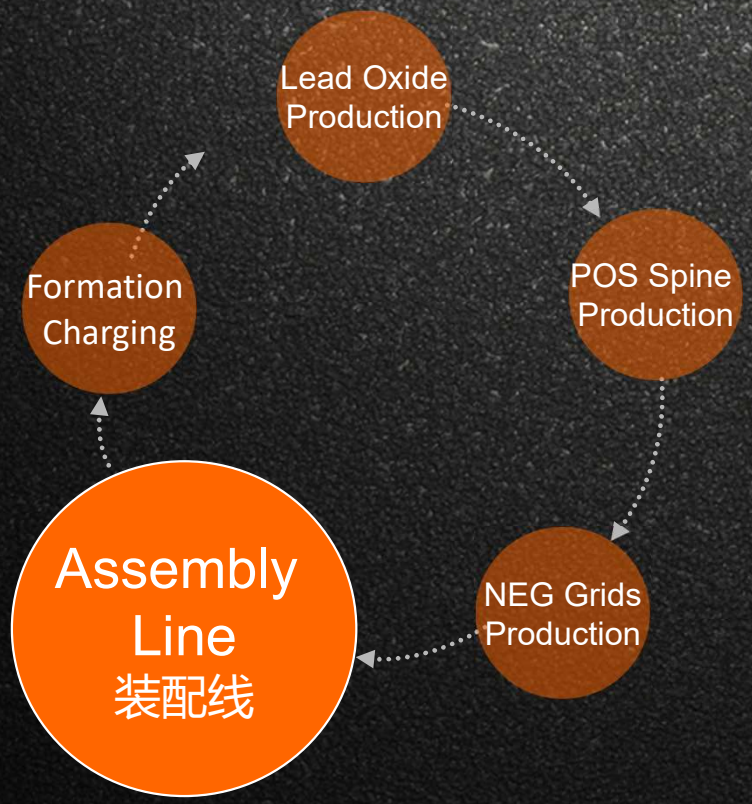
Assemblling

POS Plate Production
正极板生产

03 Negative Plate Section

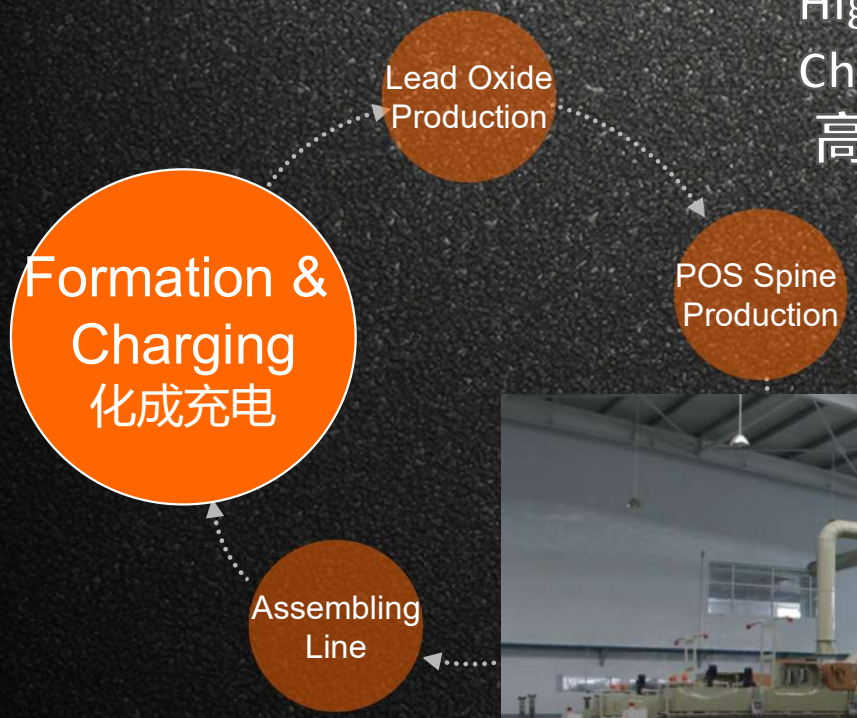


03 Battery Assembly Line



03 Battery Formation

High Efficiency & Qualified Formation & Charging System
高效率高品质化成充电



03 Quality Insurance 质量保证

Advance Production Equipment先进的生产设备

Strict Quality Test
严格的质量检验

High-quality Material
优质原材料

Strict Management
严谨的管理

03 Turnkey Project

国家Country	项目内容Project	提供的主要服务Main Service	项目时间Project Time
中国China	烟台金潮宇科蓄电池100万KVAH储能电池工厂100million KVAH storage battery plant of Yantai Goldentide Unikodi Battery Co.,Ltd.	生产线工艺布局、主设备供应、厂房配电、环保设施设计Production Layout, Main Machine Supply,Plant distribution,Environment equipment design	Oct.,2014--Apr.,2015
印度India	江森自动印度储能电池工厂Indian Storage Battery Plant of Johnson Control	极板生产设备和工艺，电池化成设备供应和工艺指导Plate manufacturing Equipment and Technology;Battery formation System and Production process guidance	2015年2月--2016年7月
巴基斯坦 Pakistan	凤凰电池储能电池和UPS电池项目Phoenix Battery Storage Battery & UPS battery project	产品设计、生产工艺指导、全套设备供应 Production Design,Production process guidance,the whole set equipment supply	2017年7月--2018年5月投产 Started from July 2017 .Production began in May 2018
俄罗斯Russia	Tutongs 工业电池项目Tutongs Industry Battery Project	设备供应、工业电池生产工艺Equipment supply,Industry Battery Technology	2018年7月--至今，预计2019年10月投产Apr.,2017 up to now.Production is expected to begin in Feb.. 2018

03 Technical Team

- Mr.Shao Liren,Senior Product Engineer
- 42 years experience in VRLA battery & traction battery

- Mr.Yao Shiguang , Senior Product Engineer
- 26 years experience traction battery

- Mr.Liu Wei, Senior Product Engineer
- 15 years experience in OPzS & OPzV battery

03 Technical Team

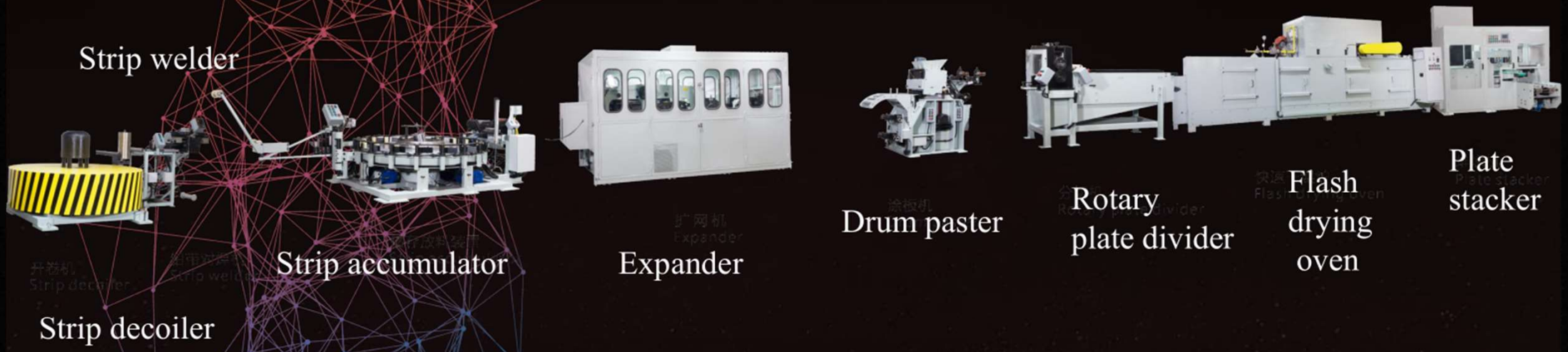
Back

- Mr.Nie Bin,Project Engineer
- 24 years experience in traction battery industry

- Mr.Chen Weifang, Senior Mould Engineer
- 23 years experience in mould & tooling design

- Mr.An Ning, Senior Electrical Engineer
- 26 years experience in factory in High and low voltage power distribution design

03 Rotary Expander & Expander Line--- Collaborated with Qiyuan



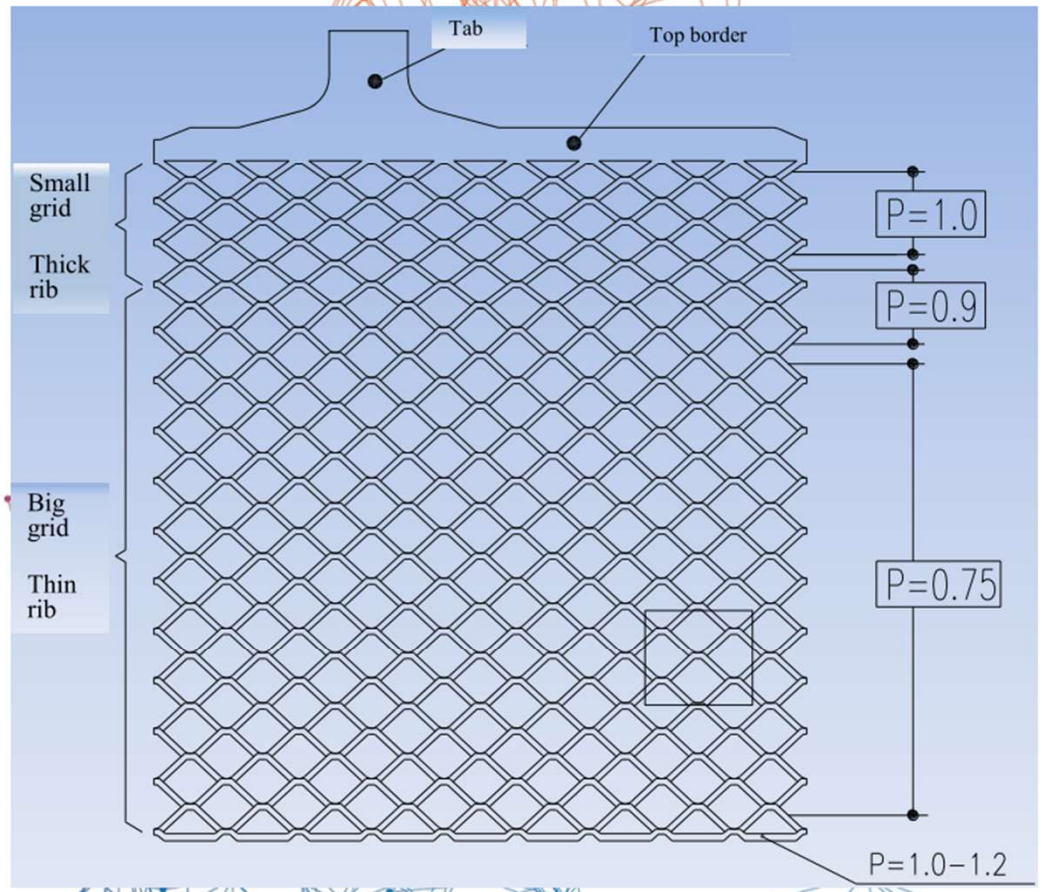
Production speed：28m/min，about 500 plates

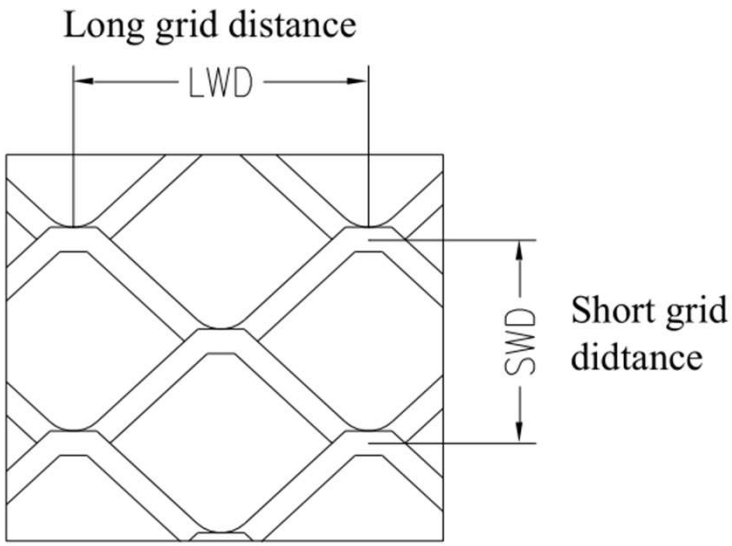
Operators：3 ~ 4 people

03 Rotary Expander & Expander Line

03 Rotary Expander & Expander Line

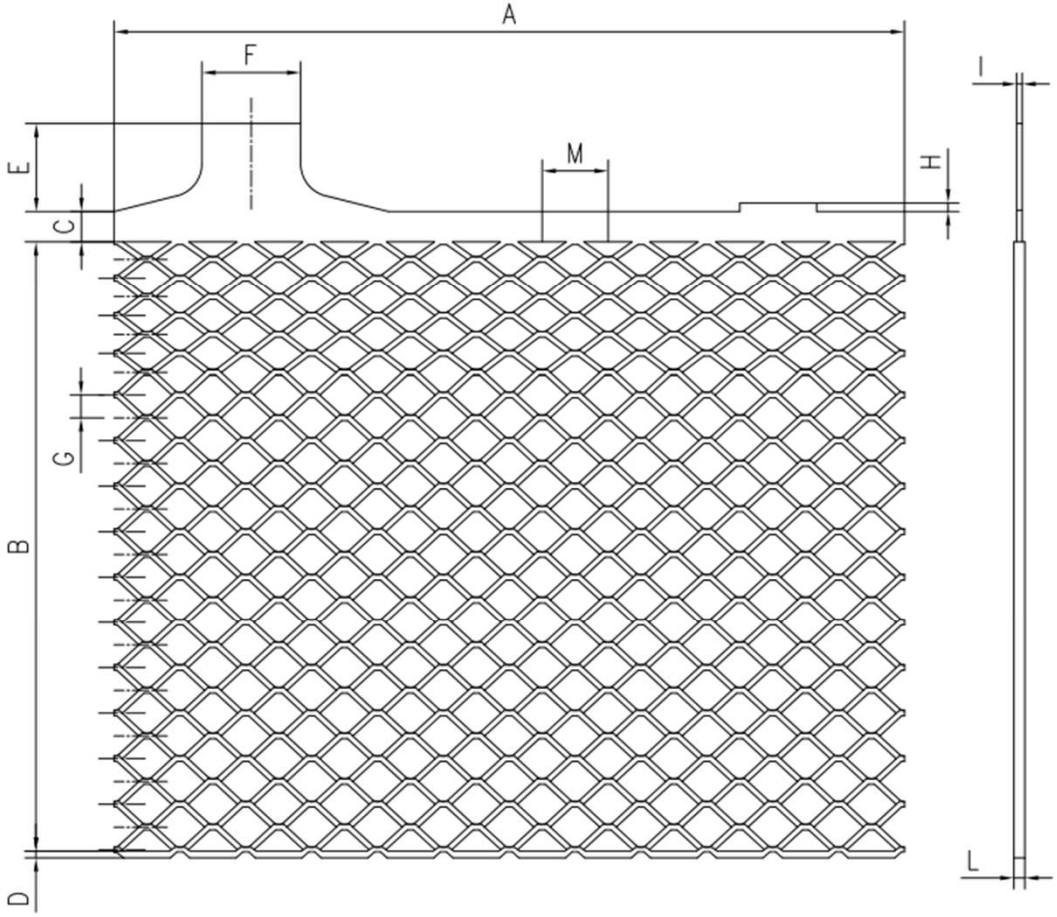
03 Rotary Expander & Expander Line





The figure above shows the smaller grid and thick rib at top, the rest are bigger grid and thin rib. This structure can decrease the weight and won't influence its electrical conductivity

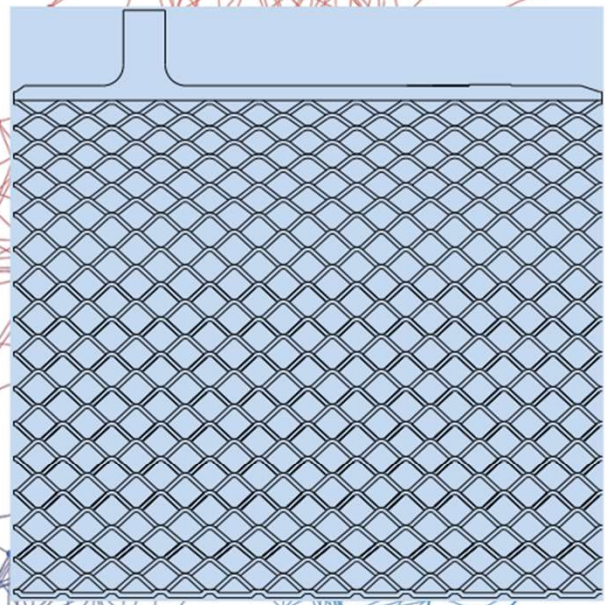
03 Rotary Expander & Expander Line



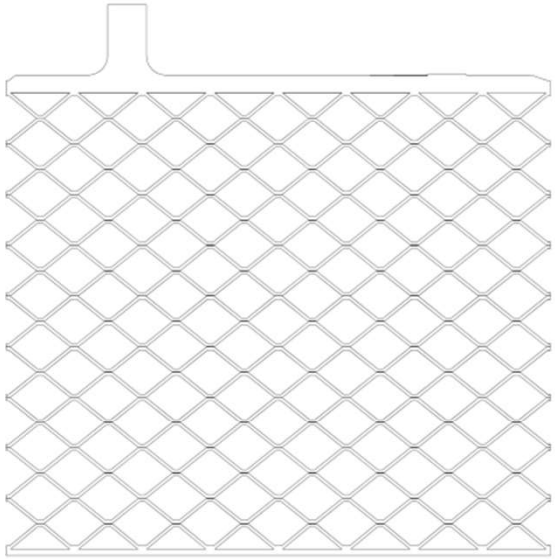
Grid Dimension				
A	108mm~144mm		G	max 5.5mm
B	max 134mm		H	0.25mm~0.5mm
C	min 5mm		I	0.75mm~1.2mm
D	min 1mm		L	1.0mm~1.5mm
E	min 15mm		M	12mm
F	12mm~20mm			

03 Rotary Expander & Expander Line

◆To produce positive & negative grid

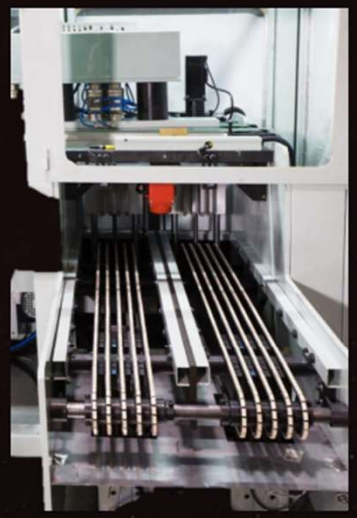


Positive grid

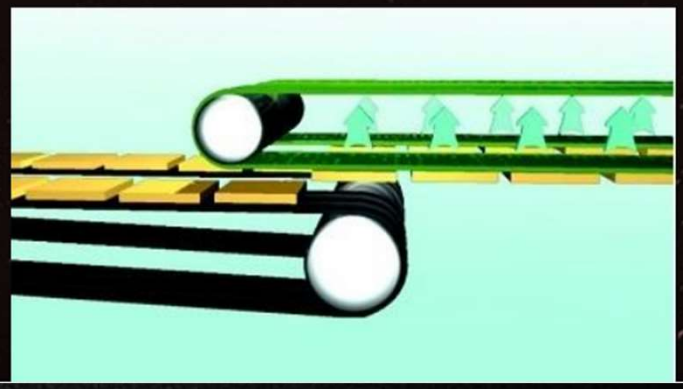


Negative grid

03 Rotary Expander & Expander Line



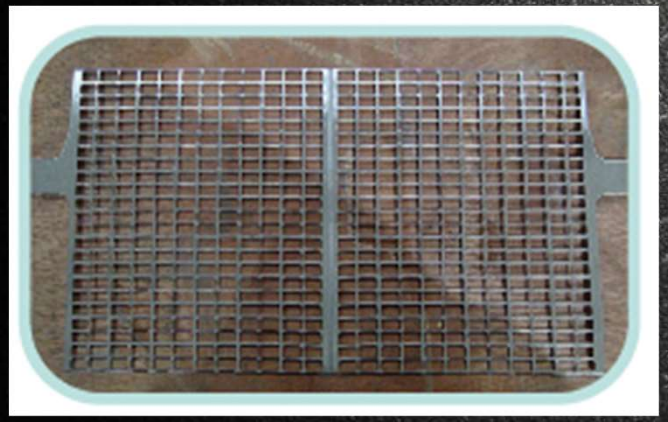
- Vacuum conveying
- Mechanical force free
- No damage to plate
- Easy to adjust

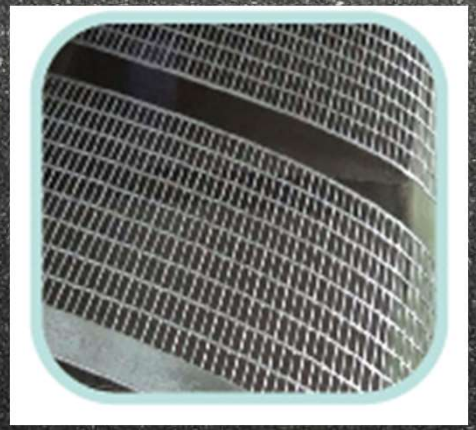


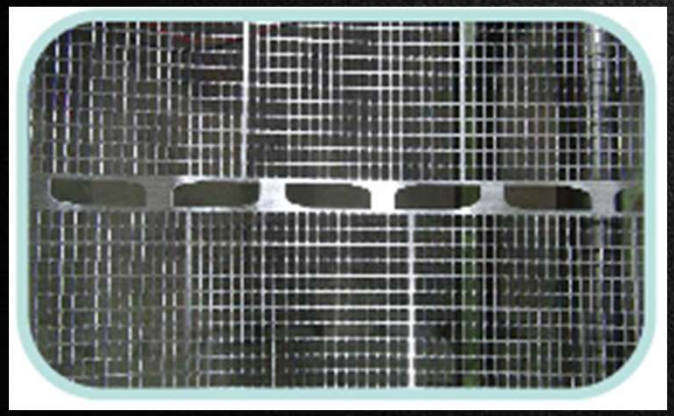
03 Con-Punching System Collaborated with Dongshun Jiangsu

03 Con-Punching System

03 Con-Punching System







Technical Data:

- Punching Width: 200--400mm
- Speed:5-25m/min
- Utility: 3 phase 5 wire,10-20Kw
- Dimension:6*2*2.5m
- Floor Area: 12㎡

03 PE Separator

Automotive Battery Used

Stop-Start Battery Used

Industrial Battery Used

Annual Production : 50Million m^2

59 employees

The world most advanced production Line and Environmental System

Advanced QA system in production

03 PE Separator----Collaborated with SPRT

03 Parameter Comparison with Daramic

Typical Value Comparison Between SPRT SLI & Daramic HP

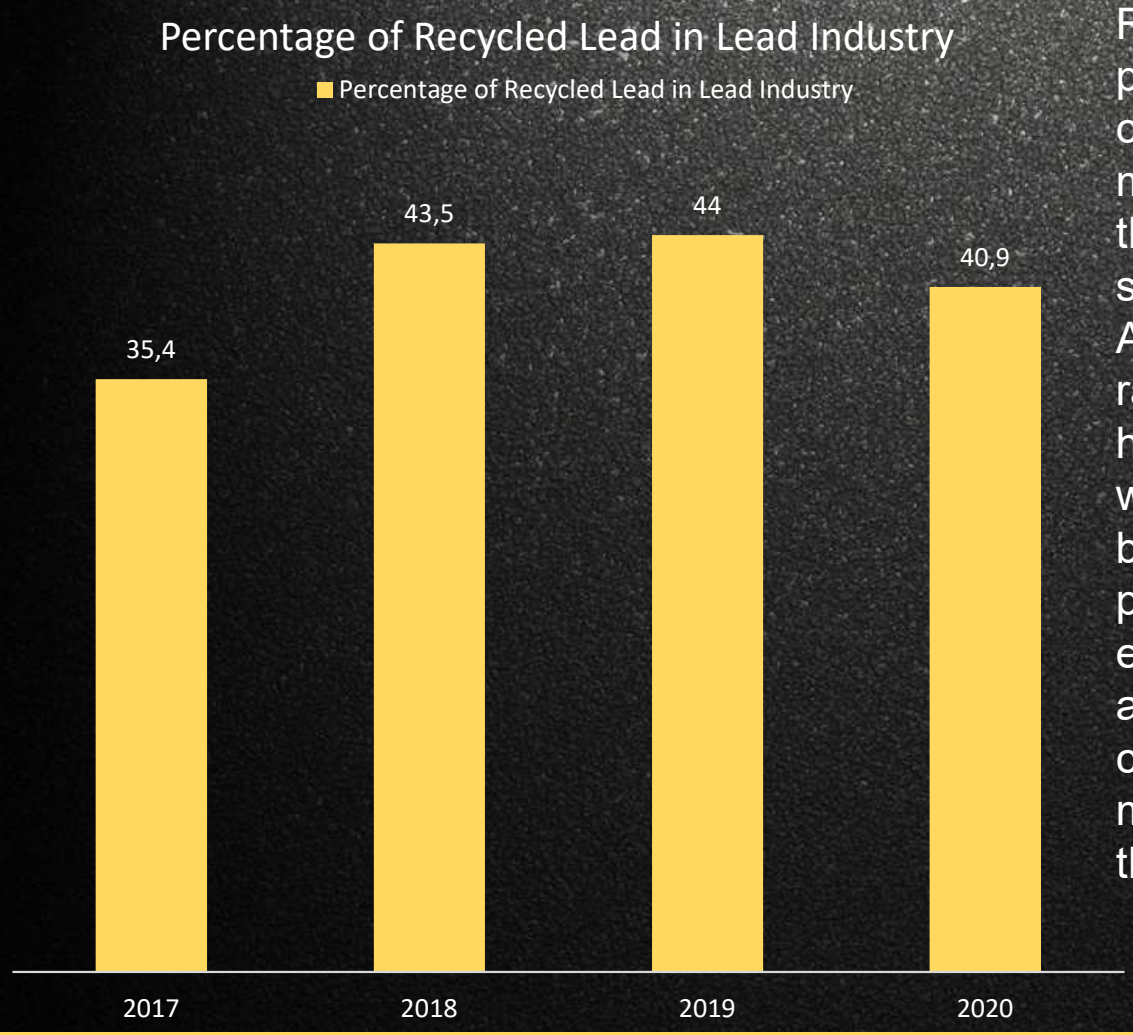
Sr. No.	Item	Unit	Reference Value of Industry Standard	Typical Value of SPRT	Typical Value of Daramic HP
1	model			**double-sided rib**	double-sided rib
2	dimension			**162*1.4*0.25**	162*1.4*0.25
3	basis thickness	mm	0.20+0.05/-0.02	**0.25-0.27**	0.24-0.25
4	total thickness	mm	1.0+/-0.1	**1.35-1.40**	1.35-1.40
5	puncture resistance	N	≥8	**10-13**	8-10
6	total oil content	%	15+/-3	**12-14**	13-15
7	base oil content	%	≥8	**12-14**	9-11
8	porosity	%	≥55	**63-64**	56-60
9	resistance	mΩ.cm²	≤100	**38-45**	60-65
10	wettability	S	≤60	**20-30**	5-15
11	transverse elongation	%	≥300	**400-500**	400-500
12	dimensional stability	%	≤1	**0.5-0.8**	0.5-0.8
13	water content	%	≤4	**2-3**	2-3
14	pickled weightlessness	%	≤4	**2-3**	3-5
15	iron content	ppm	≤100	**20-40**	20-40
16	chlorine content	ppm	≤300	**20-40**	20-40
17	revivification potassium perman-ganate	ml/g	≤10	**4-6**	5-8
18	oxidation resistance Perox 80				
	20hr CMD surplus ratio	%	≥40	**70-80**	50-60
	40hr CMD surplus ratio	%	≥30	**50-60**	25-30

PE Separator Production

Note:

were collected by SPRT Laboratories and tested in multiple comparisons.

03 Lead Recycle Projects



Recycling lead is conducive to environmental protection, and also alleviates the mining consumption of non-renewable mineral raw materials, which is conducive to protecting the ecological environment and ensuring the sustainable development of the lead industry. At the same time, compared with mineral raw materials, recycled lead raw materials have higher lead content; lead from lead waste does not need to undergo mining, beneficiation and other processes like primary lead, and the process is simple, energy consumption and pollutant emissions are low. Therefore, the production-consumption-reproduction cycle of lead metal is highly valued, and lead is currently the most recycled of all metals.

Automatic Battery Breaking and Sorting System

This line is for treatment of all materials of recycled wasted lead acid battery,including process as follows:

(1) Breaking of wasted battery

(2) Dividing lead paste from battery

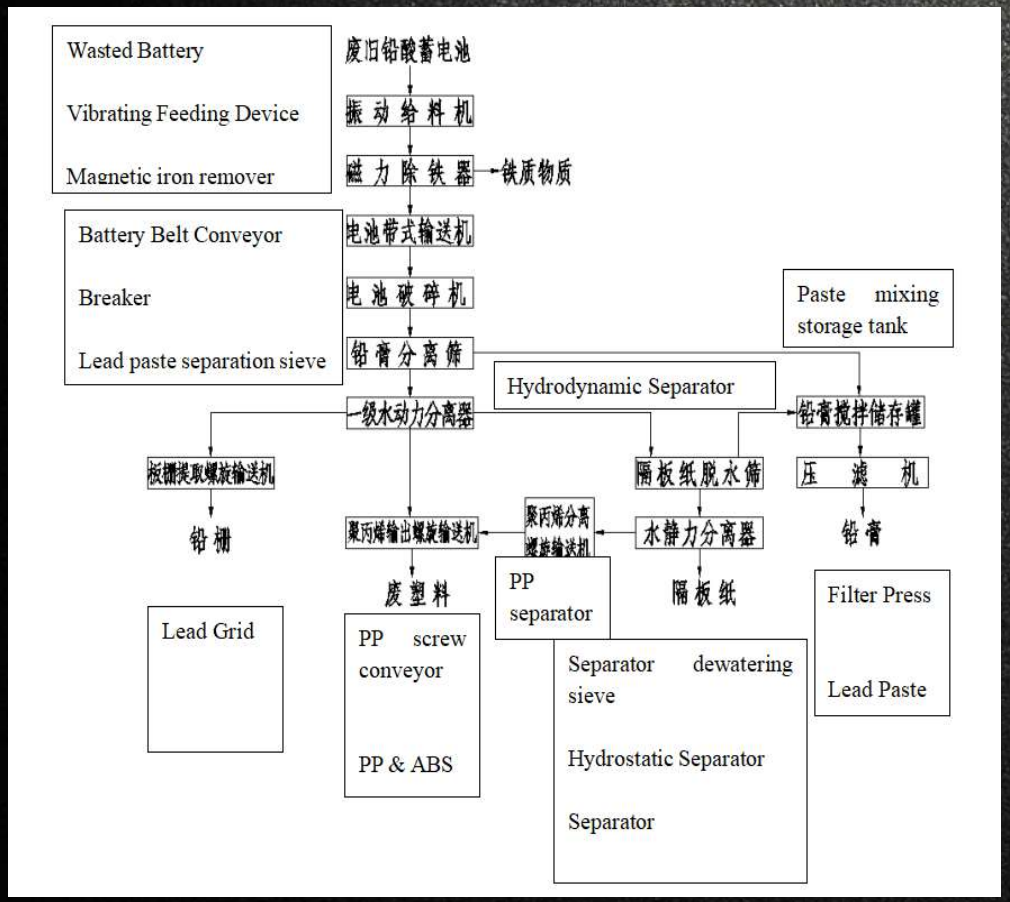
(3) Other material of battery

(4) Lead paste dehydration(filtration)

Design Capacity: 2t/h, 4~5t/h, 10t/h

03 Lead Recycle Projects

Process Description and Technical Parameters of 10T/H System



Sr. No	Item	Unit	Value
1	Wasted Battery Treatment Capacity	t/h	10
2	Operators	person	3~5
3	Total Power	kw	750
4	Lead Paste Metal Content	%	>60
5	Lead Paste Water Content	%	<11
6	Lead Recycle Rate	%	⩾98
7	PP Recycle Rate	%	⩾99
8	PP Lead Content	%	<0.1
9	Total Lead Recycle Rate	%	⩾98
10	Power Consumption	kwh/t	<30
11	Current Efficiency	%	>96
12	Water Consumption	m^3/t	0.05~0.1
13	Water Recycle Rate	%	⩾96
14	Acid Recycle Rate	%	99
15	Max Battery Dimension :	mm	⩽800
16	Compressed Air Consumption	m^3/t	15

Lead Acid Battery Breaking & Sorting System

Breaking Process

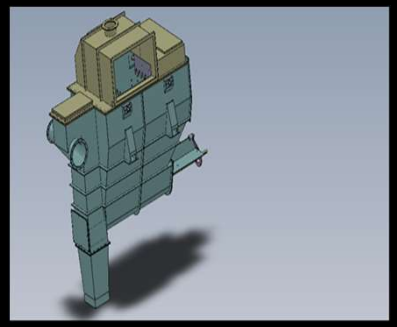
The waste lead-acid battery is grabbed and placed by the grab bucket to the battery vibrating feeder, the vibrating feeder is evenly unloading, and the waste lead-acid battery is sent to the battery breaker through the belt conveyor for physical breaking. There is a magnetic iron remover above the battery belt conveyor, which is used to remove iron substances mixed in waste lead batteries and protect the breaker from being damaged by iron substances. The broke waste lead-acid battery mainly enters the lead paste separation sieve with components such as sticky pulp, grids, waste plastics, and separator.

Main breaker is equipped with soundproof room to avoid noise

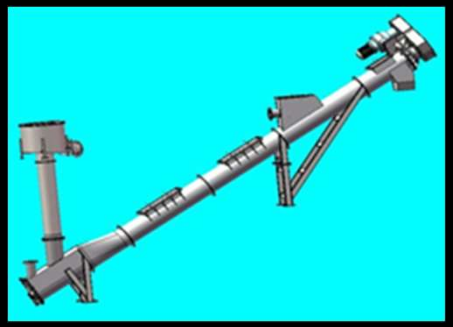
Lead Acid Battery Breaking & Sorting System

Sorting Process

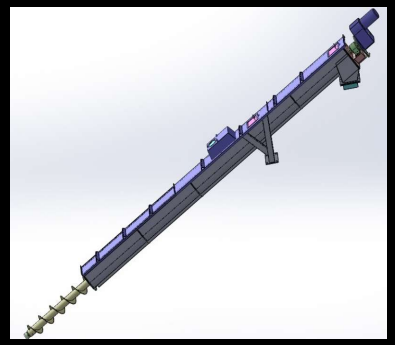
Whole system adapts multiple stages of high-pressure water separator，the paste is washed by high-pressure water to the paste sewage mixing storage tank. Through the filter press to become paste, The polypropylene, heavy plastic and lead grids separated by vibration cleaning are sent to the hydraulic separator by the vibrating screen. According to the different specific gravity of the materials and the characteristics of different buoyancy in water, the three materials are respectively separated from the three outlets of the hydraulic separator. They are sent out separately. In order to ensure thorough cleaning and separation of various materials, the lead grid and heavy plastics have been cleaned and separated for the second time.



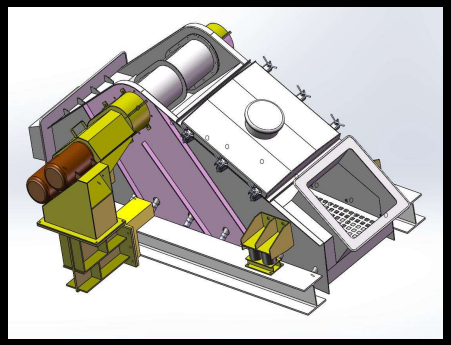
Hydraulic Separator



Lead Plate Screw Conveyor



PP Screw Conveyor



Vibration Sieve

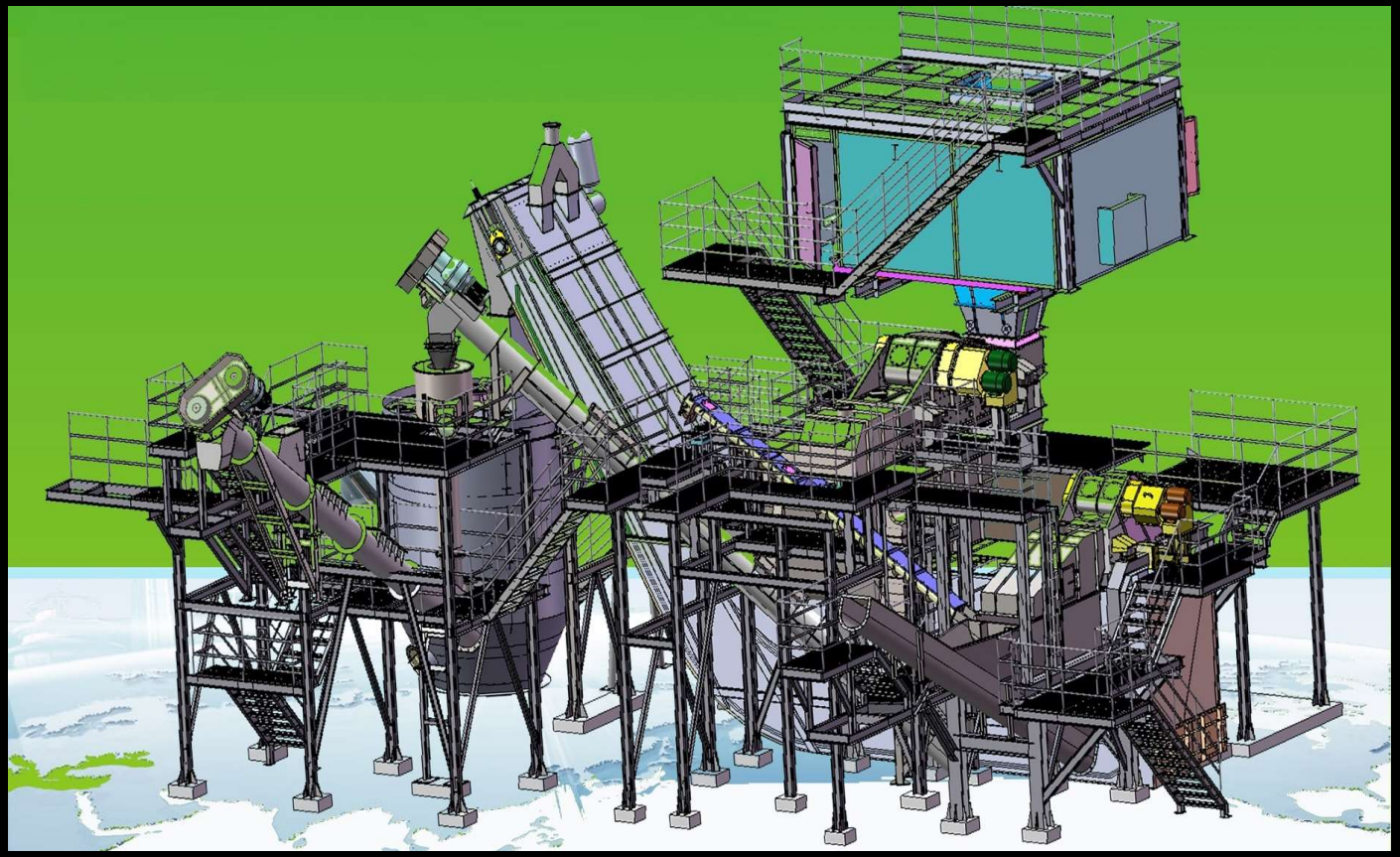
Lead Acid Battery Breaking & Sorting System

Option: Lead Paste Desulfurization System

Use carbonate to convert lead sulfate into lead carbonate can greatly save the energy consumption of the furnace, and has good energy-saving benefits. The desulfurization reaction is as follows:

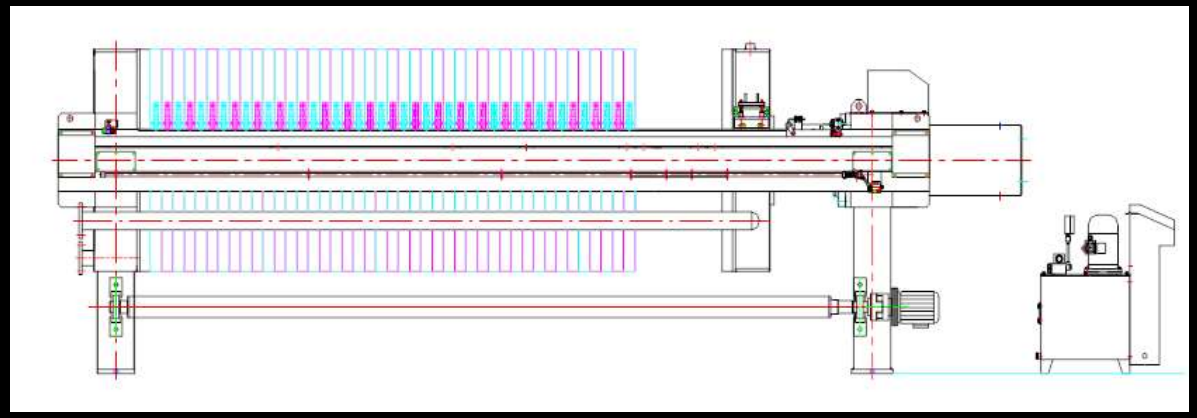
$PbSO_4+Na_2CO_3 \rightarrow PbCO_3+Na_2SO_4$

$H_2SO_4+Na_2CO_3 \rightarrow H_2O+CO_2+Na_2SO_4$



Lead Acid Battery Breaking & Sorting System

Filter Press



Filter Surface:300㎡
Power:10KW
Max filter operating Pressure:0.8Mpa
Max pressing operating pressure:1.2Mpa

Low Temperature Rotary Furnace Smelting

1、Automatic material preparation system

Lead paste, plate and terminal,iron powder,soda powder, carbons are stored in different silos, Operator can control material content of each shift.

2、Automatic material mixing&feeding system

Automatic material mixing, automatic feeding, all datas will be recorded in control center.

3、Rotary Furnace Smelting

For Paste:6 hour/shift, including feeding, smelting, lead casting, furnace slag output.

For plate and lead terminal:Feeding

Rotary Furnace Capacity: 10T,15T,20T,30T/shift

Average Cycle Time:6~7hours/shift

Lead Refining

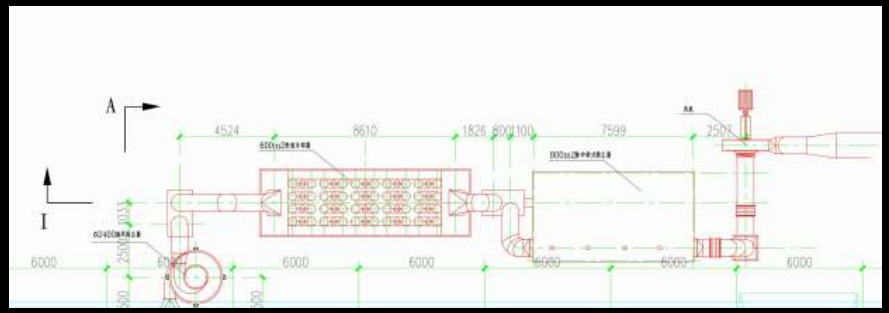
The crude lead is heated to about 400° C, and the lead is melted. Due to the different specific gravity, lead layer and slag layer are formed. After removing the slag layer, heat to 550~600℃, add sodium nitrate and sodium hydroxide for refining. The principle is to use the active oxygen released by sodium nitrate at high temperature to make The Sb and Sn in the lead are oxidized, and the impurity oxides react with sodium hydroxide to generate sodium salt that is insoluble in the lead solution. After forming scum, it is removed. The antimony removal time is 3-4 hours. Cooling the lead solution after removing antimony and zinc to 320-350° C, adding sulfur to remove copper, the reaction time is 2-3 hours, and removing the copper slag floating on the lead solution; the lead content can reach 99.992%. Then cooling down liquid lead and make lead ignot through lead ignot casting device. After that, producing alloy lead according to the proportion.

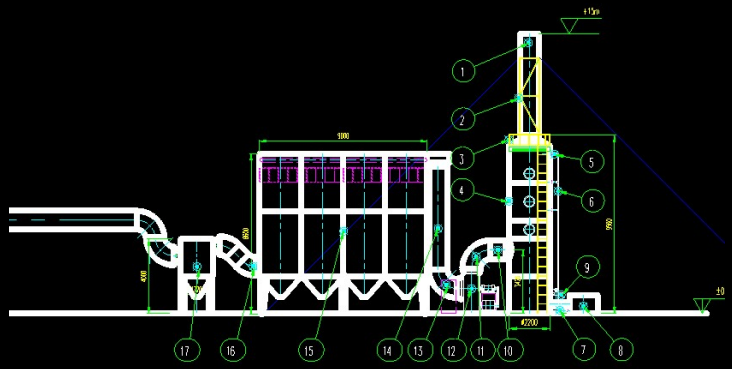
	Capacity MT/Day	Reference Diameter (mm)
Lead Refining Kettle	20	1500
	30	1940
	40	2400
	60	2600
	100	3000
	120	3300

Ingot Casting System
5T/H
8T/H
10T/H
15T/H
20T/H

Environment Protection-Lead Fume Collection

Inculding Ceramic Cylone Dust Collector, Fume Cooling Device, Bag Dust Collector and Wet Dust Collector





Environment Protection-Water Treatment

The raw water enters the two reaction tanks and the HP reaction tank , add NA and HP (adsorbent) and fully reacted Add PAM (flocculant) and enter the aeration tank to mix thoroughly. The sediment and sludge settle down and pass through the filter press to form a mud for treatment. The upper water is discharged through the sand filter

03 Lithium Projects

山东沃顿电源技术有限公司介绍

Will's Walton Power

Introduction of Walton Power Technology Ltd.

- 注册时间2014年7月10日 Registration Date：July 10th,2014
- 占地面积：62500 平方米(㎡) Floor space:62500㎡
- 主要产品：高倍率锂离子电池、储能电池、动力电池（方形软包）及系统,锂电池生产线总包
- Mian Product: High rate Li-ion battery, storage battery, power battery(square soft package type)&system, lithium battery production line turn-key project.
- 生产能力：日产聚合物软包锂离子电池10万只以上
- Production capacity: polymer soft package-type Li-ion battery 100,000pcs/day.
- 主要应用：军用装备、电动玩具（航模）、电动工具、AGV等动力电池和电网储能领域
- Typical Applications: military equipment, electronic toys(model airplane), electric tool, AGV power battery and grid power storage area,

Shandong Walton Power Technology Co.

山东沃顿电源技术有限公司介绍

Introduction of Walton Power Technology Ltd.

Walton Power

- 主要客户：中船重工、大疆无人机、总装备部、国核、华能、国电
- Main customer: CSIC, DJI(DaJiang Innovation), GAD(General Armament Department), China Nuclear Industry Corporation, China Huaneng Group, State Grid Corporation of China.
- 产品检测及认证：国家SGS-ISO9001:2008质量体系认证、UL、CE、RoHS、UN38.3、QCT-743及TS16949等检测认证。
- Product testing and certification: national SGS-ISO9001:2008 certificate of quality system, UL, RoHS, UN38.3, QCT-743 and TS16949 certification.
- 产学研合作:浙江大学、中国科技大学、中科院材料所、中科院自动化所、华南理工大学
- Industry-university- research cooperation: Zhejiang University, USTC(University of Science and Technology of China), Material Institute of Chinese Academy of Sciences, Automation Institute of Chinese Academy of Sciences, SCUT(South China University of Technology)

Shandong Walton Power Technology Co.

山东沃顿电源技术有限公司介绍

Introduction of Walton Power Technology Ltd.

Will's Walton Power

管理团队–专业的技术及管理团队 Management Team

郭永千 博士 沃顿电源总经理（国家千人计划 海外特聘专家）

早年留学日本、美国，并先后在松下能源社、上市电源企业从事技术、管理工作，有着20年以上的电池研究和开发经验

Yongqian Guo, Doctor, GM of Walton Power, National Thousand Talents Program, Overseas specialist.

Doctor Guo studied in Japan and USA in his early years, and engaged in technical work and management work in Panasonic. He has more than 20 years of battery research and development experience.

山东沃顿电源技术有限公司
Shandong Walton Power Technology Co.,Ltd

Walton Power

管理团队-专业的技术及管理团队
Professional technical and management team.

张红兵博士 沃顿电源副总经理 总工程师

Hongbing Zhang, Doctor, Deputy GM & Chief Engineer of Walton Power

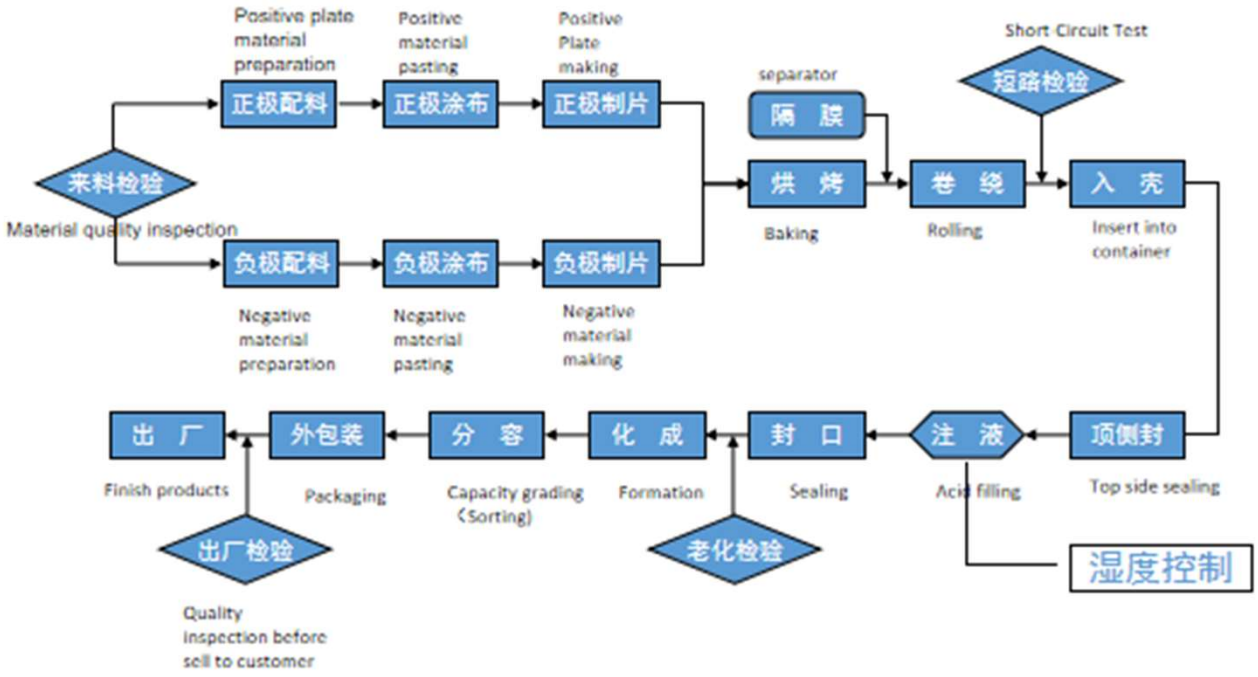
ISE（国际电化学学会）会员 科技部项目评审专家

Member of ISE(International Society of Electrochemistry);

Project Evaluation Expert at Ministry of Science and Technology of China

03 Lithium Projects

锂电池生产流程Lithium battery production process.



Shandong Walton Power Technology Co.

Will's Walton Power

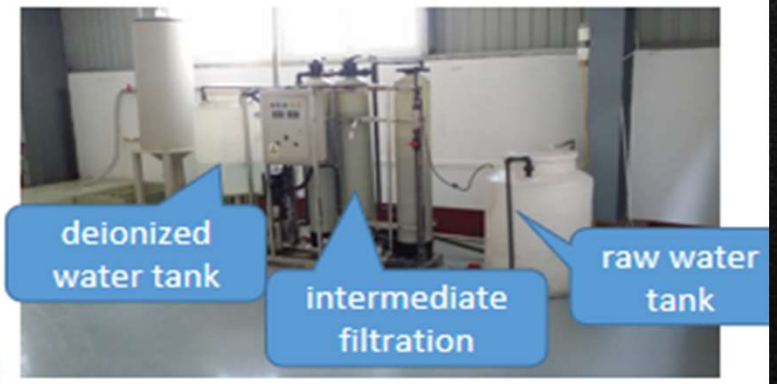
锂电池生产设备
Lithium battery production equipment

1. Deionized water machine：
Deionized water machine for negative material mixing

Process：raw water→pressure pump→multi-media filter→carbonfilter→softener→ultrafilter→primary RO machine→middle water tank→middle water pump→EDI system→microfilter→deionized wter tank

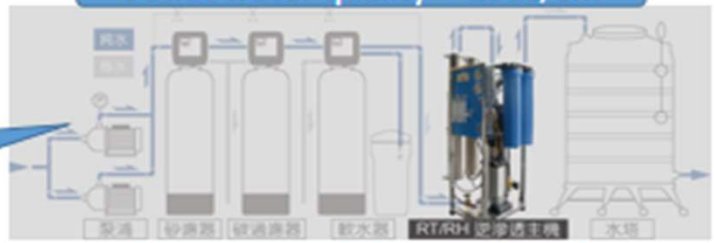
Fetures：

- 1、integration design, less space demand, simple operation & installation.
- 2、Simple maintenance, low running cost.
- 3、Both full-auto & manual function, full-aoto running & turn on/off.
- 4、Water testing instrument at each outlet point.
- 5、Safety device: indicator for no water protection, high & low pressure protection.



outlet water quality＜10us/cm

Water-making diagram



water yield：250L/h

Shando logy Co.

Will's Walton Power

锂电池生产设备
Lithium battery production equipment.

Material mixing equipment: dual planet mixer

Vacuum high viscosity mixer

Usage: Mix all kinds of battery materials into slurry.

- Positive material 正极： 100L
- Negative material负极： 60L
- Productivity: 160KG ternary/LFP material per day.
- 每天可配制160KG三元及磷酸铁锂材料

锂电池生产设备

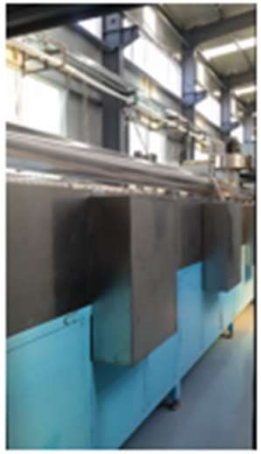
Lithium battery production equipment.

Slurry pasting equipment-multifunctional pasting machine

2. Electrode pasting machine：

- Usage: the stirred slurry was uniformly coated on a metal foil. The coating thickness of the slurry is accurate to less than 3 microns.

Using Japan mitutoyo dial indicator, Japan THK screw rod, Japan rodless cylinder, Germany precision reducer. High presition, running stable.



Roller length: pasting roller 600mm,

Speed：1.5 - 10m/min

（max pasting speed 8m.min)

锂电池生产设备

Lithium battery production equipment.

- 3. Pressing Roller :
- Usage: The coated pole piece is further compacted to increase the energy density of the battery.
- 涂布后的极片进一步压实，提高电池的能量密度.

The standard production process
标准的生产流程

Main technical parameters：
- **Roller size：Φ500×550mm；**
- **Roller cylindricity：≤0.003mm；**
- **Pressure：300T；**
- **Roller hardness：≥HRC65~68；**
- **Depth of roller quenched layer：≥18mm**

锂电池生产设备

Lithium battery production equipment.

Will's Walton Power

4. Power battery full-auto die cutting machine：

Overall dimensions：
2000*1300*1700mm

Speed: 1-1.6s/piece
Fault rate ≤5%
Burr： ≤30μm
Weight：total weight 900Kg
Ratio of total weight to bearing area ≤500kg/M2
Different jigs can be used on different product.

锂电池生产设备
Lithium battery production equipment.

5. Full-auto lamination machine：

Description：

positive/negative pole piece loading, separator unwinding & tension shaping, lination, cell coiling, auto rubberizing.

Dimensions：

Equipment dimension：1800*1950*1700mm

Speed：1.1~2s/piece(＋15s（set-up time）

Weight：1200Kg

Power：2KW/220VAC

Air：0.5～0.7MPa

Vacuum source：－0.6MPa

锂电池生产设备

Lithium battery production equipment.

- 6. Electrolyte injection system

Rotary dehumidifier

Electrolyte injection system

Glooving Box

Vacuum capping machine

锂电池生产设备

Lithium battery production equipment.

Will's Walton Power

7. Vacuum owen

Main parameters:

1. Temperature uniformity: under dry gas: ±1.5 °C Vacuum: ±2.5 °C
2. Vacuum degree: vacuuming 5pa or less within 5 minutes of no load
3. Air tightness: 24-hour air leak rate <100pa
4. Heating time: 35 minutes no-load temperature rise 100 ° C

Shandong Walton Power Technology Co.

Will's Walton Power

锂电池生产设备

Lithium battery production equipment.

8. Coding machine

Coding lines	1-4 lines
Coding height	2-12mm
Operation interface	8.9 inch HMI
Coding direaction	360° omnibearing coding
Temprature range	0-45℃（JP-K67 ink）
Weight	25KG
Electrical requirement	AC100-120/220-240V±10% 50/60HZ single phase 150VA

Main Packing Equipment

Will's Walton Power

Battery module automatic testing cabinet:

- Usage: detection of battery module capacity

Current start response time: <100ms
Stability: ±（0.1%FS+0.1%RD）
Measurement accuracy: ±（0.1%F.S.R+0.1%RD）
Resolution: 1mV（sample≥100ms one time）

Main Packing Equipment

Will's Walton Power

Internal resistance voltage tester

Welding machine

Insulation resistance tester

6 series protection board tester

Battery aging machine

Terminal machine

Main customer

Walton Power

通讯模块
Commun
ication
module

军用夜视仪
Military
night
vision.

AGV

Existing Application field

Emerging Application field

无人机
UAV(unmanned
aerial vehicle)

医疗仪器
Medical
instrume
nts

新能源汽车New
energy automobile

储能领域
Energy
storage
areas

03 Lithium Projects

Main customer

Walton Power

Military night vision battery.	UAV Power battery	Telecom Power System
Portable ultrasonic meter battery.	AGV Battery	Energy storage battery

Shandong Walton Power Technology Co.

04 XINXU Global Target

In Africa

Based on Tunisia to expand African Market

In Asia

Set up Xinxu-Pakistan Industrial Zone, expand to all Asia

South America

Xinxu-Mexico Office to serve South American Market

East Europe

Xinxu-Bulgaria Service Center to cover East European market

04 Company Culture

Enterprise Vision

To be a respected enterprise in the industry.
To create more value for the staff and society

Staff Declaration

Do every job well,
Work hard today
for a better
tomorrow

Enterprise Spirit

Never Give up
Dare to Pursue
Unite to Create

Management Idea

Honesty
Innovation
High Efficiency
Harmony
Responsibility

Thanks for watching !

THE END