

# MECHANICAL PULVERIZER

## 机械粉碎机



研发  
R&D



生产  
Production



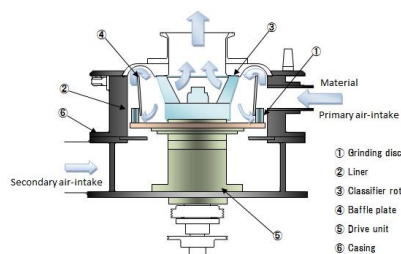
销售  
Sales



售后  
After sales



## 设备原理 Equipment principle



通过高速旋转刀盘产生的气流以及与内衬之间的撞击粉碎原料。  
通过内藏分级轮的转速调整粉碎得到希望粒度的产品。  
粉碎过程中的循环空气可抑制产生热量，  
特别适合于食品等对温度有要求的原料的粉碎。

The raw materials are crushed by the air flow generated by the high-speed rotating cutter head and the impact with the liner.  
The product with desired particle size can be obtained by adjusting the rotation speed of the internal grading wheel.  
The circulating air in the grinding process can suppress the generation of heat,  
It is especially suitable for grinding raw materials with temperature requirements such as food.

设备名：机械粉碎机

用途：原材料超细粉碎用

型号：XRV-200 XRV-300 XRV-400 XRV-600 XRV-900

磨盘径：φ200mm φ300mm φ400mm φ600mm φ900mm

Equipment name：Mechanical Pulverizer

Use：For superfine grinding of raw materials

Model：XRV-200 XRV-300 XRV-400 XRV-600 XRV-900

Grinding disc diameter：φ200mm φ300mm φ400mm φ600mm φ900mm



XRV-200



XRV-400



XRV-300



XRV-900



XRV-600

### 【应用领域】

化学品：电池材料 粉体涂料 硅石 颜料 树脂 化纤纤维等

食品：淀粉 色素 砂糖 食盐 脱脂大豆 米粉 蕎麦等

医药品：全粉末材料

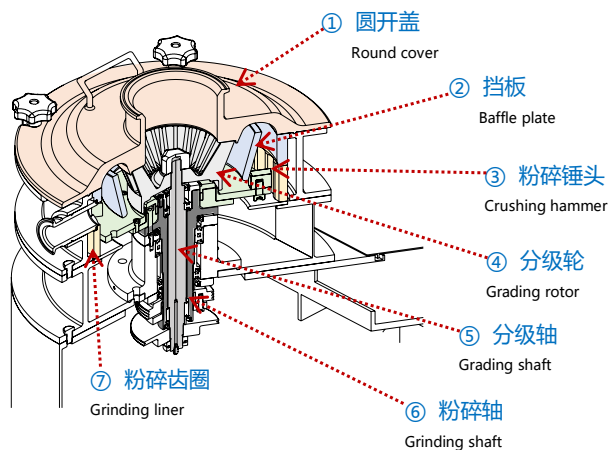
### 【Application】

Chemicals：Battery material Powder coating Silica Pigment Resin Chemical fiber etc.

Food：Starch Food coloring Sugar Salt Defatted soybean Rice flour Buckwheat etc.

Pharmaceutical products：All powder materials

## 设备结构 Equipment structure

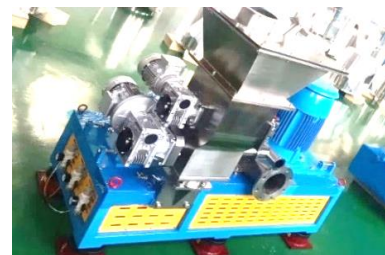
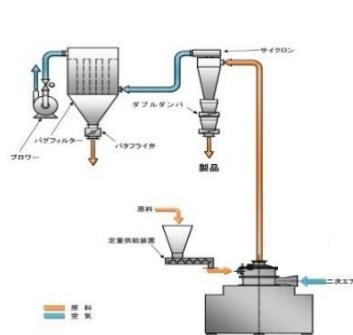


- ❖ 利用高效分级功能防止过粉碎
- ❖ 粉碎粒径可控, 产品分布均匀集中
- ❖ 粉碎物料过程不接触金属异物且不产生任何金属异物
- ❖ 专业的养料装置、防架桥装置、螺杆输送+气力输送

- ❖ use high-efficiency classification function to prevent over crushing
- ❖ the particle size of powder is controllable, and the product distribution is uniform
- ❖ the material crushing process does not contact with metal foreign matters and does not produce any metal foreign matters
- ❖ professional feeding device, anti bridging device, screw conveying + pneumatic conveying

通过引风机负压, 气流从下部经过粉碎部产生回旋流, 再穿过分级轮转子。可通过粉碎盘的转速调整处理量和粒度。

Through the negative pressure of the induced draft fan, the airflow flows from the lower part through the pulverizing part to generate a swirling flow, And then passes through the rotor of the grading wheel. The rotation speed of the comminutable disc can adjust the processing capacity and particle size.



线速度是120m/s 国内制造厂的2倍!  
成为代替气流粉碎机的机器!

Circumferential velocity of 120m/sec.,  
double that of domestic manufacturers!  
Equipment that can replace airflow pulverizers!

型号 Model	XRV-200	XRV-300	XRV-400	XRV-600	XRV-900
粉碎电机/转速 Motor/Disk speed	3.7kW 13,000r/min	11kW 8,500r/min	22kW 7,000r/min	45kW 3,600r/min	110kW 2,200r/min
分级电机/转速 Motor/Wheel speed	0.75kW 10,000r/min	2.2kW 7,300r/min	5.5kW 6,000r/min	7.5kW 3,000r/min	22kW 2,200r/min
需要风量 Required airflow	7m <sup>3</sup> /min	15m <sup>3</sup> /min	30m <sup>3</sup> /min	60m <sup>3</sup> /min	100m <sup>3</sup> /min
机器尺寸 Machine size	W1,000×L500×H800mm	W1,350×L600×H1,000mm	W1,800×L750×H1,300mm	W2,300×L900×H1,300mm	W2530×L1400×H2700mm
设备重量 Equipment weight	600kg	700kg	1,000kg	2,000kg	6,000kg

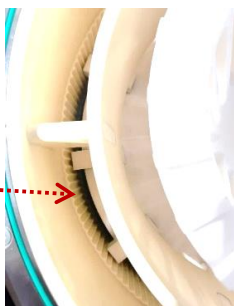


## Equipment features

*Grinding of single crystal high nickel raw materials!*

Evolution of liner

Corresponding single crystal  
raw material liner

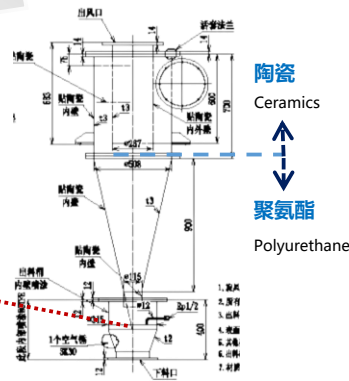


**其他公司不具备的优点和特长**

### 旋风分离器的进化



Material out of barrel    Excellent separation effect!



陶瓷片内衬 Ceramic chip lining



耐磨聚氨酯内衬

Wear resistant polyurethane lining

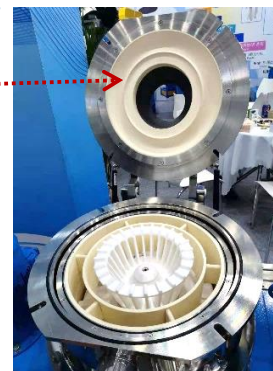
至弧形上盖会产生加速度

迅速落回粉碎盘,达到尖锐的粒度分布曲线。

Arc shaped upper cover lining is adopted to prevent large particles from escaping impact.

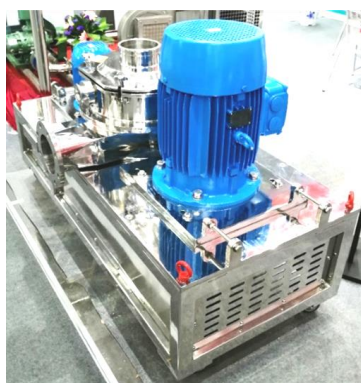
Acceleration will be generated to the arc-shaped upper cover.

Quickly fall back to the grinding disc to achieve a sharp particle size distribution curve.



## Advantage of equipment

### Technological innovation of lithium hydroxide comminution



**主机为全不锈钢!**  
Equipment body is all stainless steel

产能: 500~700kg/hr

Name : XRV-300-SUS Mechanical Pulverizer

Advantages : Low energy consumption, High energy yield, Stable operation time and reliable particle size distribution

Capacity : 500 ~ 700kg/hr

### ❖ 强腐蚀性物料的加工

❖ 医药·食品·精化工

- ❖ Processing of highly corrosive materials

- ❖ Medicine, Food, Fine chemicals

### ◆ 防腐蚀&清洁！

- ❖ Anti corrosion & Sanitary!

❖整个气体循环系统可控制低露点

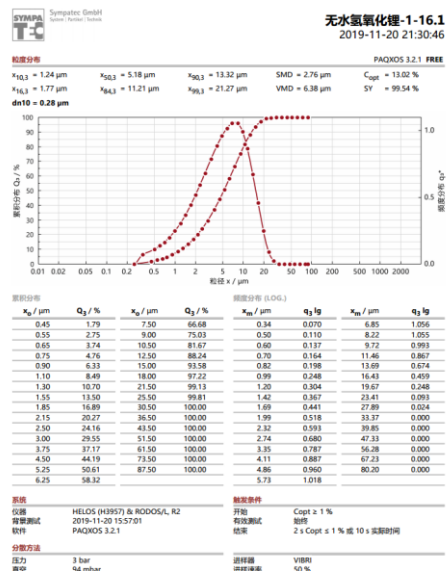
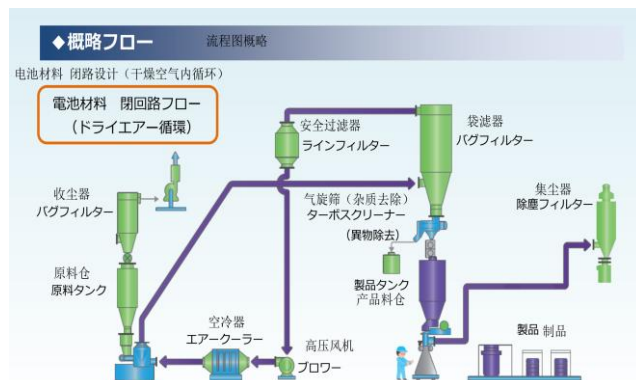
❖ -20℃到-60℃之间严格控制水分

❖可做闭路循环和开路系统

- ❖ The whole gas circulation system can control the low dew point.

- ❖ Strictly control the moisture between -20°C and -60°C.

- ❖ It can be used as closed and open circuit system.



## 异物混入防止对策 Measures to prevent contamination

### ① 料斗内原料接粉部 特氟龙涂层

① Raw material powder receiving part in hopper  
teflon coating.



### ③ 原料投入部管道内衬氧化铝

③ Pipeline of raw material input department  
lined with alumina.



### ④ 主机内原料接粉部 内衬氧化铝

④ Raw material powder receiving  
section in the main machine  
lined with alumina.



### ⑤ 粉碎后管道内衬氧化铝

⑤ After crushing, the pipeline is lined with alumina.



### ⑥ 管道观察部位可用耐高温 强化玻璃制造

⑥ The observation part of the pipeline  
can be high-temperature resistant  
reinforced glass manufacturing.



### ② 陶瓷磨盘

② Ceramic grinding rotor



## 课题研究 Topics

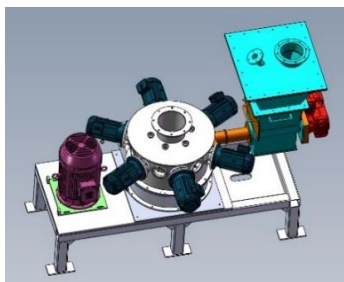
### 要求 磷酸铁锂的比重很低，所以需要加强分级能力

Problem Lithium iron phosphate is light in specific gravity,  
so we need to enhance the classification capacity.

### XR-600多头分级轮 XR-600 Multi head grading wheel

新开发! New Development!

没有过粉碎  
细小的颗粒被立即  
分类并送走  
No overgrinding,  
fines are immediately  
separated and sent out.



XR-600多头分级轮 Multi head grading wheel

## Topics

### XR-600C 气势恢宏的首次亮相!

XR-600C An imposing debut!



### 世界上最大等级的陶瓷粉碎盘!!

World's largest class ceramic grinding rotor!



### 要求 防止粉碎刀盘磨损的措施

Problem Countermeasures against wear of grinding rotors.

### 对于磨损的根本解决方案!

The fundamental solution to wear!

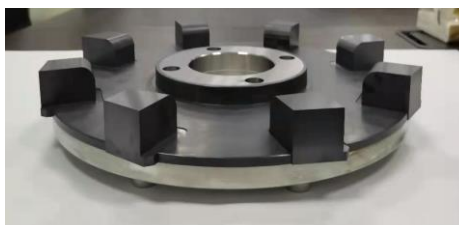
### 中国首例 氮化硅粉碎盘 China's first silicon nitride grinding rotor.

新开发! New Development!

氧化铝和氧化锆是

目前粉碎盘的主流 · ·

The current mainstream is alumina  
and zirconia grinding rotors...



### 中国首例氮化硅粉碎盘研究开发成功! 我们在韩国国内公司有丰富的业绩!

China's first silicon nitride rotor, We succeeded in our R&D!  
We have rich achievements in Korean domestic companies!

- ❖ 出类拔萃的密度!
- ❖ 出类拔萃的硬度!
- ❖ Outstanding density!
- ❖ Outstanding hardness!





【陶瓷材质】

Ceramic material



氧化铝  $\text{Al}_2\text{O}_3$

Alumina



氧化锆  $ZrO_2$

Zirconia



碳化硅 SiC

Silicon carbide

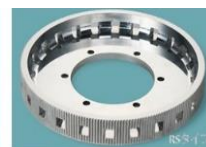
氮化硅  $\text{Si}_3\text{N}_4$ 

Silicon nitride



## 不锈钢SUS304 SUS316系列

Stainless steel SUS304 SUS316 series



## 试验案例

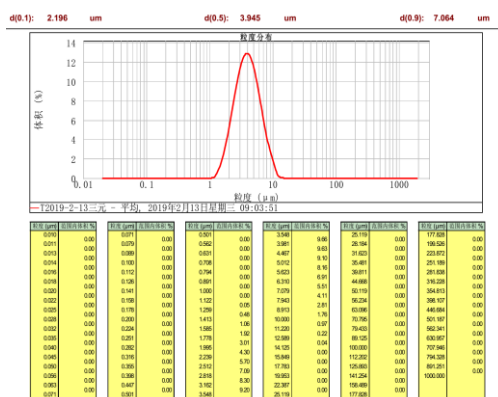
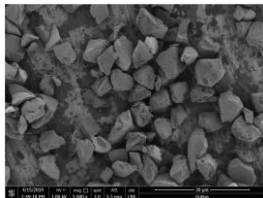
## Experimental cases

## 正极高镍材料粉碎测试

Crushing test of cathode high

粉碎后粒径：D50 3.945μm

Particle size after crushing : D50 3.945  $\mu\text{m}$

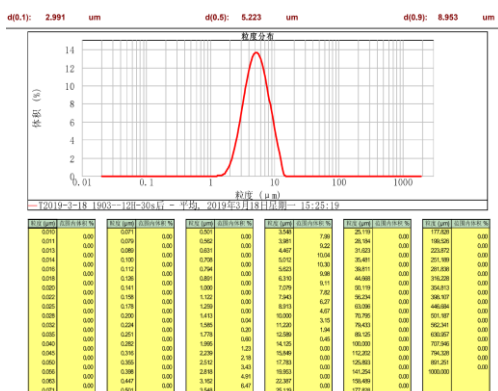
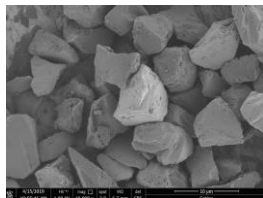


## 正极钴酸锂粉碎测试

### Crushing test of cathode lithium

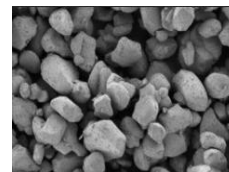
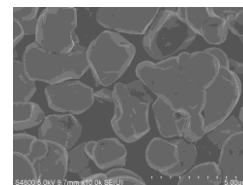
粉碎后粒径：D50 5.223μm

Particle size after crushing : D50 5.223  $\mu\text{m}$



## 正极材料粉碎SEM报告

SEM report on crushing of cathode ...





**高新技术企业**  
High-tech enterprise



**高新技术产品认定**  
High-tech product identification



**中国科学院苏州纳米研究所产学研基地**  
Suzhou Institute of Nanotechnology, Chinese Academy of Sciences, Designation of Joint Research Centers



**中南大学合作设立博士生工作站**  
Collaboration with Central South University to establish a doctoral internship



**ISO9001认证**  
ISO9001 certification



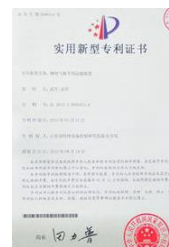
**欧洲CE认证**  
CE certification in Europe



**韩国KCs认证**  
KCs certification in Korea



**防爆设备安装认证**  
Explosion-proof equipment installation certification



**专利证书**  
Patent certificate

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锂电设备 粉体机器

