



# ROLL CRUSHER

## 对辊破碎机



研发

R&D



生产

Production



销售

Sales



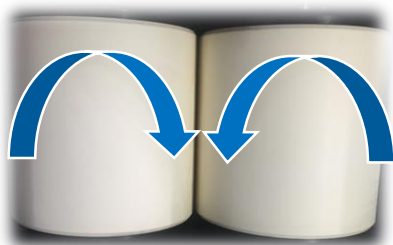
售后

After sales



## 设备原理

## Equipment principle



从2个陶瓷辊上部投入原料压缩粉碎  
利用高强度且耐磨的氧化铝对辊  
相对旋转产生的高挤压力达到破碎材料的目的

Feeds raw material from the top of the 2 ceramic rollers to compress and crush.

Using the high strength and wear-resistant alumina rolls.

The purpose of crushing the material is achieved by the high squeezing pressure generated by the relative rotation.

设备名：对辊破碎机

用途：原材料破碎用

型号：XRC-150 XRC-235 XRC-350

层数：1S=单层 2S=双层 3S=三层

Equipment name : Roll Crusher

Use : For crushing raw materials

Model : XRC-150 XRC-235 XRC-350

Number of layers : 1S=single layer 2S=double layers 3S=three layers

### 【应用领域】

电池原料 磁性材料 电子材料 研磨剂 陶瓷 齿科材料

颜料 液晶玻璃 LED 半导体 医药品 化妆品 食品

### 【Application】

Battery raw material Magnetic material Electronic material

Abrasive Ceramic Oncology material Pigment Liquid crystal glass

LED Semiconductor Pharmaceutical Cosmetics Food



XRC-150-1S



XRC-235-2S



XRC-350-3S

## 设备结构

## Equipment structure



氧化铝陶瓷辊

Alumina ceramic rolls



瑞士进口皮带张紧装置  
杜绝皮带打滑现象

Swiss imported belt tensioning device.

Eliminate belt slippage phenomenon.



海外进口自动调芯轴承  
降低故障率

Overseas imported self-aligning bearings .

Reduce the failure rate.



采用日本进口的张紧弹簧  
保证了两辊间隙和设备使用寿命

Adopt Japanese imported tensioning spring

to ensure the gap between the two rollers

and the service life of the equipment.



型号 Model	XRC-150	XRC-235	XRC-350
辊子转速 Roll speed	217 r/min	180 r/min	180 r/min
电动机 Electric motor	4P-0.75kW	4P-3kW	4P-4kW
辊子尺寸 Roll size	ø150×L150mm	ø235×L300mm	ø350×L300mm
机器尺寸 Machine size	W790×L710×H1,130mm	W1,100×L960×H1,400mm	W1,250×L2,000×H2,100mm
处理能力 Processing capacity	30 ~ 100kg	200 ~ 300kg	350 ~ 1,000kg
设备重量 Equipment weight	400kg	900kg	1,800kg

## 设备特点

## Equipment features



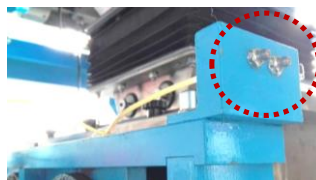
简单的加油保养方式  
用导油管把轴承加油  
嘴连接到机器外部  
方便后续维护保养加油操作

Simple oiling maintenance method.

Use the oil guide tube to connect the bearing oiling.

Nozzle to the outside of the machine.

Convenient for subsequent maintenance and refueling operations.



兮然科技有专利空气密封方式

专利号：ZL201621235314.0

XiRan technology has a patented air sealing method.

Patent No. : ZL201621235314.0

❖ 无污染，原料接触区无金属物

❖ 粉碎后粒径最小达到0.5mm

❖ 微粉产生少·低噪音·耐使用·粉碎效率高

❖ 能耗低·机器维护简单

❖ Contamination-free with no metal in the material contact area.

❖ Minimum particle size of 0.5mm after crushing.

❖ Low micronization, low noise, resistant to use, and high crushing efficiency.

❖ Low energy consumption, Simple machine maintenance.



原料闭塞防止装置

Material occlusion prevention device

不容易进入机器的原料

使用气缸捣料杆强行捣入。

Raw materials that do not easily enter the machine can be crushed by this air cylinder.



日本进口刻度尺及指针

对辊间距一目了然

Japan imported scale and pointer.

The distance between rolls can be seen at a glance.

## 设备优势

## Advantage of equipment

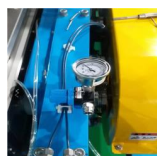


❖ 对应NCA等流动性好的材料

❖ 轴封部分用机械密封组件+气密封做到完全密封

❖ Corresponding to NCA and other materials with good fluidity.

❖ Shaft seal part is completely sealed with mechanical seal assembly + air seal.

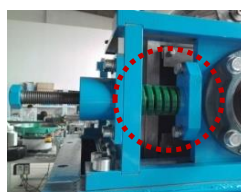


❖ 采用日本进口的张紧弹簧

❖ 数年后也确保颗粒粒度的一定性

❖ Adopting the tensioning spring imported from Japan.

❖ Ensure the particle size certainty even after several years.



❖ 各种传感器可有效防止生产过程中的长时间停机

❖ 上部投料斗内堵料时会发出警报

❖ 发生皮带断裂时会发出警报

❖ 辊轮旋转停止时也可探测

❖ 检查窗口打开时电机自动停止的安全对应

❖ Prevents long production stops due to various sensors.

❖ Alerts when the upper hopper is clogged with material.

❖ Alerts when a belt breakage occurs.

❖ Detection even when the roller rotation stop.

❖ Safety correspondence for automatic motor stop when the inspection window is opened.

其他公司不具备的优点和特长

Advantages and specialties that other companies do not have.

❖ 严格控制粉碎时的水分

❖ 可添加氮气或干燥压缩空气 用于高镍材料的水分控制

❖ Strictly control the moisture when crushing.

❖ Nitrogen or dry compressed air can be added.

❖ Supports high nickel material moisture control.



❖ 设计耐高温可达到160°C

❖ 特氟龙漏斗耐热230°C

❖ 氧化铝陶瓷辊耐热160°C

❖ 阻燃布蛇腹耐热400°C

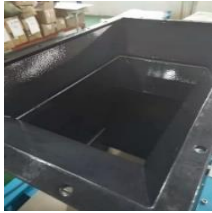
❖ Designed to withstand high temperatures up to 160°C

❖ Teflon hopper heat resistant to 230°C

❖ Aluminium oxide ceramic roller heat resistant 160°C

❖ Flame retardant cloth serpentine heat resistant 400°C





① 料斗和腔体内原料接粉部  
特氟龙涂层

① Materials inside the hopper and  
inside machine Teflon coating



② 氧化铝陶瓷辊

② Alumina ceramic rolls



③ 蛇腹特性柔软、耐磨，耐高温400度  
上下层不产生共鸣共振现象  
减少了由于震动引起的螺丝松动

③ Softduct is wear-resistant, high temperature resistant 400 degrees.  
The upper and lower layers do not produce resonance and resonance phenomenon.  
Reduces screw loosening due to vibration.



④ 高精度物料导向板

④ High precision  
material guide plate



⑤ 特殊订制定做不含锌·铜·  
铁成份的喷塑材料

⑤ Specially made to order without zinc, copper or iron  
sprayed paint materials.

⑥ 固定螺栓为SUS304

螺帽为SUS316不锈钢

减速齿轮电动机的黄油填充孔也变更为不锈钢

⑥ Fixed bolt is SUS304.  
The nut is SUS316 stainless steel.  
Grease of reduction gear motor  
filling hole is also changed to stainless steel.

## 课题研究 Topics

要求 无污染的前驱体破碎

Problem Pollution-free crushing of precursors

### 前驱体破碎陶瓷对辊机

Precursor crushing ceramic Roll crusher

新开发! New Development!



上部 陶瓷棒对辊

Upper ceramic rod to roll



陶瓷棒和碳化钨溶射 特别适合高粘性原料!

Ceramic rod and tungsten carbide dissolution.

Effective for highly viscous materials !



下部 陶瓷鬼齿对辊

Lower ceramic ghost tooth roll

新开发用于前驱体破碎的鬼齿辊

Newly developed for precursors

crushing ghost tooth roll.



## 辊子要素 Roll elements

辊子可以做Φ150 Φ235 Φ350 厚度≥55mm Al<sub>2</sub>O<sub>3</sub>纯度≥99% 德国原料  
 体积密度：3.88g/cm<sup>3</sup> 洛氏硬度：87HRA 抗折强度：357MPa  
 其他材料如氧化锆·碳化硅·SUS·Q235等

Roll can be made Φ150 Φ235 Φ350 Thickness ≥55mm Al<sub>2</sub>O<sub>3</sub> purity ≥99% Germany raw material  
 Bulk density : 3.88g/cm<sup>3</sup> Rockwell hardness : 87HRA Flexural strength : 357MPa  
 Other materials such as zirconium oxide, silicon carbide, SUS, Q235, etc.



钉子辊  
Pin roll



平辊  
Smooth roll



凸凹辊  
Convex concave roll



八槽辊  
Eight groove roll



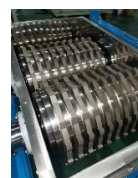
齿辊  
Tooth roll



齿轮辊  
Gear roll



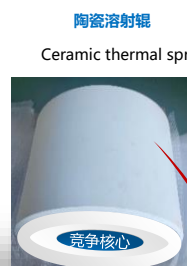
四槽辊  
Four groove roll



负极材料  
金属鬼齿辊  
Metal ghost tooth roll

## 全球首例在辊式破碎机上使用！

The world's first adoption for Roll crushers!



陶瓷溶射辊  
Ceramic thermal spray roll



碳化硅辊  
Silicon Carbide roll

洛氏硬度 90HRA  
Rockwell hardness 90HRA



碳化钨溶射辊  
Tungsten thermal spray roll

表面耐热碳化钨溶射辊  
Heat-resistant tungsten carbide

全钨钢WC钉子 针对强硬物料  
All tungsten steel WC nails

耐强的铸铁轴芯  
Strong cast iron core

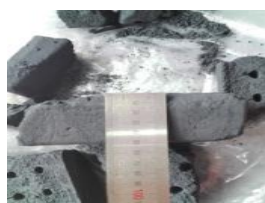
## 试验案例 Experimental cases

### 三元单晶

Ternary monocrystal



粉碎前 约200×160×t55mm  
Before crushing



粉碎后  
After crushing

### 钴酸锂

Lithium Cobaltate



粉碎前 约170×150×t50mm  
Before crushing



粉碎后  
After crushing

### NCA

NCA



粉碎前 (约140 × 110 × t35mm)  
Before crushing



粉碎后  
After crushing



陶瓷辊破碎机试验机  
Ceramic roll crusher test machine





**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



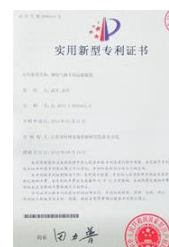
**欧洲CE认证**  
CE certification in Europe



**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

