

# ROLLER COMPACTOR

辊式压实机



研发  
R&D



生产  
Production



销售  
Sales



售后  
After sales



## 设备原理 Equipment principle

粉末原料按原样→成型→粗粉碎→颗粒  
是一台连续加工的造粒机

The powder raw material is → formed as it is → coarsely crushed → granules  
It is a continuous processing granulator

设备名：辊式压实机

用途：原材料的压缩·成型·粗破·造粒

Equipment name : Roller compactor

Use : Compression, forming, crushing, granulation of raw materials

### 【应用领域】

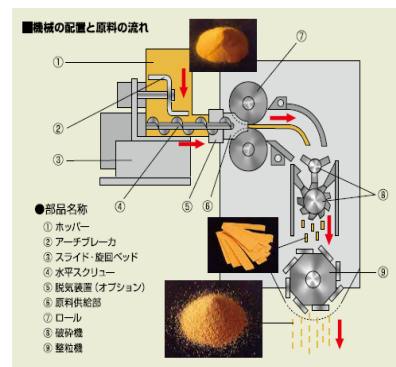
电池正负极材料 (Carbon+Pitch等) 氧化物

电子材料 合成树脂 医药品 食品等

### 【Application】

Battery cathode and anode materials (Carbon+Pitch, etc.)

Oxide Electronic materials Synthetic resins Pharmaceuticals Food etc.



## 设备使用目的 Purpose of equipment use

### 电池行业

烧制前处理 窑中的稳定性和均匀性 正负极等

熔融预处理 熔融时的溶解度分散性改进 添加剂等

### Battery industry

Pre-firing treatment Stability and uniformity in kilns Cathode and anode etc.

Melt pretreatment Improvement of solubility dispersibility during melting Additives etc.



### 化学行业

防尘 环境卫生改进 吸尘设备,防止粉尘爆炸等

提高流动性 工艺内输送 称重等

熔融预处理 熔融时的溶解度分散性改进 树脂,添加剂等

混炼前处理 混合前密度,粒度调整 树脂,添加剂,调色剂,粉末涂料等

防止散射 散发后的散射和偏差 肥料,土壤改良剂,混凝土等

挤出机预处理 树脂成型原料的需求量多

提高混合稳定性 防止工艺中的分离,储存稳定性 树脂添加剂等

运输时防止偏析 防止混合原料的偏差,沉降 工业原料等

减容化 袋装,称重,易操作性 二氧化硅等

体积密度增加 储存,运输容器的容量减少,流动性改进

### Chemical industry

Dust prevention environmental hygiene improvement Dust suction equipment, Dust explosion prevention etc.

Improved fluidity In-process conveying, Weighing etc.

Melt pretreatment Improvement of solubility dispersibility during melting Resins, Additives etc.

Pre-mixing treatment Density before mixing, particle size adjustment Resin, Additives, Toners, Powder coatings etc.

Prevention of scattering Scattering and deviation after spreading fertilizers Soil conditioners, Concrete etc.

Extruder pretreatment There is a large demand for resin molding raw materials

Improved mixing stability Prevents separation in the process, storage stability Resin additives etc.

Prevent segregation during transportation Prevent deviation of mixed raw materials, sedimentation Industrial raw materials etc.

Volume reduction Bags, Weighing, ease of handling Silica etc.

Increased bulk density Storage, Reduced capacity of transport containers, Improved flowability

### 造粒原理

用螺旋给料器向辊筒供给原料加料漏斗内的原料。

由于通过受到压力的辊筒之间的变成薄片。

由于做薄片整粒,能得到希望的尺寸的颗粒。

A screw feeder is used to supply the raw material in the raw material filling hopper to the rollers.

Due to the passing of the pressure between the rollers become thin sheets.

Since you make flakes whole, you can get the desired size of granules.

### 食品行业

提高溶解度 汤粉,绿茶的润湿性和分散性改进

质地改善 香料,香辛料,干果等

物理特性改性 食品,营养补充食品,小麦淀粉 $\alpha$ 化,保健食品等

运输时防止偏析 防止混合原料的偏差,沉降 食品,宠物食品等

防吸湿 食品,宠物食品的防吸湿

### Food industry

Improve solubility Improved wettability and dispersibility of soup powder, green tea

Texture improvement Fragrance, Spices, Dried fruits etc.

Physical characteristics modified Food, Nutritional supplement food, Wheat starch pregelatinization, Health food etc.

Prevent segregation during transport Prevent deviation of mixed raw materials, sedimentation Food, Pet food etc.

Anti-moisture absorption Anti-moisture absorption of food, pet food



### 医药行业

压片前处理 压片机颗粒流动性改进 颗粒大小分布调整

防吸湿 中药的防吸湿

### Pharmaceutical industry

Tablet pre-treatment Tablet press particle flow improvement,

Particle size distribution adjustment

Anti-hygroscopic Anti-hygroscopic Chinese medicine

### 按行业划分的机器使用目的

Purpose of machine use by industry

## 设备结构 Equipment structure

### 从低压缩到高压压缩 成型·粗破·造粒 为一体的干法造粒机

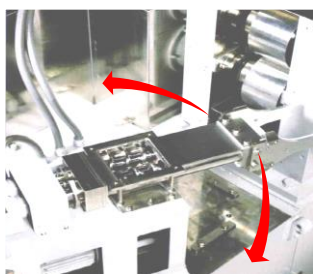
From low compression to high compression.

Molding, coarse crushing, granulation, It is an integrated dry granulator.



### 拆卸更换简单构造清洁简易

Easy to disassemble and replace, clean and easy



### 螺旋给料机可轻易

### 旋转安装和拆卸

The screw feeder can be made easily  
rotary installation and removal



**追求高洗净性!**  
Pursuit of high washability!

### 出色的保养性!

因为辊筒只一边固定,简单分解能拔出。

能容易短时间分解冲洗!



Excellent maintainability!

Because the roller is fixed on one side only, it can be easily disassembled and pulled out.

It can be easily disassembled and rinsed in a short time!

### 为完全清扫GMP对应

GMP correspondence for complete cleaning



### 破碎机安装在设备外

### 易于装卸及清洗

The crusher is installed outside the equipment  
easy to load, unload and clean



## 设备类型 Equipment type

### 设备名：辊式压实机 FT系列

### 特点：上下辊筒 水平螺旋给料 辊轴双方受负荷方式

Equipment name : Roller compactor FT series

Features : Upper and lower rollers, horizontal screw feeding,  
load mode on both sides of the roller shaft

处理能力是氧化镁的实例 Processing power is an example of magnesium oxide



FT300



FT230

型号	FT90	FT105	FT160	FT160	FT230	FT230	FT230	FT265	FT265	FT300	FT300	FT400	FT400	FT400
辊径 mm	90	105	162	162	230	230	230	265	265	302	302	402	402	402
辊宽度 mm	30	40	60	125	80	170	250	90	190	210	330	290	330	430
辊压力 ton	4.5	7	18	18	40	40	40	40	60	80	80	140	140	140
处理能力 kg/h	15	25	100	200	220	470	700	330	700	1,000	1,600	2,500	3,000	3,800
重量 kg	450	700	1,500	1,950	2,200	2,900	3,000	3,300	4,000	5,500	6,000	11,000	12,000	15,000

### 设备名：辊式压实机 FP系列

### 特点：上下辊筒 水平螺旋给料 辊轴一边受负荷方式

Equipment name : Roller compactor FP series

Features : Upper and lower rollers, horizontal screw feeding, and the load mode on one side of the roller shaft

型号	FP90×30	FP125×40	FP160×60	FP230×80
辊径 mm	90	126	162	230
辊宽度 mm	30	40	60	80
辊压力 ton	3.3	5.6	9.6	15.2
处理能力 kg/h	-	60	120	260
重量 kg	500	950	1,500	2,600

处理能力是由乳糖的实例

Processing power is made up of instances of lactose



FP125×40



## 设备特点 Equipment features

### 干法造粒的特征

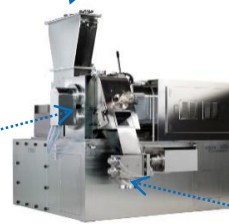
- ① 不耐水分及耐热敏感的原料也可形成颗粒 生药颗粒, 汉方药颗粒, 抗菌素等
- ② 熔点低的原料也可形成颗粒 树脂粉末, 墨粉粉末等
- ③ 能降低口味和香味的损失 食品, 香料, 调料等
- ④ 通过压缩减少容重和比重的增加 硅石, 碳酸钡等
- ⑤ 适合比重较轻的原料 二氧化硅等
- ⑥ 适合造粒性差的原料 石膏等

#### Characteristics of dry granulation

- ① Raw materials that are not resistant to moisture and sensitive to heat can also form particles.  
Crude medicine granules, Chinese medicine granules, Antibiotics, etc.
- ② Raw materials with low melting point can also form particles.  
Resin powder, Toner powder, etc.
- ③ It can reduce the loss of taste and aroma.  
Food, Fragrance, spices, etc.
- ④ Reduce the increase of bulk density and specific gravity by compression.  
Silica, Barium carbonate, etc.
- ⑤ Suitable for raw materials with light specific gravity. Silicon, etc.
- ⑥ Suitable for raw materials with poor granulation. Plaster, etc.



原料粉末  
Material powder



薄片  
Flakes



由于不使用液体粘合剂  
原料和灰液液体, 是容易引起  
热变质的原料造粒的理想选择。  
易于对粗粉和细粉进行再处理。  
Since no liquid adhesive is used Raw materials  
and anerable liquids are easily caused.  
Ideal for pelletizing thermally deteriorated  
raw materials. Easy reprocessing of coarse  
and fine powders.

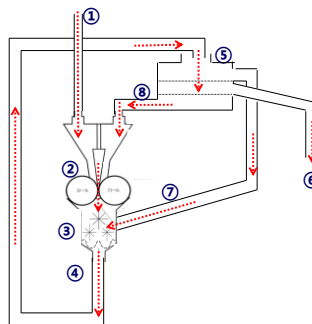


### 粗粉和细粉进行再处理!

- ① 原材料供应
- ② 用辊子进行板材化
- ③ 粗粉碎
- ④ 整粒
- ⑤ 振动筛分级
- ⑥ 颗粒产品
- ⑦ 将粗粉送回造粒机
- ⑧ 将细粉返回原料

#### Coarse and fine powders for reprocessing!

- ① Supply of raw materials
- ② Plate materialization with rollers
- ③ Coarse crushing
- ④ Whole grains
- ⑤ Vibrating screen classification
- ⑥ Granular products
- ⑦ Send the semolina back to the granulator
- ⑧ Return the fine powder to the raw material



由于不使用液体粘合剂  
因此分级后的粗粉微粉  
易于重新处理!

Since no liquid adhesive is used  
Hence the grading of semolina  
micropowder easy to reprocess!



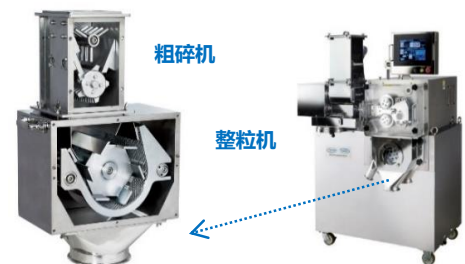
## 设备优势 Advantage of equipment

### 造粒技术

压密破碎造粒技术由压密和粉碎造粒  
两种技术的合成组成。  
最终通过SUS网获得所需的颗粒。  
该设备通过2~3道工序依次粉碎,  
可防止过粉碎提高收率。  
同时可通过网眼的大小控制颗粒的大小。

#### Granulation technology

Compacting crushing granulation technology  
consists of compacting and crushing granulation,  
Synthetic composition of both technologies.  
Finally, the required particles are obtained through the SUS net.  
The equipment is crushed sequentially through 2~3 stages of process,  
It can prevent over-shredding and improve the yield.  
At the same time, the size of the particles can be controlled by the size of the mesh.



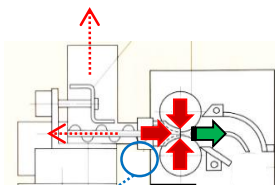
### 脱气技术

#### 自然脱气

在料斗内螺杆给料时通过原料自重脱气  
在用水平轴螺杆定量供给原料时,压缩原料时脱气  
脱气促进喷嘴 (付费可选项)  
在脱气部分安装烧结金属喷嘴促进脱气  
强制脱气 (付费可选项)  
在脱气部设置真空泵促进脱气

#### Degassing technology

Natural degassing  
The screw in the hopper is degassed by the raw material by its own weight.  
When the raw material is supplied quantitatively with a horizontal shaft screw,  
the raw material is degassed when compressed.  
Degassing accelerator nozzle. (Optional for payment)  
A sintered metal nozzle is installed in the degassing part to promote degassing.  
Forced degassing. (Optional for payment)  
A vacuum pump is installed in the degassing section to promote degassing.



即使是含有大量空气的原料  
也能实现稳定的造粒!

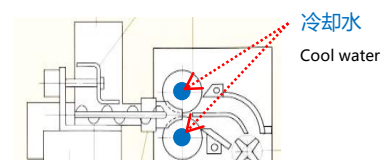
Even raw materials that contain a lot of air,  
Stable granulation can also be achieved.

### 控制发热技术

减轻压缩热摩擦热  
向辊筒中央部通冷却水  
对热敏感的原料,低熔点的原料  
也可稳定的形成颗粒!

#### Reduces the friction heat of compression heat.

Cool water is applied to the center of the roller.  
Heat-sensitive raw materials, raw materials with low melting point.  
Stable particle formation is also possible!





## 设备优势 Advantage of equipment

### 辊筒核心技术 Roller core technology

#### 如何做到均一的压密成形？

原料的定量供给非常重要。

螺旋给料供料时，或多或少会有供给量的变化，这部分物料输送至辊压部位时，原料的密度也不相同。

此时，油压辊轴通过判断自动调整上下压力，使压出的产品密度、厚度均匀。

与静态辊压设备不同，设备自动判断来料密度控制油压辊轴压力来生产出密度和厚度均匀分布的功能是该设备的核心技术。

How to achieve uniform compaction forming?

The quantitative supply of raw materials is very important.

When the screw feeds and feeds, there will be more or less changes in the amount of supply,

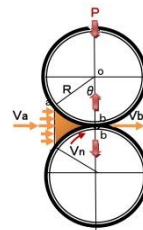
and this part of the material is transported to the rolling part, The density of raw materials is also different.

At this time, the hydraulic roller shaft automatically adjusts the up and downward pressure through judgment to make the density and thickness of the extruded product uniform.

Different from static rolling equipment, the core technology of the equipment is to automatically judge the density of incoming materials and control the pressure of the hydraulic roller shaft to produce uniform distribution of density and thickness.

料斗·架桥破碎器·螺旋给料器  
辊筒·脱气·制热·全部为联动的  
设计是机器高额的原因。

The design of Hopper, Bridge breaker, Screw feeder, Rollers, Degassing, Heating control, and all linkage is the reason for the high price of the machine.



### 设备优势电池行业

Equipment advantage battery industry



窑中的稳定性和均匀性！  
Stability and uniformity in the kiln!



在日本电池材大公司为了  
在烧成前提高原料密度  
压辊然后放入匣钵中！

In Japan, a large battery material company in order before firing, Increase the density of the raw material and press the roller and put it in the bowl!



形成颗粒品的特征！

Characteristics that form granules!

粒直径大！  
流动性好！  
比重沉重！  
颗粒硬度大！  
Large grain diameter!  
Good liquidity!  
The specific gravity is heavy!  
High particle hardness!



客先	原料	目的
S金属	正極材	烧成前处理
T化学	正極材	烧成前处理
T工业	正極材	烧成前处理
M化学	負極材	嵩密度增加
K化学	負極材	烧成前处理
I产业	負極材	烧成前处理
N化学	電池材	流動性向上・压密性向上

## 辊子和螺杆轴要素 Roller and screw shaft element



菱目 + 平目辊

标准类型 有效咬入粉末  
具有优异的多功能性

Rhombus + flat eye roller  
Standard type  
Effective bite into powder  
Excellent versatility



菱目辊

标准类型  
制药和食品行业

Rhombus roller  
Standard type  
Pharmaceutical and food industries



横沟辊

可进行抛光修复  
用于耐磨材料

Cross groove roller  
Can be polished and repaired  
For wear-resistant materials



平滑辊

大附着力用于  
原材料造粒

Smoothing roller  
Large adhesion is used for  
Granulation of raw materials

#### 螺杆轴类型

①60mm间距 体积密度小的原材料 (0.2g/mL以下)

②45mm间距 标准规格

③30mm间距 体积密度大的原材料 (0.7g/mL以上)

Screw shaft type

①60mm pitch Raw materials with low bulk density (0.2g/mL or less)

②45mm pitch Standard specifications

③30mm pitch Raw materials with high bulk density (0.7g/mL or more)



#### 选择适合粉末的辊子螺杆

Choose the roller screw that fits the powder



用于 FT160×60N的45mm螺距螺杆

45mm pitch screw for FT160×60N



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



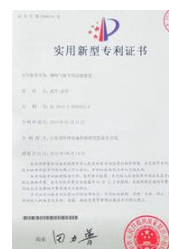
欧洲CE认证  
CE certification in Europe



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

**XR** 兮然科技(江苏)股份有限公司  
XiRan XiRan Technology (Jiangsu) Co., Ltd.

**总公司 Headquarters**

地址：江苏省苏州市苏州工业园区春辉路1号  
电话：0512-6285-6578  
邮箱：xiran\_china@126.com  
网址：www.sz-xiran.com

**苏州第一工厂 Suzhou first factory**

地址：江苏省苏州市苏州工业园区春辉路1号  
电话：0512-6285-6578

**苏州第二工厂 Suzhou second factory**

地址：中国江苏省苏州市苏州工业园区双泾街5号  
电话：0512-6726-2228

**广东事务所 Guangdong branch office**

地址：广东省惠州市惠城区演达大道16号 云天华庭24F  
电话：152-6240-3353  
邮箱：linliuyue@sz-xiran.com

锂电设备 粉体机器

