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Product Brochure



RESEARCH EQUIPMENT

Vacuum feeder

ZKS

Industrial vacuum feeder for dry powders and granules. Dust-free, efficient conveying for pharma, food, and chemical industries.

<https://www.planetaryballmills.com/products/research-equipment/vacuum-feeder.html>



Product Overview

Industrial vacuum feeder for dry powders and granules. Dust-free, efficient conveying for pharma, food, and chemical industries.





Product Introduction

The ZKS series vacuum feeder uses a vortex air pump to pump air, so that the inlet of the suction nozzle and the entire system are in a certain negative pressure state. The powder and granular materials are sucked into the feed nozzle along with the outside air, forming a material airflow, which reaches the hopper through the suction pipe, where the air and material are separated. The separated materials enter the receiving equipment. Feeding and discharging are accomplished by continuously opening and closing the pneumatic reversing valve, and the opening and closing of the pneumatic reversing valve is controlled by the control center. Vacuum feeders are widely used in pharmaceutical, food, fine chemical and other industries.





The vacuum feeder is a material conveying equipment designed based on the principle of vacuum negative pressure. It is mainly used for the airtight and dust-free conveying of dry materials such as powders and granules. Its core components include vacuum pumps, filters, conveying pipes, suction ports and control systems, which realize rapid suction and transfer of materials through air pressure differences. This equipment is widely used in chemical, pharmaceutical, food, electronics and other industries, and is suitable for scenarios with high requirements on hygiene, safety and automation, such as raw material transportation, production line docking, toxic and hazardous material handling, etc.

- **Pharmaceutical industry** : Transporting pharmaceutical powders, capsules, and tablet raw materials to ensure the cleanliness and purity of pharmaceuticals
- **food industry**: Transfer flour, sugar, food additives, etc. to meet health and safety requirements
- **Chemical industry**: Conveying corrosive or flammable materials such as pigments,

dyes, and metal oxide powders

- **New energy and electronics industry:** Dust-free transportation of battery materials (such as lithium iron phosphate) and semiconductor powder
- **Building materials and metallurgical industry:** Automatic feeding of cement, mineral powder and metal powder
- **Environmental protection field:** Recycle powder resources from industrial waste to reduce pollution

Technical parameters

model	Conveying capacity (Kg/h)	Motor power (kw)	Air consumption (L/Min)	Air supply pressure (Mpa)	Overall dimensions (mm)	Weight (Kg)
ZKS-1	400	1.5	8	0.6	F 220*570	10
ZKS-2	600	2.2	8	0.6	F 220*780	21
ZKS-3	1200	3	8	0.6	F 290*850	30
ZKS-4	2000	5.5	10	0.6	F 420*1150	40
ZKS-5	3000	4.0 (Roots blower)	10	0.6	F 420*1250	55
ZKS-6	4000	5.5 (Roots blower)	10	0.6	F 420*1350	70
ZKS-7	6000	5.5 (Roots blower)	10	0.6	F 420*1450	85

Working Principle

- **Negative pressure generation :** Start the vacuum pump or pneumatic generator to form a negative pressure environment in the system
- **Material inhalation:** The material enters the conveying pipe through the suction nozzle under the influence of external air pressure difference.
- **Gas material separation:** The mixture of material and air enters the hopper and is separated by a high-efficiency filter. The dust is trapped and clean air is discharged.
- **Material transportation:** The separated materials fall into the target container through gravity or air pressure difference, completing the conveying cycle.
- **automatic cleaning:** The backflush system regularly removes dust on the filter element to maintain filtration efficiency.

Product Features

- **Efficient and dust-free** : Fully sealed pipeline transportation, dust leakage is close to zero, and the filtration accuracy can reach 0.2 microns.
- **Energy saving and environmental protection**: Driven by compressed air or electric energy, the unit energy consumption is as low as 20 degrees/ton, and there is no oil pollution.
- **Intelligent control**: Support PLC to automatically adjust suction/discharge time, material level sensing and fault warning to achieve unmanned operation
- **Material diversity**: The parts in contact with materials are made of 304/316L stainless steel or wear-resistant coating, which is corrosion-resistant and easy to clean.
- **Flexible adaptation**: Modular design, can be connected to a variety of equipment (such as tablet press, mixer), the conveying distance can reach more than 50 meters
- **Easy maintenance**: Split filter element (such as Ti sintered filter element, PTFE filter membrane) supports quick replacement, and the backflush system extends the service life

Accessories & Customization

Accessories

Grinding jars, heating elements, sample holders, control modules and other matching accessories can be selected according to the product configuration.

Customization

For voltage, capacity, chamber size, process temperature or application requirements, please contact TENCAN for a suitable configuration.