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## JB Series Powder Vacuum Charging Machine



## Introduction

Vacuum charging machine is a new product. which was developed by our company on the basis of widely absorbing domestic and foreign similar products. Currently, it is the most advanced, ideal and perfect vacuum conveying equipment of powder material, granular material, powder mixture. Vacuum charging machine can automatically transport a variety of materials to the hoppers of packaging machines, injection molding machine, grinder etc, also, it can convey mixed material directly to the mixer (such as V-type mixer, two-dimensional mixer, three-dimensional mixer etc.), thereby reducing the labor intensity of workers and solving the feeding problem when the powder spills etc. It is preferred equipment of the promotion of clean and civilized production which was chosen by the pharmaceutical factory, food factory through the "GMP" authentication.

Vacuum charging machine consists of vacuum pump (no oil, no water), stainless steel suction Tsui, transmission hose. PE filter 316L stainless steel filter), compressed air cleaning devices, pneumatic discharge door devices. vacuum hopper and feed automatic control devices etc. The entire system designs reasonably and produces beautifully.

Vacuum charging machine is divided into discharging space and consecutive discharging, discharging space is conducive to lower investment cost of the equipment, and convenient to control the level, Consecutive discharging generally used in long-distance. large production of materials at the time of vacuum conveying. In most cases, we recommend the discharging space to users.

## Main Usage

This equipment is widely applied for packer, mixer, tablet press machine, vibrating screening machine, capsule filling machine and wet-method pelletizer etc. Vacuum feeder is easy to operate. Feeding pipe begins to suck materials when press on the feeding switch, when the process of suction finished, vibration device vibrates or back flushing device blowbacks to prevent from occluding the filter. The two processes are set and controlled by temporal sequence so that it can circulate for feeding vibration and back flushing.

Conveying capacity is measured when pipeline is four meters long and conveying materials are the flour. The longer the pipeline is, transmission capacity will drop, and conveying capacity has a great relationship with the characteristics of materials.

The type of ZKS-7 vacuum feeding machine was newly developed by our company in 2006. It features lower power, large feeding capacity, low noise, and long lifetime. It is also fit for long conveying distance, the capacity of feeding can reach 2t/h when pipeline is 40 meters.



## Application

### **Grain Industry:**

Conveying raw grains such as wheat, corn, rice, and legumes, as well as flour, bran, and feed.

### **Food Industry:**

Conveying sugar, salt, monosodium glutamate (MSG), milk powder, starch, flour additives, etc.

### **Building Materials and Mining Industry:**

Conveying cement, fly ash, mineral powder, lime powder, clay powder, sand and gravel (short distances), etc. Commonly used in concrete mixing plants, cement plants, and brick and tile factories.

### **Chemical and Plastics Industry:**

Conveying plastic pellets (PE, PP, PVC, etc.), fertilizers, soda ash, resin powder, laundry detergent, etc.

### **Pharmaceutical Industry:**

Conveying raw materials such as medicinal powders and granules.

## Typical Application Stations and Scenarios

### **Feeding Packaging/Filling Machines:**

Transporting materials from storage silos or bulk bags to the hopper of packaging machines to enable continuous production.

### **Feeding Mixers/Blenders:**

Automatically multiple raw materials into mixers in precise proportions, forming the core of automatic batching systems.

### **Reactor/Silo Charging:**

Replacing manual by conveying materials from ground level to elevated equipment, reducing labor intensity and eliminating dust.

### **Bulk Bag/Small Bag Unloading:**

Integrating with unpacking stations (bulk bag dischargers) to safely and cleanly transfer materials from large packaging into downstream systems.

### **Inter-process Transfer:**

Establishing sealed, automated material handling connections between equipment at different production stages.

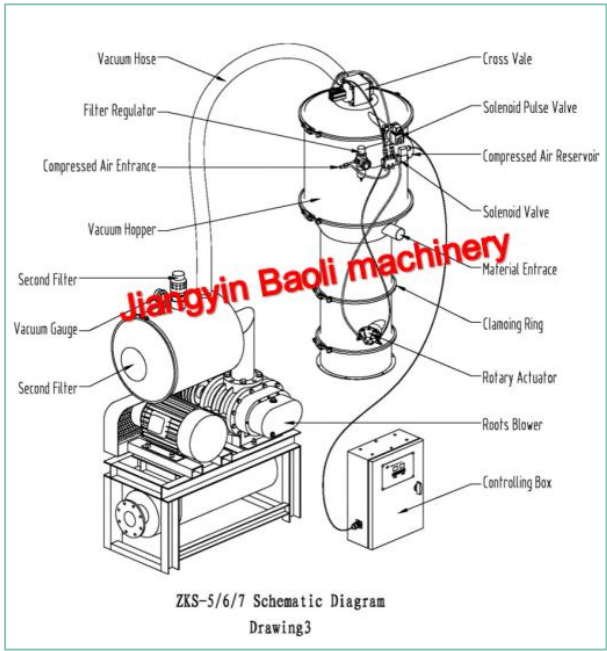
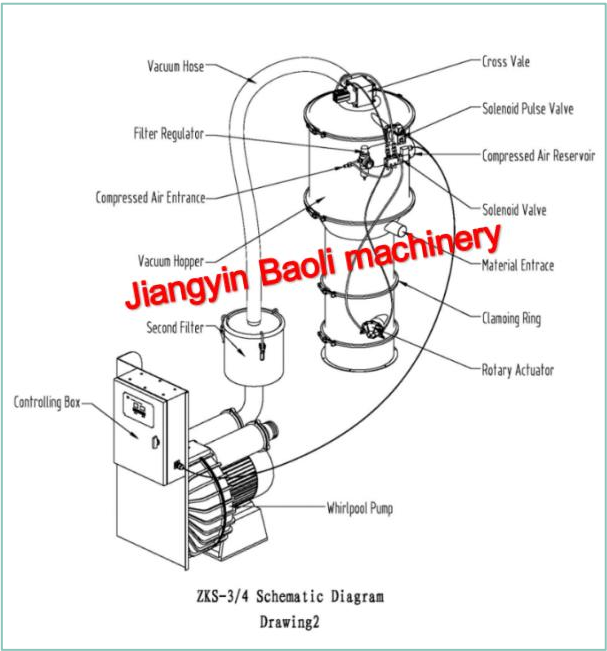
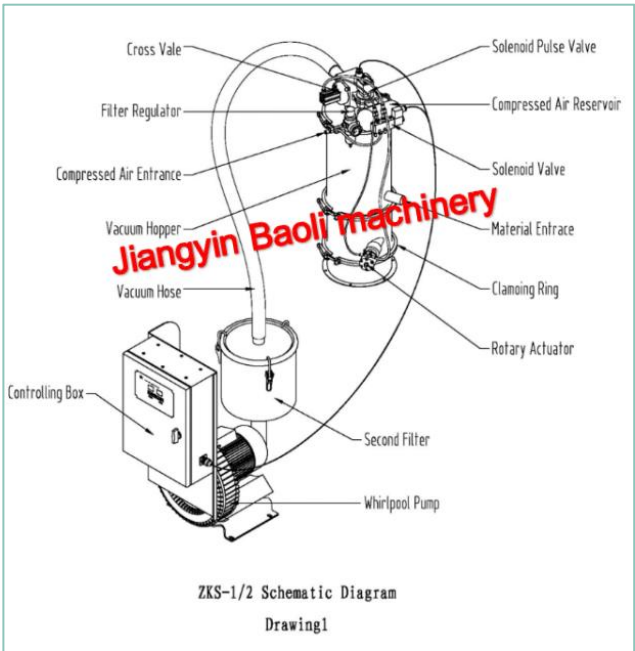
### **Feeding/Discharging for Sifting machine/Crushing Machines:**

Coupling with screeners and crushers to form enclosed processing units.



A Vacuum charging machine is particularly well-suited for applications requiring dust-free, enclosed, and automated conveying. A Vacuum charging machine is far more than a simple "suction" tool; it serves as a core piece of equipment for modernizing, enclosing, and intelligentizing powder handling processes. Its applications are rapidly expanding from traditional industries such as food and chemicals into high-precision fields like pharmaceuticals and new energy, making it a critical guarantee for enhancing product quality, production efficiency, and competitiveness.

Indication diagram of each part



## Technical Parameters

| Model                    | ZKS-1 | ZKS-2 | ZKS-3 | ZKS-4 | ZKS-5 | ZKS-6 | ZKS-7 |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|
| Motor Power(kw)          | 1.5   | 2.2   | 3     | 5.5   | 4     | 5.5   | 5.5   |
| Conveying Capacity(kg/h) | 400   | 600   | 1200  | 2000  | 3000  | 4000  | 6000  |

### Continuous type vacuum charging machine



**Continuous vacuum charging machine** have become an ideal choice in the field of powder material transportation due to their advantages such as high efficiency, continuous operation, automation, environmental safety, and strong adaptability. By optimizing production processes, reducing labor costs, and improving product quality, they provide reliable support for enterprises in achieving intelligent and clean production. When selecting a system, customized design should be considered based on factors such as material characteristics, conveying distance, and production capacity requirements.



## FAQ

### **1,Decrease in Conveying Capacity or Complete Failure to Convey**

#### **Root Cause: Insufficient vacuum level.**

Specific Checkpoints:

Air Supply Issues: Inadequate compressed air pressure or flow rate (the most common cause); air circuit valves not fully open or clogged; air hose diameter too small or length excessive.

Vacuum Generator Issues: Nozzle clogged (by oil contamination, debris); wear leading to reduced efficiency; model undersized for the required conveying distance/height.

Filter Clogging: This is an extremely common cause. Failure of the reverse-jet cleaning system (damaged solenoid valve for pulse-jet, incorrect timing), or material being too fine or too sticky, can cause filter elements (filter rods/cloth) to be coated with material, drastically reducing air permeability and preventing the establishment of vacuum.

Sealing Issues: Leakage at points such as conveying pipes (especially quick-connect fittings), the suction lance/pick-up point, hopper doors, or reverse-jet pipes, preventing the formation of effective vacuum.

Material Issues: Material caking, moisture absorption, or extremely poor flowability, leading to "bridging" or "ratholing" at the material inlet.

### **2,Excessive Conveying Cycle Time**

The factors causing decreased conveying capacity (listed above) also prolong the time required for a single conveying cycle.

Poor Discharge Flow: The discharge valve (typically a bottom butterfly valve or flap valve) operates sluggishly or does not open fully, extending the time to empty the receiving hopper.

Incorrect Control System Parameter Settings: Settings such as "filling time" or "discharge time" are too long, increasing idle/waiting periods.

### **3,Excessive Noise**

Vacuum Pump/Generator Noise: Muffler/silencer clogged or failed.

Airflow Noise: Generated by the rapid exhaust of compressed air.

Mechanical Impact Noise: Discharge valve actuates too forcefully (can be mitigated by installing buffers).

### **4,Material Contamination or Cross-Contamination**

Incomplete cleaning of equipment during material changeover, leaving residual material.

Damaged filter, allowing material to enter the vacuum pump or be discharged to the atmosphere.

### **5,Maintenance and Preventive Key Points**

Establish a Standard Troubleshooting Procedure:

Follow the principle of "Check air source first, then seals, and finally the filter."

Ensure Air Source Quality:

Guarantee a stable, clean, and sufficient supply of compressed air, as this is the prerequisite for normal equipment operation.

Prioritize the Reverse Jet System:

Regularly inspect the pulse valve and controller to ensure the reverse jet pressure and timing are set correctly.

### **6,Implement a Regular Maintenance Schedule:**

Daily: Check air source pressure and observe the operational cycle.

Weekly: Clean the level sensor probe and inspect all sealing points.

Monthly/Per Material Type: Clean or replace the filter element (the most critical consumable).

Follow Operating Procedures: Strictly adhere to the sequence of \*\*\*Start the dust collector fan/vacuum pump first, then start the feeder.

**The efficient and stable operation of a vacuum feeder relies on continuous attention to and maintenance of the three key elements: "Air, Filter, and Seal." Most faults can be located and resolved through systematic troubleshooting.**



## About Baoli Machinery

Our company locates at Wuxi city, very near Shanghai City and it takes 35-50 minutes to get to our city by train from Shanghai.

1, We have CE certificate, ISO, BV...etc.

2, Each year, We takes part in a lot of Expos ,for example: FIC, CPHI, API...etc

3, Our team possesses profound experience in the powder industry sector. We can provide relevant production lines for loading, crushing, mixing, sieving, conveying and so on.

