



WENZHOU JINBANG LIGHT IND MACHINERY CO.,LTD

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INTEGRITY AND WIN-WIN
BEYOND SELF

WITH YOU HAND IN HAND TO
CREATE A BETTER FUTURE



JNBAN Belt Vacuum Drying (BVD) is a method of continuously distributing liquid raw materials on a conveyor belt under vacuum conditions.

Vacuum belt dryer



Food



Pharmaceutical



Drinks



Chemical

ABOUT US

1997

Founded in 1997

120

120 high-tech talents

60030

It covers an area of 60030 m²



COMPANY INTRODUCTION

Wenzhou Jinbang Light Ind Machinery Co.,Ltd. is created in 1997, which is located in Wenzhou Binhai industrial park and covers an area of about 60000 cubic meters. The company has more than 400 employees, including more than 50 middle and high technical personnel and 4 visiting professors. The company is a national high-tech enterprise integrating research and development, manufacturing and sales. It's the professional enterprise, which is specialized in the production and sale of pharmaceutical, biological, chemical engineering machinery and equipment.

The company's main business area is vacuum low temperature liquid continuous dryers, vacuum low temperature solid continuous dryers, extraction equipment, concentration equipment, separation and purification equipment, solvent recovery equipment and drying equipment consulting, program design and manufacturing, budget, on-site installation, after-sales maintenance services.

2005
Set up a major science and technology project of Zhejiang Science and Technology Department. The product has obvious effect of environmental protection and energy saving in the practical application of pharmaceutical field. The unit design and manufacture meet the requirements of CMP.

2007
The company became a national high-tech enterprise.

2011
The company's products have become the national torch key project.

2015
The company completed the FDA project of Yiling Pharmaceutical, which met the standard acceptance and put into use.

2019
The intelligent production base covering an area of 31,000 square meters was put into use. The base integrates production and Research and development to establish an automated and professional manufacturer.

2021
Japan Morimatsu ordered 12 sets of JBG9-160 belt dryer at a time. Creating a successful case for lithium battery industry process improvement.

CE FDA GMP TS



1997

Founded in Wenzhou, China, the company has become a professional enterprise engaged in the production and sales of pharmaceutical and bioengineering machinery and equipment.

2005

2006

The company participated in the "11th Five-Year Plan" National Science and Technology Support project "Research on Traditional Chinese Medicine Equipment and Key Technologies (2006BAD106A08)".

2007

2008

Company's product BVD has obtained two invention patents. (ZL200710070502.1, ZL200910097511.9).

2011

2013

The company has won the first prize of science and technology progress in Zhejiang Province, the first prize of science and technology progress in Wenzhou City and so on.

2015

2018

The annual sales of the company reached 300 million yuan, and the construction of a new 50,000 square meters intelligent manufacturing factory was started.

2019

2020

The vacuum belt dryer cleaning sterilization and procedure method obtained the National invention patent of the People's Republic of China (number :ZL201811374976.x).

2021

2022

Germany Doehler Group ordered 2 sets of BVD6105 belt dryer at a time. JNBAN officially entered the international market.

Product features and description

JNBAN Belt Vacuum Drying (BVD) is a method of continuously distributing liquid raw materials on a conveyor belt under vacuum conditions. The materials are dried with the conveyor belt on the heating plate, and then cooled, embrittled and pulverized. A low temperature drying method. During the whole drying process, the extract is in a vacuum, closed environment, and the drying process is mild (operating temperature 30-135° C), which can maintain its physical properties to the maximum extent and obtain a high quality final product. Since the material is gradually dried under a vacuum for a period of time, the particles obtained by drying have a certain degree of crystallization effect, and at the same time, there are micropores inside from the microscopic structure. After directly pulverizing to the required particle size, the flowability of the particles is very good, and it can be directly tableted or filled with mash, and the particles have good fast solubility.

Belt Vacuum Dryer is a method of continuously distributing liquid raw materials on a conveyor belt under vacuum conditions. The materials are dried with the conveyor belt on the heating plate, and then cooled, embrittled and pulverized. A low temperature drying method. During the whole drying process, the extract is in a vacuum, closed environment, and the drying process is mild (operating temperature 30-135° C), which can maintain its physical properties to the maximum extent and obtain a high quality final product.

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In addition, a series of parameters can be adjusted online to meet the process requirements of different products, such as the belt speed of the vacuum (solid) belt drying track, the thickness of the layer, the drying temperature, the vacuum degree and etc. The dry product can retain its color, aroma and taste to the utmost extent, and obtain a high quality final product.



Vacuum belt dryer



Belt vacuum dryer working principle

Vacuum belt drying technology has a wide range of applications and can be applied to most extracts and solid. Especially for materials with high viscosity, easy to build, thermoplastic and heat sensitive, vacuum belt drying can overcome the shortcomings of too dry and too dense spray drying powder. In addition, a series of parameters such as drying time of vacuum belt drying, feed rate, material thickness, drying temperature and environmental vacuum can be adjusted to suit the process requirements of different products, for heat sensitivity, high concentration, high sugar content, Materials such as high viscosity are also fully tested. At this point, belt vacuum dryers are far superior to spray dryers.

BVD Series vacuum belt drying unit overview.

BVD series vacuum belt drying unit is a modern pharmaceutical equipment that Wenzhou Jinbang Light Industry Machinery Co., Ltd. has successfully developed in recent years.

The only equipment manufacturer in China that has obtained 2 invention patents in the field of vacuum belt dryers. China's first manufacturer to independently develop vacuum belt dryer equipment that meets FDA standards. It has been put into large-scale production in the first line of many well-known pharmaceutical, food and biological enterprises in China. The operation quality of equipment is stable, and the effect of energy saving and emission reduction is obvious. The BVD series vacuum belt dryer was evaluated by the expert group organized by the Science and Technology Department of Zhejiang Province, and passed the design and manufacture of the scientific and technological achievements of Zhejiang Province in 2008 (identification certificate number: Zhejiang Technical Association Identification [2008] No. 186). Technology is at the international advanced level.



BVD series vacuum belt dryers have been included in the "Eleventh Five-Year National Science and Technology Support Program, Zhejiang Science and Technology Department Major Science and Technology Public Relations Project and Zhejiang Province" Major Science and Technology Special (Priority Theme) Social Development Project. There are 4 papers and 6 patent applications accepted, including 4 invention patents, 2 special authorizations, and 10 practical patents. They won the third prize of Zhejiang Science and Technology Progress Award and the first set of products in Zhejiang Province.

Vacuum belt dryer principle

07

Based on the principle of humanized design: the main body adopts thermal insulation measures to keep the working temperature of the equipment and the operating environment temperature within a suitable range. The inside and outside of the equipment are designed with corresponding detection channels to facilitate daily maintenance and maintenance.



01 Using digital integrated manufacturing technology, automatic detection and control during dynamic vacuum drying is realized.

02 Adopting digital axial automatic rectification technology to overcome the problem of deviation of the belt during vacuum drying. The belt conveyor system has an automatic online correction function to ensure continuous operation of the equipment for a long time.

03 Adopting new superheated water heating technology, it can be adjusted freely online in the temperature range of (30-135°C). Due to the liquid closed-loop heating method, no discharge and no loss, the heating temperature stability and equipment Energy consumption and utilization are superior to traditional steam heating technology.

04 The vacuum degree adopts fully automatic on-line adjustment and control technology, which can optimize the combination of main process parameters such as drying temperature, vacuum degree, feed rate and drying time, so that the working utilization rate of the equipment can reach the most ideal economic benefit.

05 CIP automatic online cleaning system, diversified cleaning methods, can carry out all-round cleaning without any dead angle, the cleaning effect is thorough and fast, in line with GMP requirements.

06 The batching system, the feeding and discharging system can carry out a variety of optimized design, configuration and combination according to different material characteristics, which have met the user's process requirements.

Main Advantages



The first belt vacuum dryer came out in 2003, eighteen years of manufacturing experience.

The only equipment manufacturer that has obtained two patents in the field of vacuum belt dryer.

It is the first manufacturer which independently developed of vacuum belt dryers to meet FDA standards in China.



Grade A2 pressure vessel design qualification, D1, D2 manufacturing qualification, GC2 pressure pipeline installation qualification.



Using superheated water heating method, 30-135°C temperature (tunableness), temperature of technolgh: $\pm 1.5^{\circ}\text{C}$ (national invention patent).

Using superheated water heating method, Evaporation is 10% higher than other manufacturers in the same dry area.

Using superheated water heating method, the energy consumption is 10% lower than other manufacturers at the same capacity.

Using superheated water heating method eliminates the loss of the active component of the material, does not change the original color of the material, and no coke chip solubility is better.

Track deviation correction adopts digital online automatic deviation correction technology (national invention patent).

Its high layer spacing is to meet the drying of various kinds of materials and can effectively through the foaming dry material to ensure evaporation effect.

It spends 30-70 minutes to complete the discharge and its product recovery rate can reach more than 99%.

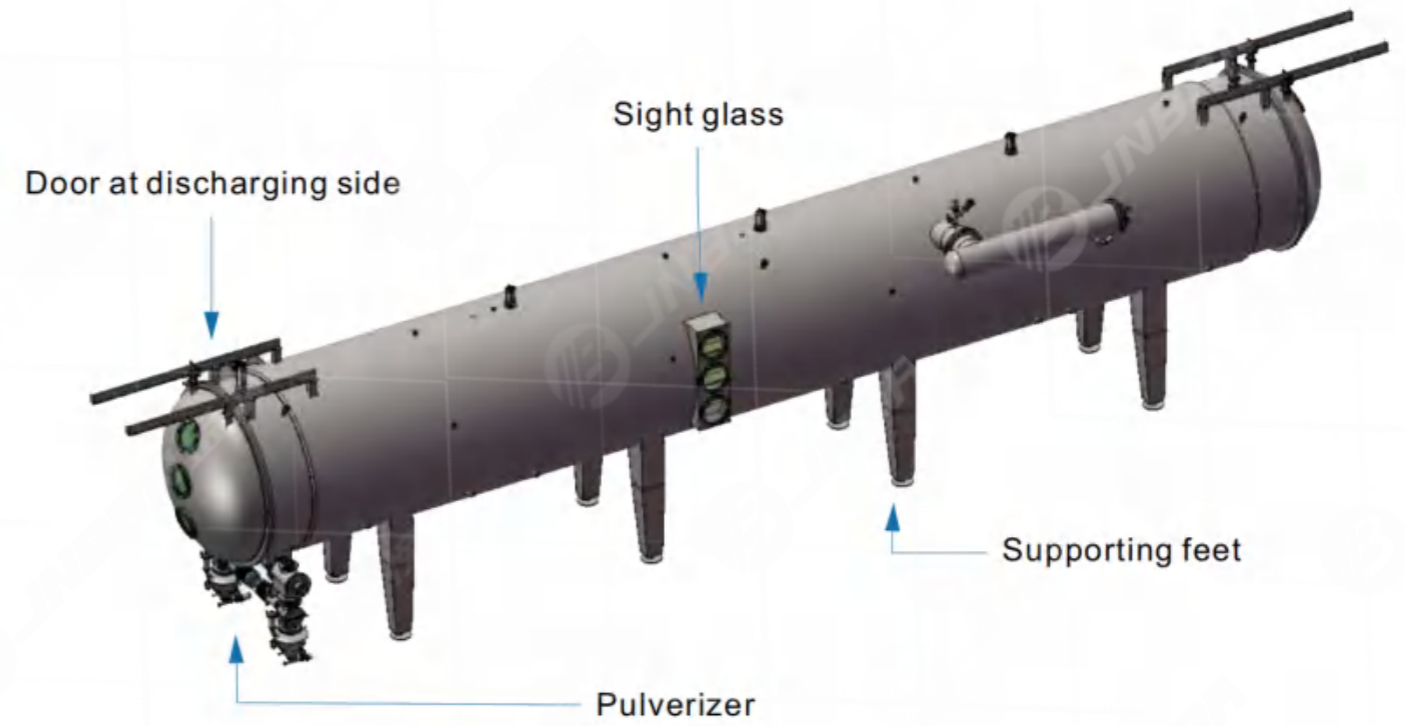
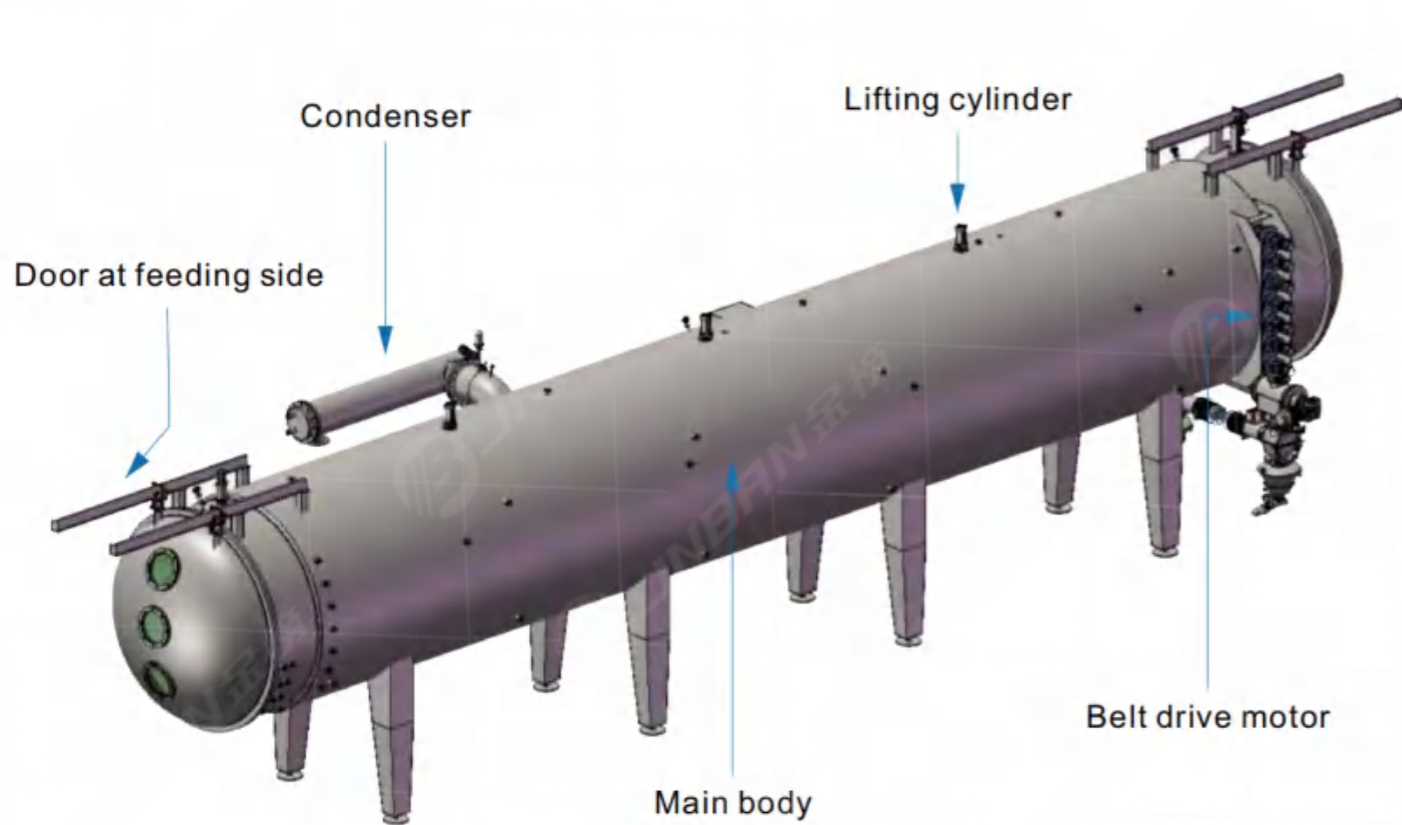
Its fine powder mesh is 20-100 mesh, which makes dust-free state and one step in place.



There is no demand for lubricating oil inside the dryer.

The whole system adopts PLC automatic control.

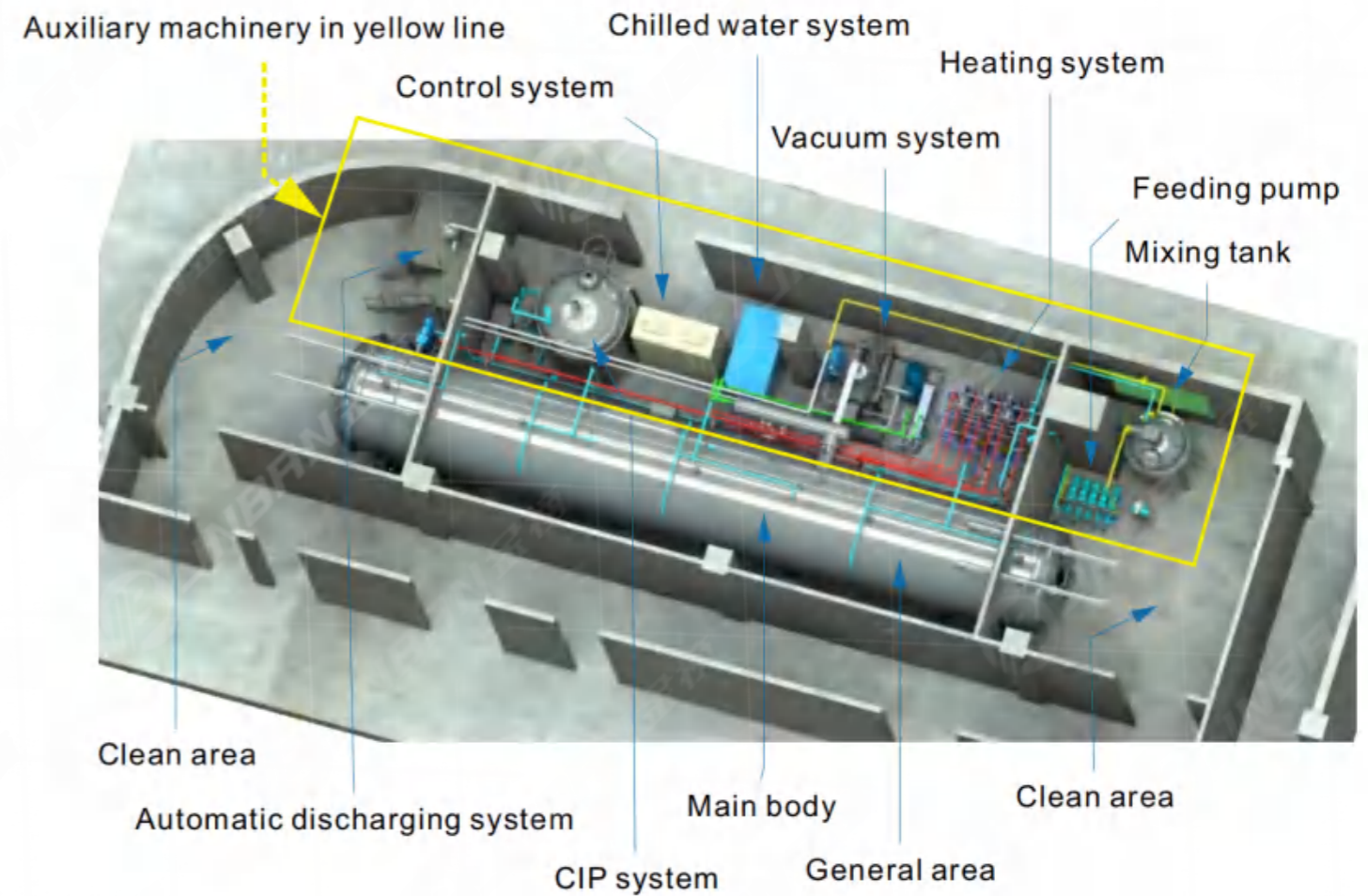
It uses CIP online automatic cleaning which is in line with GMP requirements.



Structure Vacuum Belt Dryer

- BVD7-120: evaporated quantity of water: $\geq 100\text{Kg/h}$
inside diameter $2500\text{mm} \times$ length 16500mm ,
Heating area is 115 square meters. Cooling area is 9 square meters.
Total dry area 124 square meters. It divided into seven layers.
- Drying cabinet manufacture completely follow national GB150.1-150.4-2011 "pressure vessel" manufacturing process.
- The dryer is designed with 50mm thick insulation layer and covered with 2mm stainless steel plate with matte finish on the outer surface.
- Host setting: 400mm large aperture observation mirror, which is easy to operate.
- An infrared temperature detector is installed in each drying area to monitor the actual temperature of materials during drying (America raytek).
- Track spacing $\geq 260\text{mm}$, which can adapt to the drying of various kinds of materials to ensure the evaporation effect of materials and no dead angle cleaning.

- Double maintenance channels are set inside the equipment to facilitate and overhaul equipment maintenance.
- The main engine barrel is inclined 100mm to the feeding end to solve the cleaning water drainage.
- There is no demand for lubricating oil inside the dryer.



Introduction Feeding system

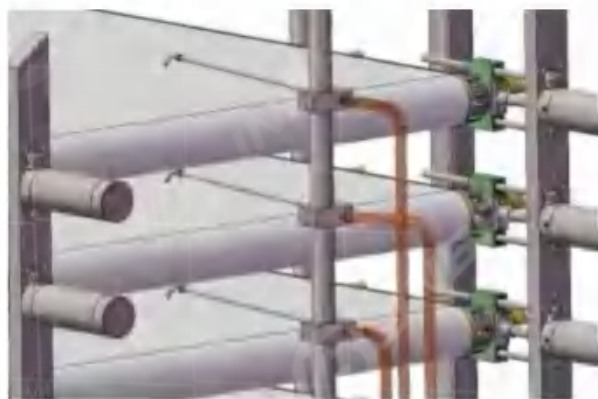
Feed system has 2 units of 2000 L concentrated extract cans.

Extractum and auxiliary materials use vacuum filling function.

Anchor stirred structure of feeding tank has the functions of extractum mixing with auxiliary materials, which can adapt to many kinds of dry material.

The temperature in the tank can be set automatically at room temperature ~ 105°C according to requirements.

The feeding system is manufactured according to "pressure vessel". The jacket is 0.3Mpa. The tank and pipeline are self-sterilized and the extractum is sterilized.



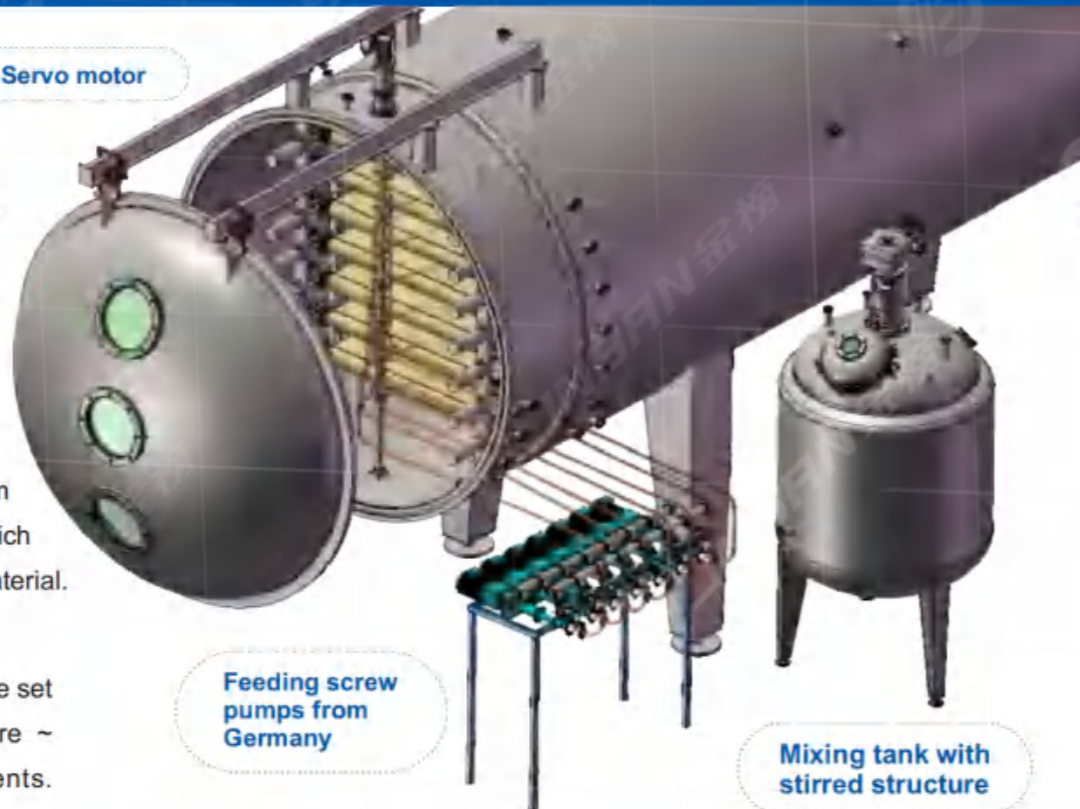
It has equipped with circulating pump. The material is always in the circulating state. Circulating pump keeps the same temperature, and prevents the material from settling and stratification.

Each layer has equipped with Feeding screw pumps from Germany, which has pressure, flow function, and feed quantity can be adjusted online.

Feed set double filter device, can filter the impurities in the extract.

Putting material uses servo motor, which realizes both ends fast, the middle slow, multi-speed, putting material more even, even water and color of the finished products, good liquidity at the same time can be adjusted online Angle and speed of putting material.

Servo motor



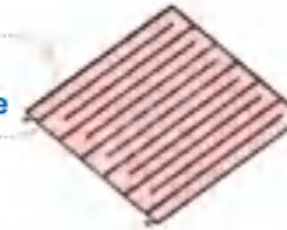
Feeding screw pumps from Germany

Mixing tank with stirred structure

Introduction Heating system

Heating system---Invention Patent Number ZL200920116880.3

Heating plate
Structure inside



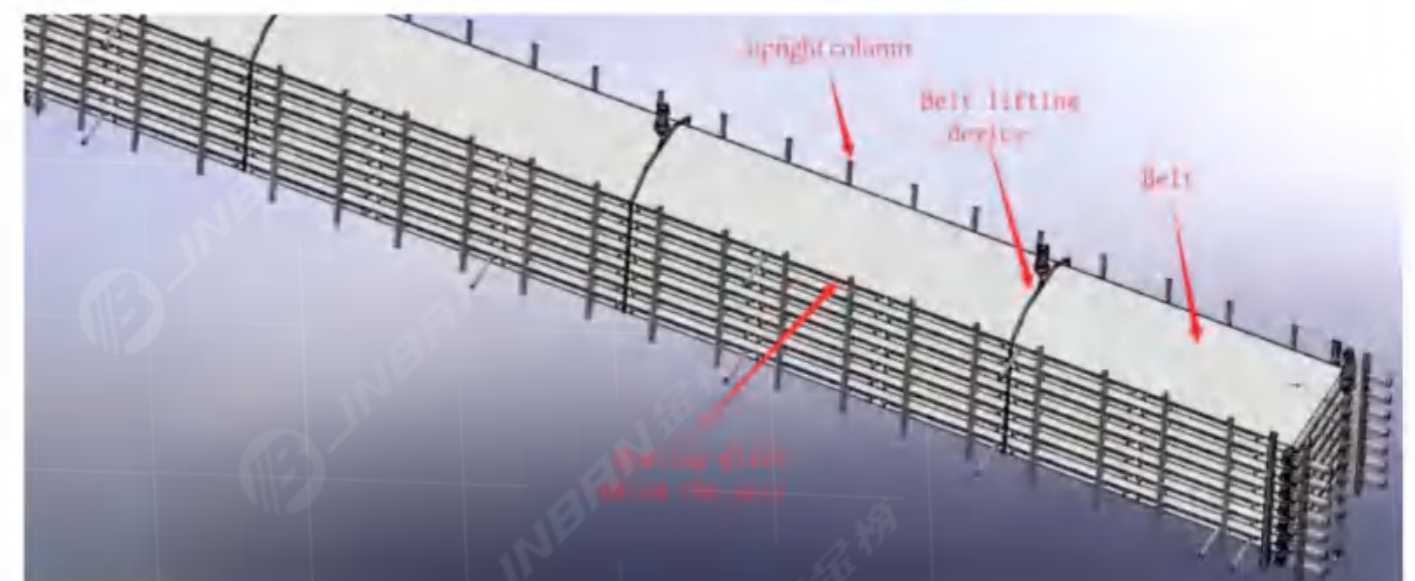
- Set 3 hot water heating unit and a district cooling unit, with a buffer tank.

- Constant pressure system, liquid level and temperature monitoring device.

- Pressure reducing valve, steam trap adopts Spisharke, high temperature pump adopts.

- Southern pump industry to ensure system stability.

- External heating method is adopted to improve the heat transfer, which make it with resistance to high temperature, high pressure, high efficiency, long service life.

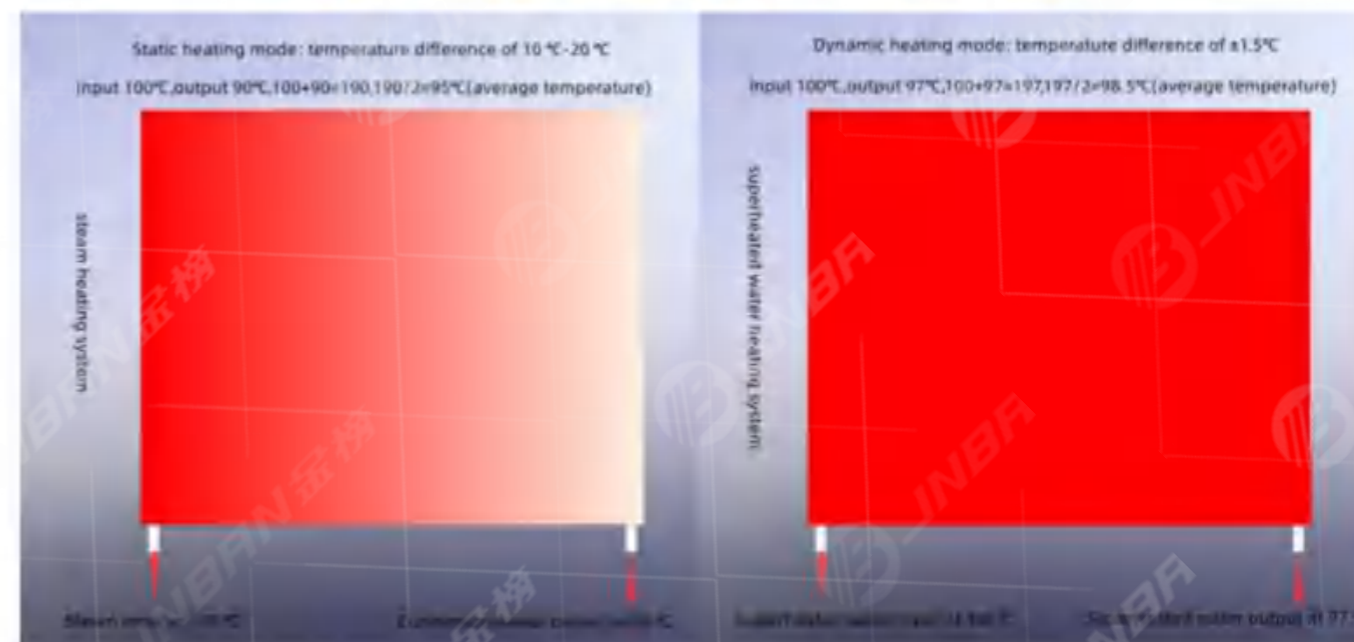


- The heating temperature range of each section is precisely adjustable from 30°C to 135°C, which can adapt to the drying of various materials.
- Temperature uniformity: ensure inlet and outlet temperature difference $\pm 1.5^\circ\text{C}$.
- The pressure fluctuation in Party A's steam pipe network will not affect the temperature uniformity of the system.
- The heating plate adopts zigzag type passage structure to release the overall stress and ensure the smoothness is less than 1.5mm during use.
- The heating plate is manufactured according to GB150 "Pressure Vessel", and the testing water pressure is 1.0Mpa.
- In liquid state, the instrument is not easy to damage, and has long service life.

Problems existing in traditional direct steam heating

S/N	Existing problems	detailed description
1	Large energy consumption	Direct steam heating, steam condensate water is a direct discharge process. Its useless loss is big, and going through hot water heating is a recycling process, which is no emissions, so the energy consumption is greater than hot water heating.
2	Temperature heterogeneity	In the evaporation process, the heat transfer is carried out by converting saturated water vapor into condensed water, so the heat transfer is basically condensed water in the back section of the heating plate, and the temperature gap is basically 10-20°C, which will cause the uneven temperature before and after the heating section.
3	Low productivity	Compared with the drying equipment of the same size, due to the large temperature difference between the front and back of the heating section, the heat enthalpy value of the condensate water in the back section is low, and the heat transfer efficiency is low. And the low thermal conductivity of steam will cause slow evaporation of equipment.
4	System temperature is difficult to control	Steam heating is static heating mode, the point of temperature measurement only represents the temperature of the measured point, not the temperature of the system.
5	The heat source is greatly affected by the system	Because it is direct steam heating, the steam is affected by the pressure change in the pipe network and directly leads to the heating temperature in the heat exchange box, which is constantly changing, and the unstable heating temperature affects the product quality.
6	Destruction of the active component of the material	The temperature of steam is over 100°C. To complex extractum components will cause partial damage, such as drying materials have discoloration and scorch phenomenon.
7	Dry powder has poor fluidity	Due to large temperature difference before and after, uneven moisture content of dry powder is easy to cause dry powder agglomeration phenomenon.
8	Instrument damage rate is high	In the gaseous form of steam, it is easy to cause vibration when heated. Large temperature difference in temperature control results in frequent action of executing components, high damage rate of instruments and frequent replacement.

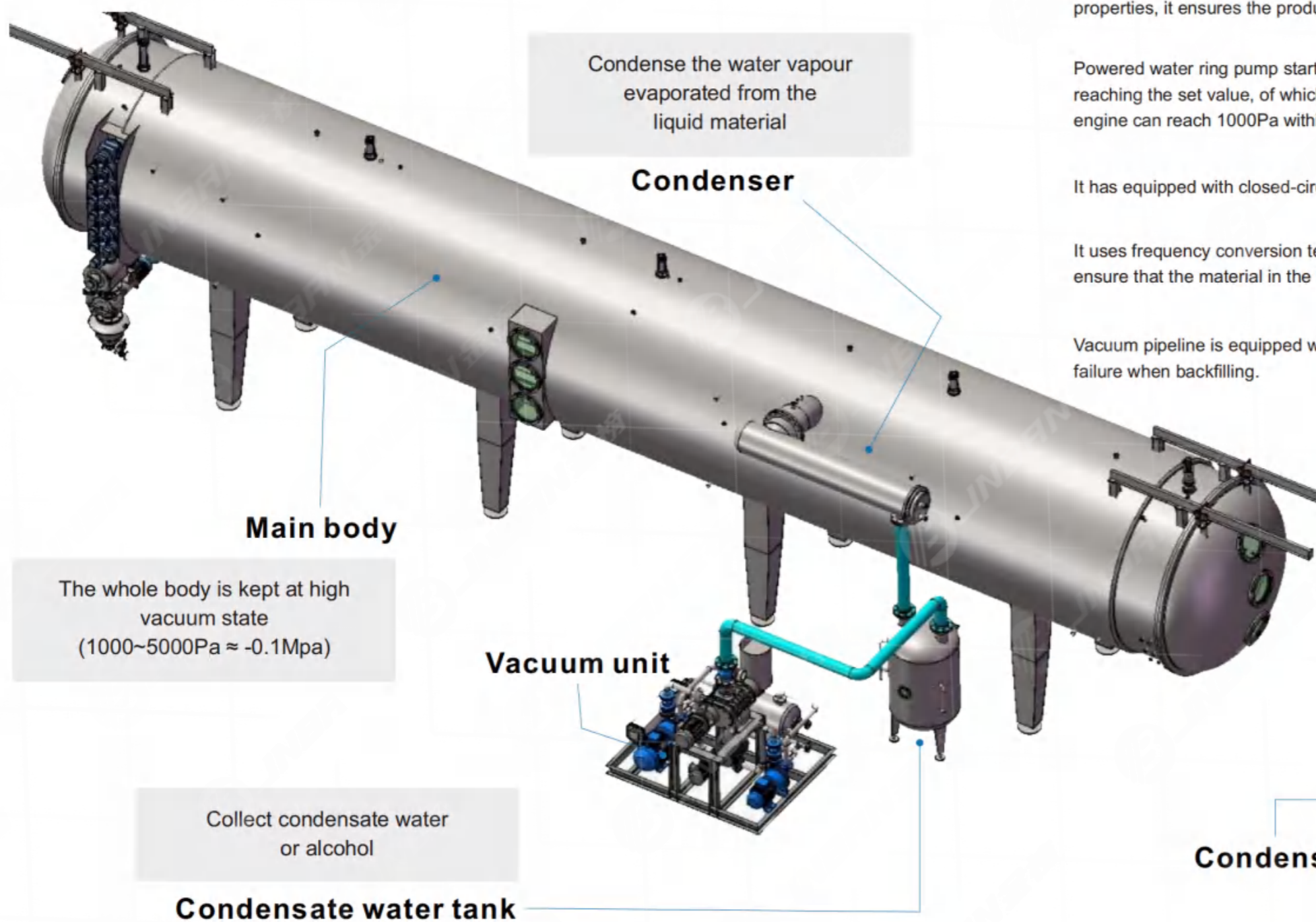
Comparison of heat transfer efficiency



Performance comparison between going through superheated water heating system and steam heating system

S/N	Content	Going through superheated water type	Traditional steam direct type
1	Heating method	Dynamic heating mode, high heat exchange efficiency	Static heating mode, low heat exchange efficiency
2	Temperature range	30°C ~ 135°C (Suitable for drying of many varieties)	Steam > 100°C (Not suitable for low temperature drying)
3	Heat conductivity coefficient	0.67w/m.k, High thermal conductivity, high evaporation efficiency, reduce auxiliary energy consumption	0.02w/m.k, Slow speed of thermal conductivity, low evaporation efficiency
4	Inlet and outlet temperature difference	1 ~ 3°C, Each layer of material is heated evenly, high evaporation efficiency	10 ~ 20°C, Each layer of uneven material is heated, the evaporation efficiency is low
5	Temperature stability	Good stability	Fluctuation is large and difficult to control
6	Heat emissions	External heating, high efficiency of steam utilization, the corresponding heat loss is small	Internal heating, Discharge temperature > 90°C
7	Shake	No shake	In the process of gaseous transformation into condensate water, the vector release produces continuous vibration and poor heat transfer efficiency

Introduction Vacuum system



It adopts two roots pump and 2 sets of water ring vacuum pump, which is level 3 configuration. According to the material properties, it ensures the production process of vacuum material can achieve the ideal state of evaporation.

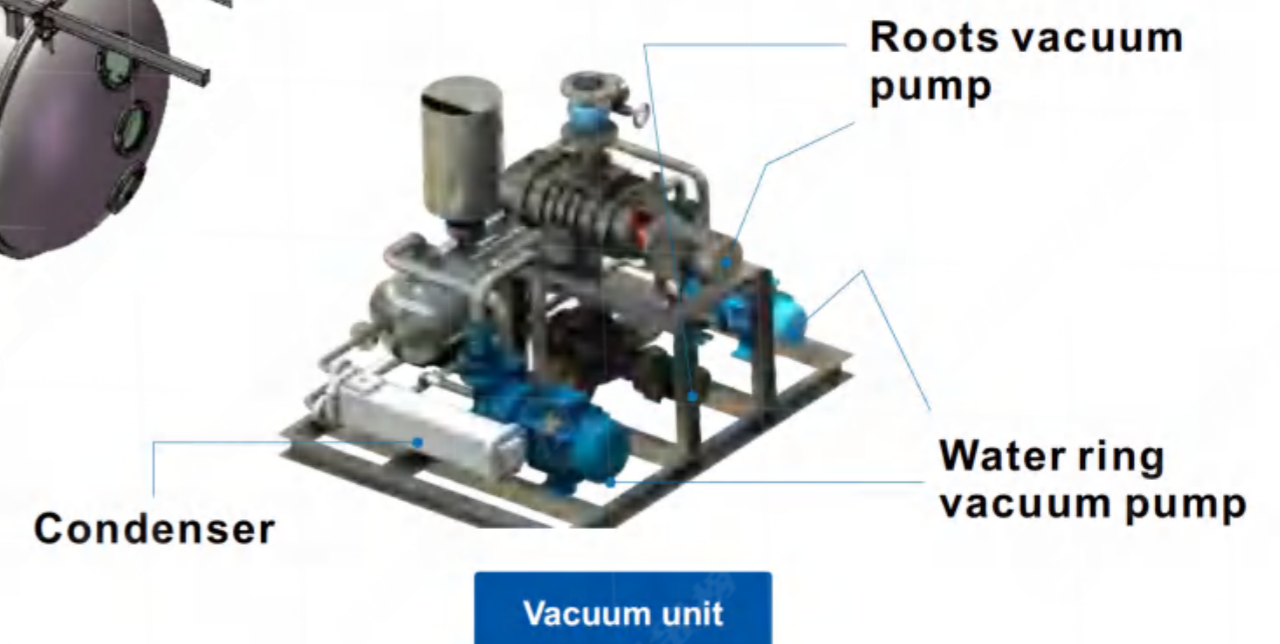
Powered water ring pump start at the same time when the device starts to work. After the two work vacuum degree reaching the set value, of which one water ring pump automatically switch to standby mode, the vacuum of the main engine can reach 1000Pa within 25 minutes.

It has equipped with closed-circuit circulating water cooling and recycling system to reduce energy consumption.

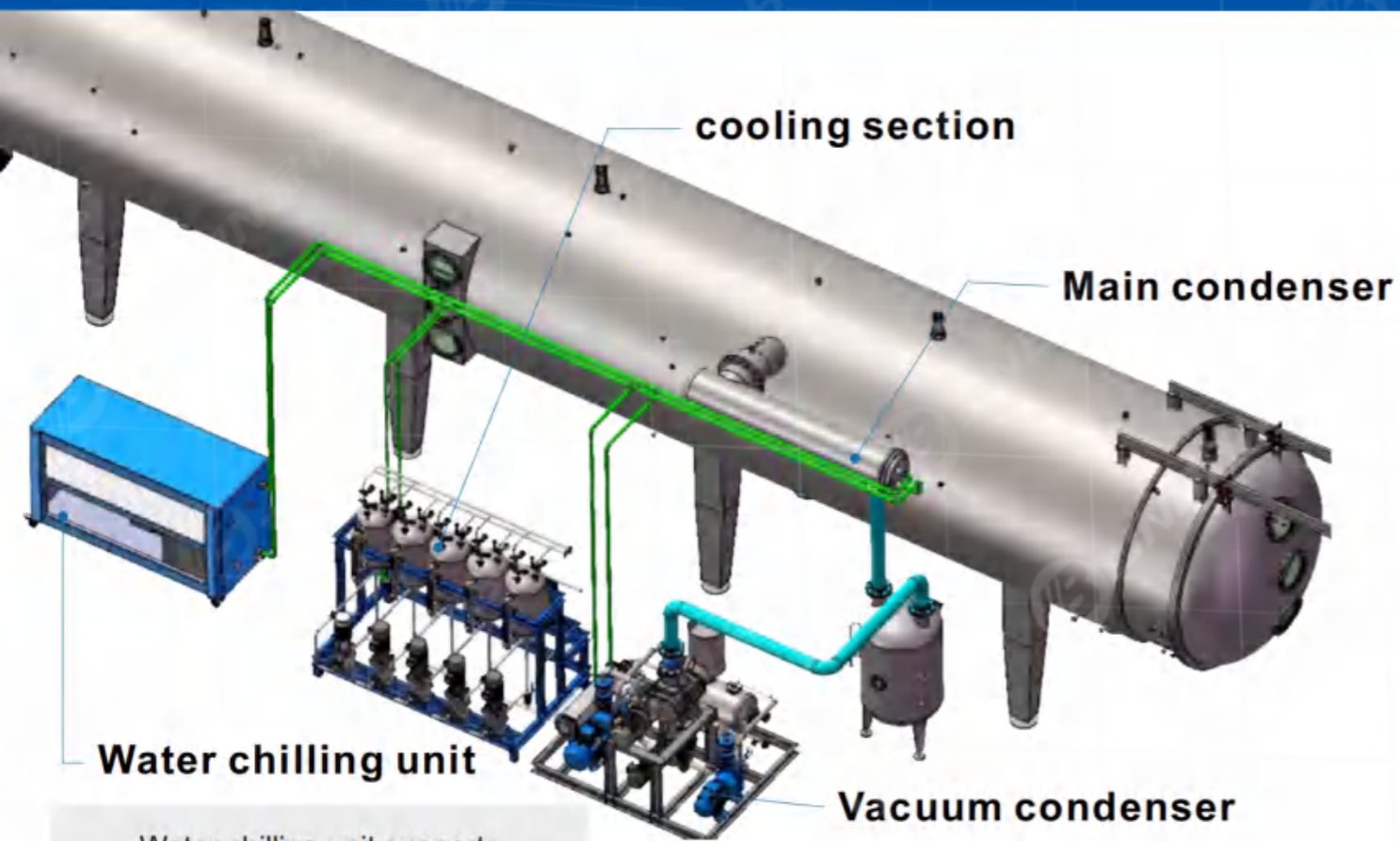
It uses frequency conversion technology, which is no break. Vacuum degree control range between ± 100 Pa, which can ensure that the material in the best process requirements under the drying.

Vacuum pipeline is equipped with pneumatic butterfly valve and one-way valve to achieve linkage and prevent system failure when backfilling.

It adopts high efficiency detachable condensing water trap which can online high temperature cleaning and long-term use without reducing the use efficiency.



Introduction Chilled water system



Water chilling unit

Water chilling unit supports chilled water for 3 parts

It's equipped with a low temperature water chilling unit. The temperature of cold water outputting can be adjusted from 7~15°C.

The range of supplying cooling: The equipment of main condenser supplies cooling. Cooling section is constant temperature. Vacuum unit circulates the water for cooling.

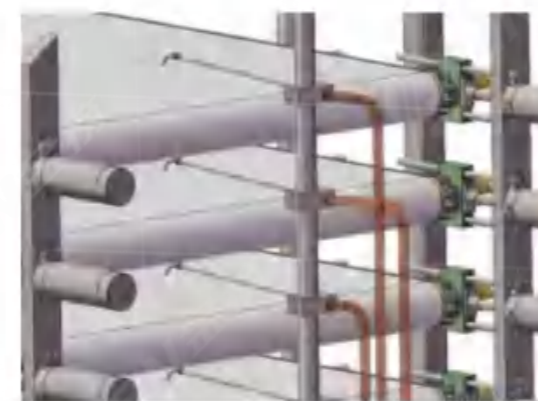
It's equipped with relevant cold water buffer tank ,circulating pump, automatic fluid infusion, pressure and temperature monitoring devices, etc.

All of equipments and pipes did heat preservation treatment, and in keeping with corresponding environment.

It's equipped with automatic constant temperature, high pressure protection, low pressure protection, electric current protection, overload protection, Phase order protection, open phase protection, high temperature protection, low temperature protection, lack of water protection, water protection, Exhaust protection.



The operating state of the refrigeration unit is automatic adjustment. Compressor power classification energy consumption adjustment(0%、25%、50%、75%、100%).



Track deviation correction system— Invention Patent Number ZL200710070502.1

Track deviation correction adopts digital online axial(real-time) automatic deviation correction technology.

The detection of tracks' offset adopts magnetic displacement tracking technology, data and information collection is correct to 1mm.

The whole racks adopts modular assembly, to ensure precision interchangeability of unit mount.

The Rectifying cylinder adopts import brand, which uses texture 304. It's running flexibly and having a long service life.

The bearing of system adopts German egus brand, which is anti abrasive, wear-resistant and self-lubrication, and having a long service life.

We promise to freely replace drive bearing for life.

Track adopts import high-end brand, which is heat resistant, non permeable, non sticky material, having a long service life, and in line with GMP requirements.

Track deviation correction is fully automatic controlling. It can run continuously and stably, and its run time can be set according to customer process requirements.

Introduction

Discharge crushing system

1.The dry material dried by heating plates will be sent to the discharging side.

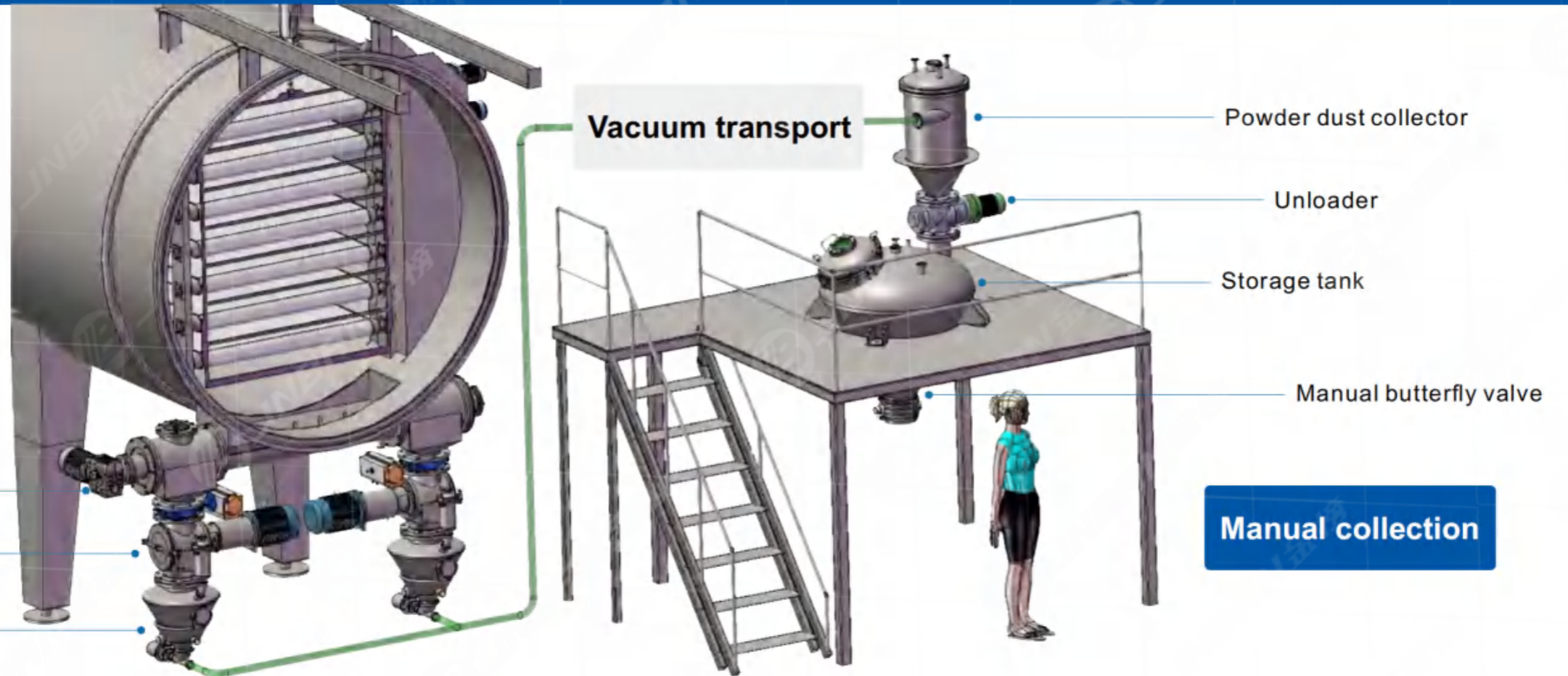
2.And It will be pulverized into powder within 100 meshes by pulverizer. (granularity controllable).

3.The powder will be stored in buffer tank for a few minutes, then it will be transported into storage tank, waiting for manual collection.

Primary coarse pulverizer

Fine pulverizer

Buffer tank



Manual collection

Each layer sets antistatic device to prevent material stick on the tracks.

It adopts bidirectional screw outlet, which comes with pre-grade whole grain.

Screw outlet has heating and drying function.

It adopts buffer switch to finish continuous discharge, the vacuum degree of buffer tank is always lower than that of mainframe, which is work out the problem of dust flying.

Process: coarse dry powder→buffer tank→vacuum feeding→fine pulverize→fine screening machine→collect materials and bag them, settle the matter at one go, continuous dust-free production.

It adopts automatic vacuum balancing technique to stably switch and discharge material.

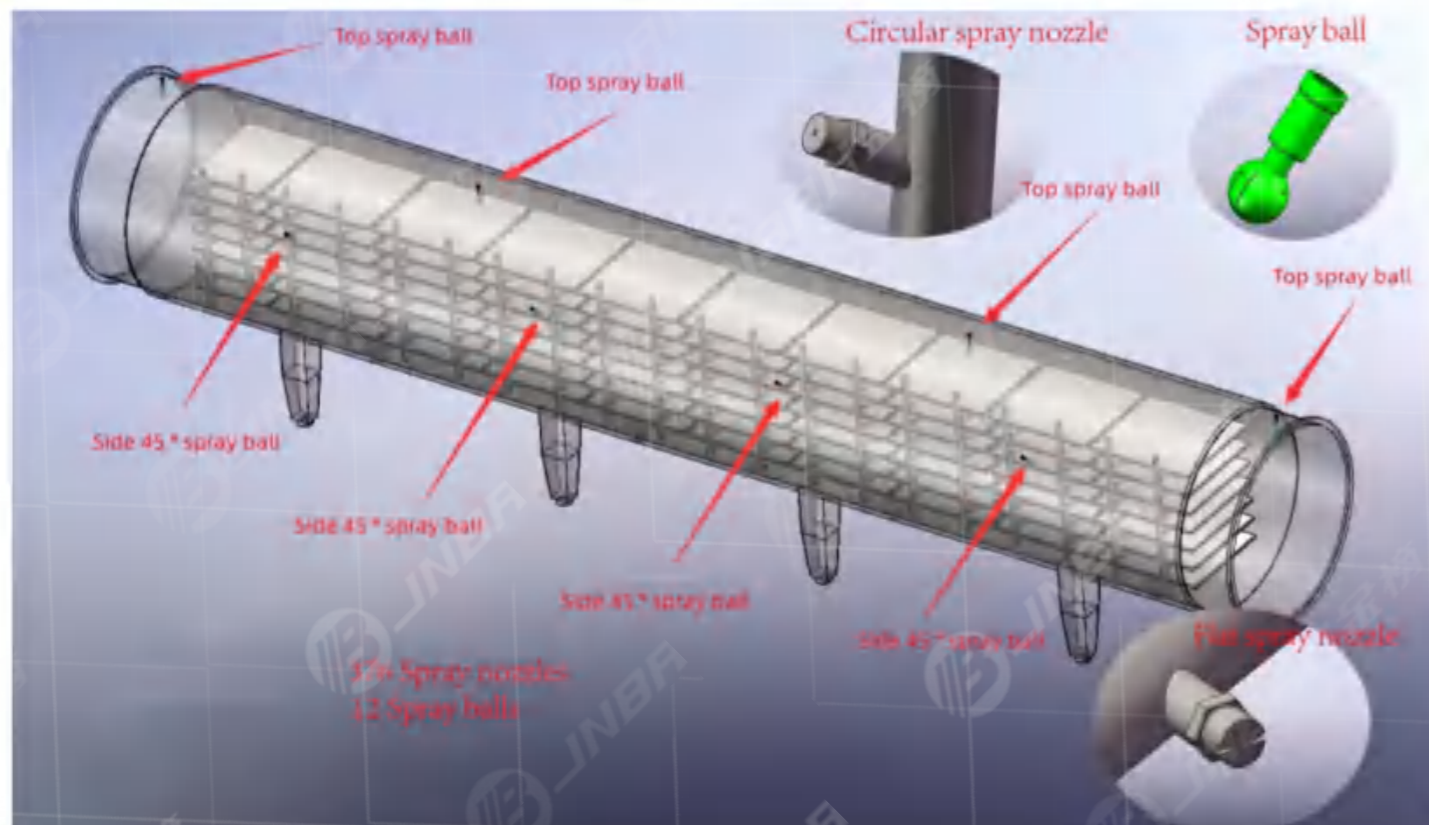
The valve in the system has stateful feedback and achieves chain.

Material collection system sets relevant operating platforms to facilitate the operation, cleaning and maintenance of the equipment.

Introduction

Discharge crushing system

- CIP online cleaning system is made up with a 5000L cleaning tank and a 300L lye dispensing tank, online cleaning contains water cleaning, lye cleaning and purified water cleaning three progresses.
- Cleaning tank adopts external circulating plate heat exchanger heating, which can satisfy relevant equipments and pipes to do mechanical and hot water cleaning, disinfection and sterilization.
- Mainframe sets two belt lifting device, which can make no dead angle cleaning to the front and back of the belt and the surface of the heating plate.
- System sets all kinds of cleaning nozzles, which is distributed in all parts of the system, to achieve cross cleaning and ensure no dead angle cleaning.
- It uses pure compressed air to blow dry the cleaning parts after cleaning, in order to prevent microbial growth.



- All the parts of the system have drying function.
- Temperature of cleaning water is 70-95 degrees, temperature control: ± 1.5 degrees. The cleaning and drying time of the whole machine does not exceed three hours.
- The installation of equipment CIP pipe in line with 3D principle.

Control system

Unit control system is three-layer control structure and two-layer network control.

Three control structure: process equipment execution layer, field control operation layer, operational management layer.

Process equipment execution layer: be make up with the I/O detection actuator which device in the unit of each unit.

Field control operation layer: be made up with the power distribution cabinet which installs on site, Internal executive appliances + Siemens S7-300 programmable logic controller (PLC) system, operation room touch screen operation.

Operational management layer: be finished by upper computer (PC industrial computer) configuration program (WINCC or configuration monitoring software).

Burdening, mainframe, Vacuum system, CIP system and Coarse crushing system controls man-machine interface are arranged on the feeding side of the main engine.

Vacuum system(contain cold water system)and CIP system can realize field control.



Vacuum belt (liquid) continuous dryer parameter

Model	Layer	Evaporation area m ²	Water evaporation kg/h	Heating temperature range °C	Vacuum range pa	Diameter mm	Length mm	Height mm	Feed moisture content %	Dry powder moisture content %	Number of discharges
BVD207	2	7	5.6-7.7	30-145	1000-5000	1200	7500	2000	20-80	0.5-5	20-120
BVD210	2	10	8-11			1200	9000	2000			
BVD320	3	20	16-22	30-145	1000-5000	1600	9000	2500	20-80	0.5-5	20-120
BVD330	3	30	24-33			1600	12000	2500			
BVD430	4	30	24-33			1900	9000	3400			
BVD435	4	35	28-38			1900	10500	3400			
BVD440	4	40	32-44	30-145	1000-5000	1900	12000	3400	20-80	0.5-5	20-120
BVD450	4	50	40-55			1900	13500	3400			
BVD455	4	55	44-60			1900	15000	3400			
BVD460	4	60	48-66			1900	16500	3400			
BVD550	5	50	40-55			2200	10500	3700			
BVD560	5	60	48-66			2200	12000	3700			
BVD565	5	65	52-71	30-145	1000-5000	2200	13500	3700	20-80	0.5-5	20-120
BVD575	5	75	60-82			2200	15000	3700			
BVD585	5	85	68-93			2200	16500	3700			
BVD650	6	50	40-55			2200	9000	3700			
BVD660	6	60	48-66			2200	10500	3700			
BVD670	6	70	56-77			2200	12000	3700			
BVD685	6	85	68-93	30-145	1000-5000	2200	13500	3700	20-80	0.5-5	20-120
BVD695	6	95	76-100			2200	15000	3700			
BVD6105	6	105	84-115			2200	16500	3700			
BVD6115	6	115	92-126			2200	18000	3700			
BVD7110	7	110	88-121			2500	15000	4000			
BVD7125	7	125	100-137			30-145	1000-5000	2500			
BVD7140	7	140	112-154	2500	18000			4000			
BVD8135	8	135	109-150	2800	15000			4500			
BVD8150	8	150	122-168	30-145	1000-5000	2800	16500	4500	20-80	0.5-5	20-120
BVD8170	8	170	136-187			2800	18000	4500			
BVD9170	9	170	137-190			3000	16500	4900			
BVD9190	9	190	152-210	30-145	1000-5000	3000	18000	4900	20-80	0.5-5	20-120
BVD10190	10	190	152-210			3000	16500	4900			
BVD10210	10	210	168-231			3000	18000	4900			

Range of application

Vacuum belt dryer is suitable for all kinds of liquid, paste material drying at medium and low temperature, especially suitable for heat sensitive, high viscosity, easy to agglomerate and other characteristics of the material. It has the advantages of lower energy consumption, lower residual amount, higher productivity, controllable drying temperature, higher safety and no damage to material composition, which can replace spray dryer, vacuum oven, lyophilizer and other dryers.

Chemical industry

Industrial additives, pesticide, emamectin benzoate, carbon disulfide, oil wax, etc.

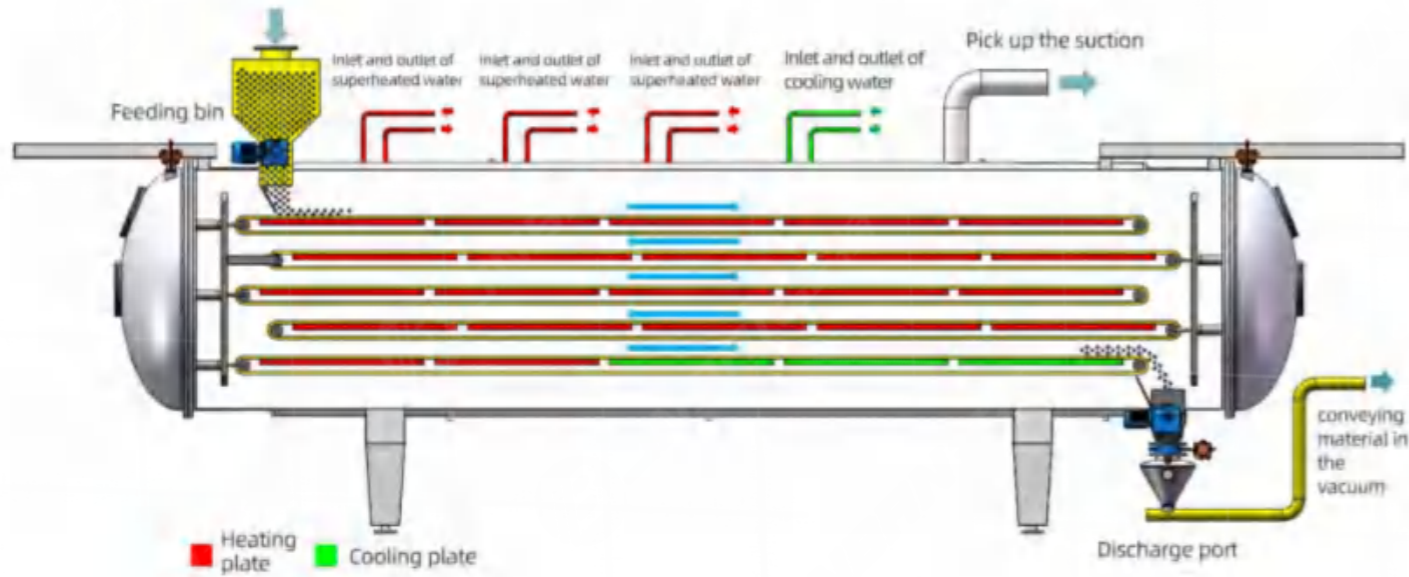
New energy industry

Liquid slurry drying of lithium iron phosphate, lithium battery adhesive, silicon carbon anode material, etc. (materials containing organic and inorganic solvents)

Vacuum Belt (solid) Continuous dryer



Comparison of vacuum low temperature belt dryer and other dryers



Range of application

Lithium hexafluorophosphate, lithium difluorosulfonimide (LiFSI), lithium fluoride (industrial grade/battery grade), lithium oxide (single/anhydrous), lithium carbonate and other lithium salts, cobalt salts such as cobalt sulfate, cobalt chloride, gallium salts such as nickel sulfate, ternary precursor, electrolyte additive, etc.

Vacuum Belt(solid)Continuous dryer parameter

Model	Exch Heat area	Drying temperature	Feed moisture content	Dry material moisture content	Heating medium	Water
JBG3-15	15m²	20-135° C (Adjustable)	10-80% (Mobility)	0.3-5% (Adjustable)	Superheated water	8-12Kg/h
JBG5-35	35m²					18-25Kg/h
JBG5-50	50m²					25-35Kg/h
JBG5-70	70					35-45Kg/h
JBG5-80	80					40-60Kg/h
JBG7-120	120m²					70-90Kg/h
JBG9-160	160m²					90-120Kg/h
JBG11-220	220					120-150Kg/h

Project name	Vacuum belt dryer	Freezer dryer	Vacuum drying oven	Spray dryer
Drying temperature	Low temperature, medium temperature	Low temperature	Medium temperature, high temperature	High temperature
Product solubility	Excellent	Excellent	General	Bad
Active ingredient preservation	Excellent	Excellent	General	Bad
Material recovery rate	More than 99%	More than 99%	More than 90%	More than 85%
Drying time	30-60 minutes	20-40 hours	10-25 hours	Quick
Heating uniformity	Excellent	Good	Bad	General
Operating costs	Low	High	Medium	High
Continuous production	Can	Can't	Can't	Can
Scope of application	Wide	General	Wide	Narrow
Cost of investment	Medium	High	Low	Low

Vacuum Belt Dryer For Liquid and Paste



Vacuum Belt Dryer For powder and particle



Favorable terms and After-sale service

Cases Dry project

Favorable terms supplied

- 1、 During guarantee period, we will regularly send maintenance personnel to the user every three months to check the equipment.
- 2、 After the warranty period, we will send maintenance personnel to the user every half a year to check the equipment, listening to the users' improved suggestions of the equipments, then organizing personnel to improve the equipment after feedback back to the company.
- 3、 At users' request, after our company received the users' telephone, we will be on the site within 24 hours for the operators' second training without money.
- 4、 After guarantee period, all spare parts will be offered at cost.
- 5、 Our company will offer the designing plan for product upgrade for life free.
- 6、 Our company has offices in each area, and long-term fixed installation and maintenance technicians. Offices reserve equipment parts at same time. This is our company's guarantee to offer in time and superior after-sale service.
- 7、 The drive bearing of deviation correction system will be promised life free and faster in the period of use.

After-sale service

- 1、 The equipments will be repaired or replaced by our company when they occur quality problems and failure without human factor. We will respond in one hour after we received user's letter and telegram. We will get personnel on the scene to handle, implement three-guarantee service and repair for free within 24 hours to major problems.
- 2、 We will offer all spare parts that damage due to quality problem or failure for free in the guarantee period. Consumable parts consumption is not at available free of charge.
- 3、 After the warranty period, the equipments occur quality problems or failure in the time of maintenance for free. Our company promises to repair. We will respond in one hour after our company receives the user's letter and telegram. We will send personnel to the site to deal with, maintenance with cost only.
- 4、 We will supply a whole equipment installation drawing, operation manual, equipment maintenance manual and 4Q file.
- 5、 We will train the user's personnel using on-site train and explain the structure and principle of the equipment according to drawing and parameter list until all operation personnel understand.



Quality is strictly controlled during machining and manufacturing. It is known that quality is the life of an enterprise and the base for its survival.



Cases

Dry project



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Cooperation with the customer



Quality is strictly controlled during machining and manufacturing. It is known that quality is the life of an enterprise and the base for its survival.