



Automated Drying Solutions

## *Belt Vacuum Continuous Dryer*

# Overview

## Overview of Belt Vacuum Continuous Dryer

### Belt Vacuum Continuous Dryer

**a**

high efficiency, low temperature, conduction type & vacuum continuous drying equipment

**b**

good operation environment, continuous import and export under vacuum

**c**

high degree of automation, low labor intensity, low energy consumption and low production cost

**d**

high recoverability of solvent and product & reduced the running cost

**e**

automatic, thorough and quick cleaning

**f**

widely used in chemical industry, medicine, food, agricultural products and Chinese medicine processing industries

# Characteristic

## Characteristics of Belt Vacuum Continuous Dryer



### GMP Standard

meeting the GMP hygienic requirements to realize drying by finishing continuous charging, discharging and grinding under vacuum condition



### Easy to Operate

high-degree automation with PLC automatic programming control



### Adjustable Parameter

optimizing temperature vacuum degree and speed of the drying process to achieve the best economic benefits



### Quality

unchanged thermal sensitivity of materials, recoverability of 95% solvent



### No Destruction of Material Property

no destruction of the crystal material, the thermal sensitive material and the oxidation of the material



### CIP Cleaning

CIP automatic online cleaning system with various cleaning methods

# Advantage

## Advantages of Belt Vacuum Continuous Dryer



### High Quality

No air contact  
Free chemical Oxidation  
No destruction of crystal  
Product yield up to 99%  
Solvent recovery 95%

### Soft Drying

Dry temperature  
No mechanical impact  
No air  
Short stay

### Economic Environment Protection

Lowest steam power consumption  
No dust, solvent  
No pollution  
Direct packaging of discharging

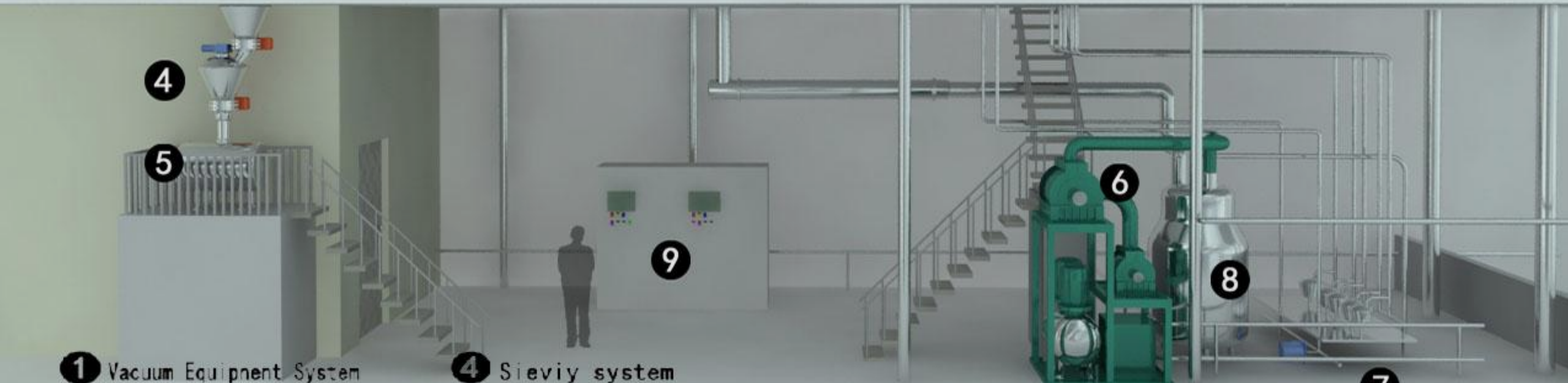
### Automatic production

PLC automatic programming control  
Automatic omnidirectional cleaning

[Click to learn more](#)

# Part

## Component of Belt Vacuum Continuous Dryer



**1** Vacuum Equipment System

**2** Feed system

**3** grindy System

**4** Sieviy system

**5** Product collection system

**6** Vacuum condensing ssystem

**7** Heating and cooling systems

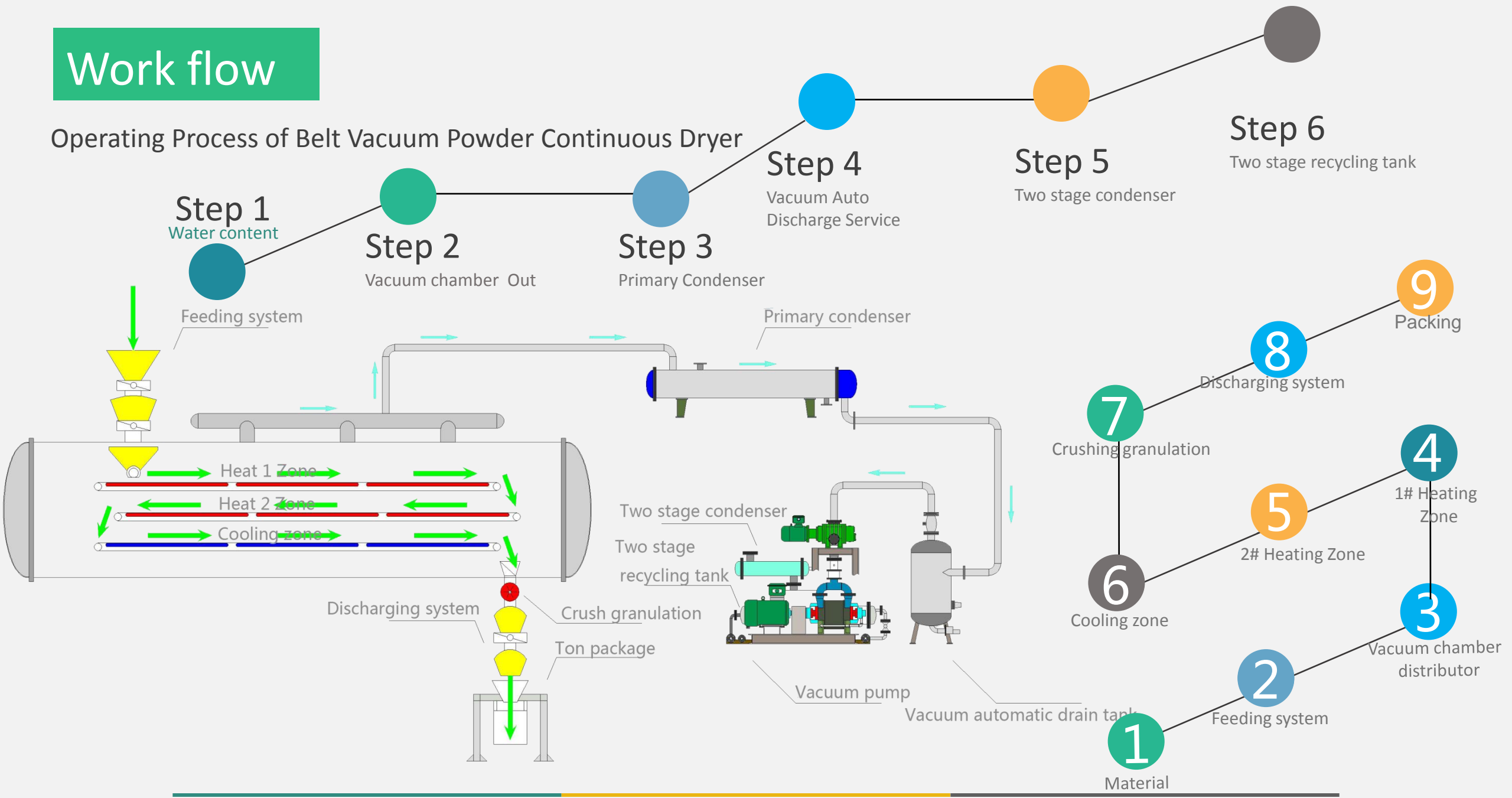
**8** CIP cleaning system

**9** Operating systems

**10** Liquid feed system

# Work flow

## Operating Process of Belt Vacuum Powder Continuous Dryer





# Application

## Applicable Scope of Belt Vacuum Powder Continuous Dryer



### Food

food additives and  
chemical raw materials  
for food



### Medicine

various kinds of  
powders, crystals,  
granules etc.



### Chemical Engineering

oxidizable, explosive,  
strongly stimulation  
and highly toxic  
materials



### And more

products containing  
various recyclable  
solvents

# Work flow

## Operating Process of Belt vacuum Liquid Continuous Dryer

Step 1  
Water content

Step 2  
Vacuum chamber Out

Step 3  
Primary condenser

Step 4  
Vacuum Auto  
Discharge device

Step 5  
Two stage condenser

Step 6  
Two stage recycling tank

9

Packing

8

Discharging system

7

Crushing granulation

4

1# Heating  
Zone

5

2# Heating Zone

6

Cooling zone

2

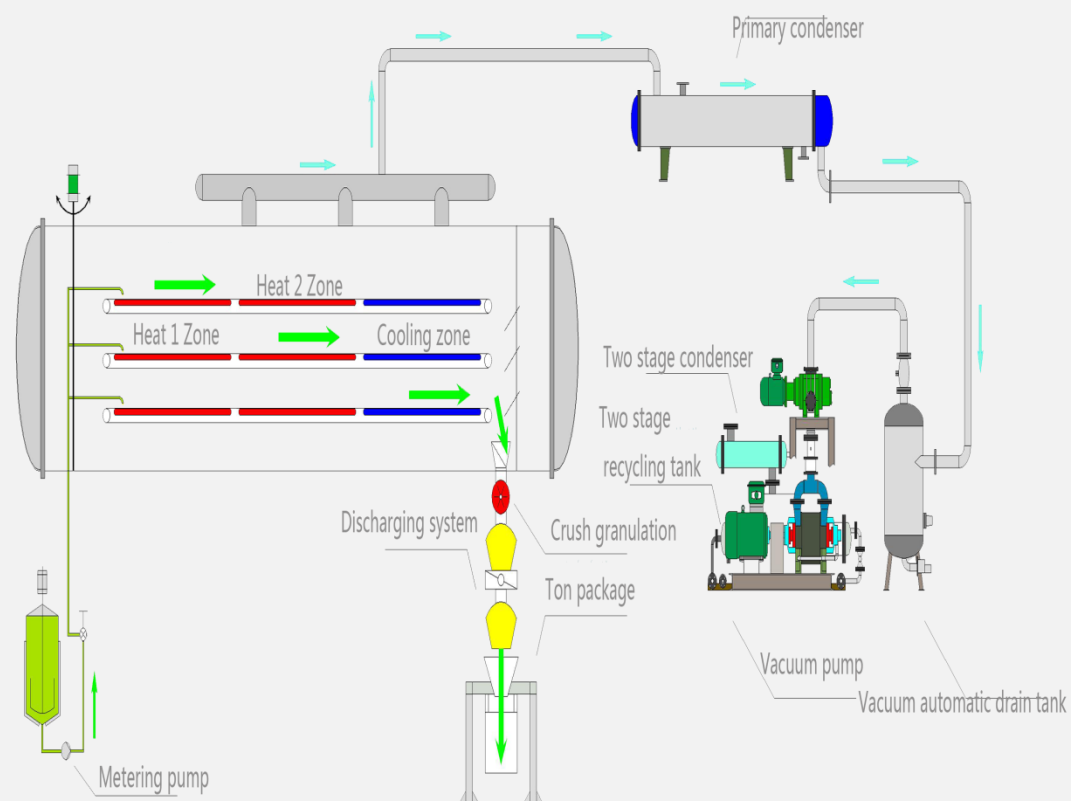
Metering Pump  
Vacuum Chamber

3

Vacuum Chamber  
Distributor

1

Material





# Application

Applicable Scope of Belt Vacuum Liquid Continuous Dryer



Instant Coffee

liquid drying of coffee



Fresh Juice

liquid drying of  
vegetables and fruit



Chinese Traditional  
Medicine Extract

High concentration,  
high viscosity extract



Plant Extract

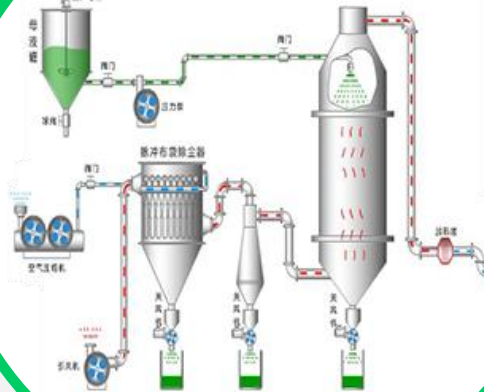
Biological preparation  
plant extract

# Contrast

## Comparison Between Spray Dryer and Belt Vacuum Continuous Dryer

### Spray Dryer

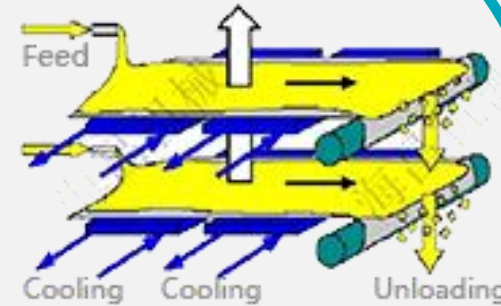
- ☐ spraying under high pressure
- ☐ sticking to the wall
- ☐ strong wind shear force
- ☐ product loss and quality damage



VS

### Belt Vacuum Continuous Dryer

- ☐ Smooth conveyer drying
- ☐ no mechanical pressure impact
- ☐ not sticky to the wall



# Automation

High Degree of Automation, Continuous and Stable Production of Equipment

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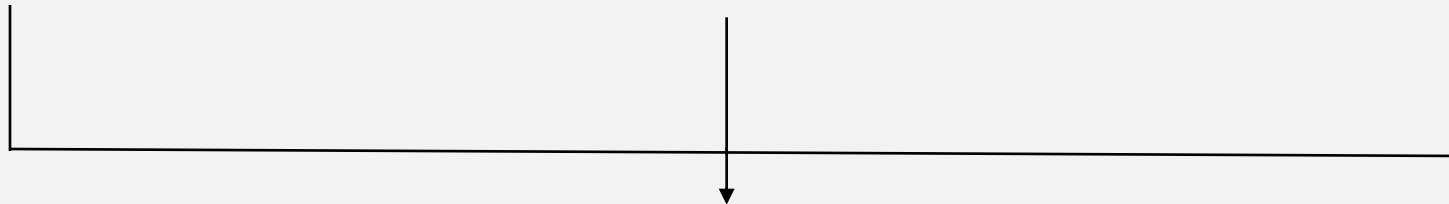
**Touch Screen**



**Remote Control**



**Intelligent Monitoring**



**Safer and More Reliable**

# Adjustable Parameter

Controlled by Parameters to Ensure Different Requirements

## Feed Control

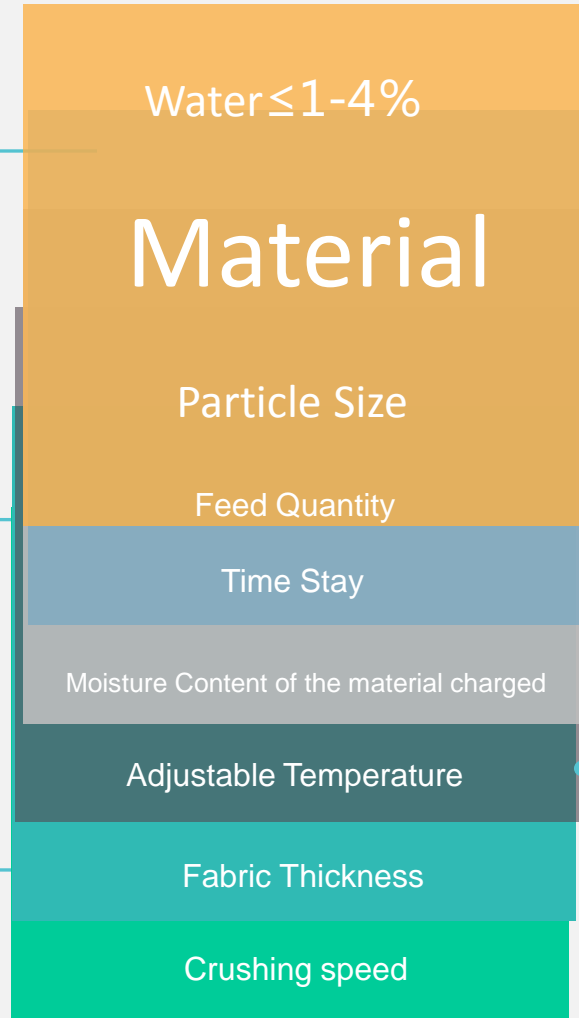
feed crushing control material particle size  
Feeding time controlled feed quantity  
Metering pump control feed rate

## Vacuum Degree (90-99)Kpa

controlling the vacuum degree in  
the warehouse to ensure the  
material moisture

## Fabric Thickness (3-30mm)

adjustable height of material  
and material thickness



## Conveyer Belt Speed(0-50Hz)

adjustable speed and thickness  
of each conveyer belt

## Heating Temperature (40-180)°C

adjustable temperature of each  
layer, heated gradient and bottom  
cooling

## Crush

adjustable grinding speed,  
controlled uniform size of the  
particles

# Selection

## Selection of Belt Vacuum Continuous Dryer for Powder

HCF Belt Vacuum Continuous Dryer										
Basic Parameters/Model	HCF6.5-3	HCF15-3	HCF30-5	HCF50-5	HCF80-5	HC100-7	HCF120-7	HCF160-7	HCF200-11	HCF220-11
Heating Area(㎡)	3	6	20	35	70	100	135	160	200	220
Water Evaporation Capacity(kg/h)	5~10	10~20	25~35	40~60	70~90	90~120	110~130	150~180	180~210	210~230
Number of Drying Bed(layer)	3	3	5	5	5	7	7	9	11	11
Drying Temperature Range(℃)	40~180									
Heating and Cooling Zone	2 Heating Zone		4 Heating Zone		6 Heating Zone		8 Heating Zone		10 Heating Zone	
	Cooling Zone		Cooling Zone		Cooling Zone		Cooling Zone		Cooling Zone	
Moisture Content of the Material Charged (%)	20~30									
Moisture Content of the Dried Charged (%)	≤ 1~4									
Discharging Form	Screwing grinding and sieving (20~200 meshes)with adjustable discharging									
Heating Media	Superheated water,vapor,conduction oil									
Equipment Dimensions(mm)	6500x1200 x2200	6500x1900 x2500	9500x1900x 2500	12000x2200 x2800	12000x2600 x3000	12500x2600 x3000	17500x260 0x3000	17500x300 0x3000	17500x3200 x3200	19500x3200 x3200
Total installed power(kw)	18	24	30	34	36	40	45	48	50	58
Operating Pressure of the cleaning system(MPa)	0.5—1.0									
Yield of Dried Product(kg/h)	30~60	60~100	100~150	150~220	200~300	250~350	300~400	350~450	400~600	500~800
Notes	1.The yield is calculated based on70%content at 90℃drying temperature with dry power containing about ≤4% moisture. In case the dried liquid is water, specific qravity of the dry power is determined to be 1. The yield will be larger if the drid liquid is solvent.									
	2. All techincal parameters are for reference only depending on the materical conditions,and our company has the right to change them without further notice.									

# Selection

## Selection of Belt Vacuum Continuous Dryer for Liquid

HCY Belt Vacuum Continuous Dryer									
Basic Parameters/Model	HCY3-2	HCY6-3	HCY20-4	HACY35-5	HCY70-6	HCY100-7	HCY135-8	HCY160-9	HCY200-10
Heating Area(㎡)	3	6	20	35	70	100	135	160	200
Cooling Area(㎡)	1.5	2.5	3.5	10	15	20	27	30	35
Water Evaporation Capacity(kg/h)	3~5	5~10	15~30	30~45	55~80	90~110	120~150	150~180	180~220
Number of Drying Bed(layer)	2	3	4	5	6	7	8	9	10
Drying Temperature Range(℃)	40~180								
Heating and Cooling Zone	2 Heating Zone		3 Heating Zone		4 Heating Zone		5 Heating Zone		
	Cooling Zone		Cooling Zone		Cooling Zone		Cooling Zone		
Moisture Content of the Material Charged (%)	20~30								
Moisture Content of the Dried Charged (%)	≦ 1~4								
Discharging Form	Screwing grinding and sieving (20~200 meshes)with adjustable discharging								
Heating Media	Superheated water,vapor,conduction oil								
Equipment Dimensions(mm)	6500×1900× 2500	7000×2000× 2500	11000×2200× 2800	12500×2200× 2800	12500×2400× 2800	17000×2600× 3000	17500×2800× 3200	18000×3200 ×3200	18500×3200× 3500
Tatal installed power(kw)	20	30	35	39	45	50	55	60	67
Operating Pressure of the cleaning system(MPa)	0.5—1.0								
Yield of Dried Product(kg/h)	3~8	8~15	15~30	30~50	50~80	90~120	120~150	150~180	180~220
Notes	①The yield is calculated based on 70% content at 90℃ drying temperature with dry power containing about ≦4% moisture, In case the dried liquid is water,specific gravity of the dry power is determined to be 1,The yield will be larger if thye dried liquid is solvent .								
	②All technical parameters are for reference only depending on the material conditions,and our company has the right to change them without further notice								



Our case

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Our case



Belt Vacuum  
Continuous Dryer



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Continuous Dryer



Belt Vacuum  
Continuous Dryer



# About Us

Wuxi Haichang Machinery Co., Ltd.



Wuxi Haichang Machinery Co., Ltd. is an enterprise specialized in manufacturing drying, crystallizing and granulating & tableting equipment for such industries as pharmacy, food, chemical engineering and and biochemistry.

# Our Products

National Leading Automated Drying Solution Supplier



Spherical Dryer



Belt Vacuum Powder  
Continuous Dryer



Belt Vacuum Liquid  
Continuous Dryer



PTFE Lining



# Customer



Part of Our Clients



# Thank You!



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