Belt Vacuum Continuous Dryer
Overview of 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

- **Adjustable Parameter**
  - optimizing temperature vacuum degree and speed of the drying process to achieve the best economic benefits

- **No Destruction of Material Property**
  - no destruction of the crystal material, the thermal sensitive material and the oxidation of the material

- **Easy to Operate**
  - high-degree automation with PLC automatic programming control

- **Quality**
  - unchanged thermal sensitivity of materials, recoverability of 95% solvent

- **CIP Cleaning**
  - CIP automatic online cleaning system with various cleaning methods

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Advantages of Belt Vacuum Continuous Dryer

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

- Dry temperature
- No mechanical impact
- No air
- Short stay

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

- PLC automatic programming control
- Automatic omnidirectional cleaning

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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 system
7. Heating and cooling systems
8. CIP cleaning system
9. Operating systems
10. Liquid feed system
Operating Process of Belt Vacuum Powder Continuous Dryer

**Step 1:** Water content
- Feeding system

**Step 2:** Vacuum chamber Out
- Vacuum chamber

**Step 3:** Primary Condenser
- Primary condenser

**Step 4:** Vacuum Auto Discharge Service
- Two stage condenser

**Step 5:** Two stage condenser
- Two stage recycling tank

**Step 6:** Two stage recycling tank
- Packing

**Step 7:** Crushing granulation
- Discharging system

**Step 8:** Discharging system
- 2# Heating Zone

**Step 9:** 2# Heating Zone
- 1# Heating Zone

**Step 10:** 1# Heating Zone
- Cooling zone

**Step 11:** Cooling zone
- Vacuum chamber distributor

**Step 12:** Vacuum chamber distributor
- Material

**Step 13:** Material
- Feeding system

**Step 14:** Feeding system
- Vacuum pump

**Step 15:** Vacuum pump
- Vacuum automatic drain tank

**Step 16:** Vacuum automatic drain tank
- Crush granulation

**Step 17:** Crush granulation
- Ton package

**Step 18:** Ton package
- Discharging system

**Step 19:** Discharging system
- 2# Heating Zone

**Step 20:** 2# Heating Zone
- Cooling zone

**Step 21:** Cooling zone
- Vacuum chamber distributor

**Step 22:** Vacuum chamber distributor
- Material

**Step 23:** Material
- Feeding system
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

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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

Step 7
Crushing granulation

Step 8
Discharging system

Step 9
Packing

Step 10
2# Heating Zone

Step 11
Cooling zone

Step 12
1# Heating Zone

Step 13
Material

Step 14
Vacuum Chamber

Step 15
Vacuum Chamber Vacuum Chamber Distributor

Step 16
Cooling zone

Step 17
Crushing system

Step 18
Discharging system

Step 19
Packing

Step 20
Two stage recycling tank

Step 21
Two stage condenser

Step 22
Primary condenser

Step 23
Vacuum cell Out

Step 24
Water content

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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

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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

Belt Vacuum Continuous Dryer
- Smooth conveyer drying
- no mechanical pressure impact
- not sticky to the wall

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Automation

High Degree of Automation, Continuous and Stable Production of Equipment

- Touch Screen
- Remote Control
- Intelligent Monitoring

Safer and More Reliable

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Controlled by Parameters to Ensure Different Requirements

**Adjustable Parameter**

**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

**Material**
- Water ≤ 1-4%
- Particle Size
- Feed Quantity
- Time Stay
- Moisture Content of the material charged
- Adjustable Temperature
- Fabric Thickness
- Crushing speed

**Conveyor Belt Speed (0-50Hz)**
- Adjustable speed and thickness of each conveyor belt

**Heating Temperature (40-180)℃**
- Adjustable temperature of each layer, heated gradient and bottom cooling

**Crush**
- Adjustable grinding speed, controlled uniform size of the particles

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## Selection of Belt Vacuum Continuous Dryer for Powder

<table>
<thead>
<tr>
<th>Basic Parameters/Model</th>
<th>HCF6.5-3</th>
<th>HCF15-3</th>
<th>HCF30-5</th>
<th>HCF50-5</th>
<th>HCF80-5</th>
<th>HCF100-7</th>
<th>HCF120-7</th>
<th>HCF160-7</th>
<th>HCF200-11</th>
<th>HCF220-11</th>
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</thead>
<tbody>
<tr>
<td>Heating Area (m²)</td>
<td>3</td>
<td>6</td>
<td>20</td>
<td>35</td>
<td>70</td>
<td>100</td>
<td>135</td>
<td>160</td>
<td>200</td>
<td>220</td>
</tr>
<tr>
<td>Water Evaporation Capacity (kg/h)</td>
<td>5~10</td>
<td>10~20</td>
<td>25~35</td>
<td>40~60</td>
<td>70~90</td>
<td>90~120</td>
<td>110~130</td>
<td>150~180</td>
<td>180~210</td>
<td>210~230</td>
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<tr>
<td>Number of Drying Bed (layer)</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
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<td>7</td>
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<td>9</td>
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<tr>
<td>Drying Temperature Range (°C)</td>
<td>40~180</td>
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</tr>
<tr>
<td>Heating and Cooling Zone</td>
<td>2 Heating Zone</td>
<td>4 Heating Zone</td>
<td>6 Heating Zone</td>
<td>8 Heating Zone</td>
<td>10 Heating Zone</td>
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<tr>
<td>Cooling Zone</td>
<td>Cooling Zone</td>
<td>Cooling Zone</td>
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<tr>
<td>Moisture Content of the Material Charged (%)</td>
<td>20~30</td>
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<td>Moisture Content of the Dried Charged (%)</td>
<td>≤1~4</td>
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<tr>
<td>Discharging Form</td>
<td>Screwing grinding and sieving (20~200 meshes) with adjustable discharging</td>
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<tr>
<td>Heating Media</td>
<td>Superheated water, vapor, conduction oil</td>
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<tr>
<td>Equipment Dimensions (mm)</td>
<td>6500x1200x2200</td>
<td>6500x1900x2500</td>
<td>9500x1900x2500</td>
<td>12000x2200x2800</td>
<td>12000x2600x3000</td>
<td>12500x2600x3000</td>
<td>17500x2600x3000</td>
<td>17500x3000x3000</td>
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<td>19500x3200x3200</td>
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<tr>
<td>Total Installed Power (kw)</td>
<td>18</td>
<td>24</td>
<td>30</td>
<td>34</td>
<td>36</td>
<td>40</td>
<td>45</td>
<td>48</td>
<td>50</td>
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<tr>
<td>Operating Pressure of the cleaning system (MPa)</td>
<td>0.5~1.0</td>
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<tr>
<td>Yield of Dried Product (kg/h)</td>
<td>30~60</td>
<td>60~100</td>
<td>100~150</td>
<td>150~220</td>
<td>200~300</td>
<td>250~350</td>
<td>300~400</td>
<td>350~450</td>
<td>400~600</td>
<td>500~800</td>
</tr>
</tbody>
</table>

### Notes

1. The yield is calculated based on 70% content at 90°C drying temperature with dry power containing about ≤4% moisture. In case the dried liquid is water, specific gravity of the dry powder is determined to be 1. The yield will be larger if the dried liquid is solvent.

2. All technical parameters are for reference only depending on the material conditions, and our company has the right to change them without further notice.

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## Selection of Belt Vacuum Continuous Dryer for Liquid

### HCY Belt Vacuum Continuous Dryer

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<th>Basic Parameters/Model</th>
<th>HCY3-2</th>
<th>HCY6-3</th>
<th>HCY20-4</th>
<th>HCY35-5</th>
<th>HCY70-6</th>
<th>HCY100-7</th>
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<td>Heating Area (㎡)</td>
<td>3</td>
<td>6</td>
<td>20</td>
<td>35</td>
<td>70</td>
<td>100</td>
<td>135</td>
<td>160</td>
<td>200</td>
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<tr>
<td>Cooling Area (㎡)</td>
<td>1.5</td>
<td>2.5</td>
<td>3.5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>27</td>
<td>30</td>
<td>35</td>
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<td>Water Evaporation Capacity (kg/h)</td>
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<td>30~45</td>
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<td>2 Heating Zone</td>
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<td>5 Heating Zone</td>
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<td>35</td>
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<td>45</td>
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<td>60</td>
<td>67</td>
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<td>3~8</td>
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Our case

Belt Vacuum Continuous Dryer

Belt Vacuum 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 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

Customer First,
Part customers

Haichang Machinery
Thank You!

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