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# Heat Pump Dryer Machine for Food and Vegetables



## **Heat pump drying brief introduction**

The water content of most of fruits and vegetables is higher than 80%, which limits their shelf-life resulting in a lot of losses during the peak seasons without cold storage is being practiced.

Dehydrated vegetables and fruits by drying are more acceptable to consumers due to their nutritional value as suppliers of vitamins, minerals, fiber and low fat.

In the process of drying, heat is required to evaporate moisture from the product and a flow of air to carry away the evaporated moisture, making drying a high energy consuming operation.

Drying is an energy intensive operation. Due to the increasing prices of fossils and electricity, green energy saving and energy efficient dryer becomes very important.

## **What is a heat pump dryer?**

Heat pump is a device that transfers heat from a colder area to a hotter area.

Heat pump drying has the ability to recover the latent and sensible heat by condensing moisture from the drying air. The recovered heat is recycled back to the dryer through heating of the dehumidified drying air hence the energy efficiency is increased substantially as a result of heat recovery which otherwise is lost to the atmosphere in conventional dryers . This enables drying at lower temperatures, lower cost and operation even under humid ambient conditions.

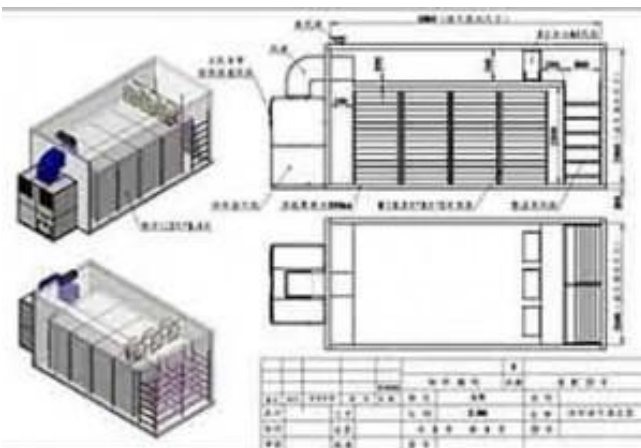


**Heat pump dryer application**

Drying vegetables like Radish, lettuce, pumpkin, carrots, spinach, cassava etc.

Drying fruits like Apple, lemon, mango slices, dried longans etc.

Drying meats like fish, Sausage, ham etc.



**Heat pump dryer feature:**

Heat pump drying is suitable to be applied in any convection dryer.

Heat pump can deliver more energy as heat than the electrical energy it consumes. It adopt air to air heat exchanger dehumidify and recovery waste heat at the same time, by means of close dehumidify combine hot air circulating drying process, energy cost saving is more than 70%.

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Heat pump is special suitable to dry sensitive materials like fruits and vegetable in accordance with settled different drying curve

Heat pump drying is a low temperature drying process, the heat pump dryer can control the drying chamber temperature between 10-75°C.

Heat pump drying technology is environmentally friendly in that gases and fumes are not given off into the atmosphere at the drying site

**Heat pump drying machine limitations:**

Dryers that require large amounts of drying air e.g. flash or spray dryers are not suited for heat pump operation.

Initial capital cost may be high due to many refrigerant components.

**Drying and dehumidification heat pump dryer technical data:**

Specification	5HP	6HP	10HP	12HP
Heating capacity	17.7 Kw	21.7 Kw	37.5 Kw	41.2 Kw
Dehumidifying capacity	15 kg/h	18 kg/h	35 kg/h	42 kg/h
Air flow	8000-13500 m <sup>3</sup> /h	8000-13500 m <sup>3</sup> /h	15000-22000 m <sup>3</sup> /h	17000-25000 m <sup>3</sup> /h
Applicable dryer oven	10~25 m <sup>3</sup>	20~30 m <sup>3</sup>	25~40 m <sup>3</sup>	30~45 m <sup>3</sup>

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