HelloRiver

SMART CONTROL DRYING MACHINE

ZHUHAI HELLO RIVER DRYING TECHNOLOGY CO.,LTD.

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Smart Control Drying Solution
http://www.jaydry.com

AIR SOURCE HEAT PUMP DRYING TECHNOLOGY
ENERGY SAVING
SMART CONTROL
COOLING AND HEATING FUNCTION
ENVIRONMENTAL PROTECTION

ABOUT HELLO RIVER

Zhuhai Hello River Drying Technology Co., Ltd(Hello River) has been devoting to the Research & Application of Drying Technology in the field of agriculture product and industrial material drying process for more than 10 years. Nowadays HelloRiver grows into a famous heat pump drying machine manufacturer and global supplier for the total drying solution. We are the leading company in the field of commercial & industrial heat pump dryers, food dehydrators and food drying rooms, conveyor belt dryer both single layer and muti layer and belt type sludge dryer in China.

HelloRiver set up the factory which cover 5,000 square meters and with monthly output of 2,000 heat pump drying machines. We have the first class production line and advanced simulation test facilities climate laboratory to safeguard the product quality can meet global requirement.

The innovative products with original technology of Hello River, such as Low Temperature Sludge Dryer, Dehumidification Heat Pump Unit and Dryer for Food & Medicinal Materials, have been awarded with Many National Patents, and successfully applied in many field all over the world. Our rapidly expanding our market include China,Southeast Asia, Africa, South America and other countries. Hello River Products widely used in various industries drying, agriculture product drying, pet food drying, hot water drying, tobacco leaf dryer and marine fish drying, and Sludge dryer with low temperature technology.

The purpose of HelloRiver is "High Efficiency, Sincerity, Professional", adherence to the "credibility first, customer first" sales philosophy to achieve a good performance and contribute to society.

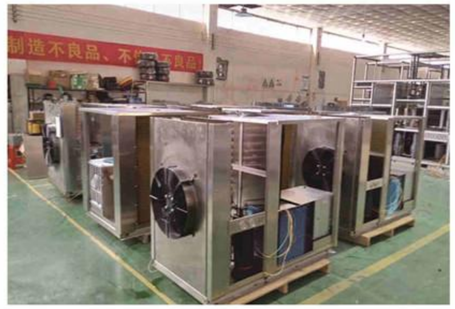
CONTENTS

FACTORY AND ITS FACLILTY

HelloRiver have the leading heat pump dryer factory in South China, which cover more than 10,000 square meter.Our special facility to maintain product quality include the Automatic On Line Detecting System, Airflow Numerical Simulation and Optimization on Enthalpy Potential Method Laboratory. All production organization activities are strictly follow up according to the International Standard.

WORKSHOP

Our factory dedicated research and exploration in the field of heat pump drying to create first-class quality.

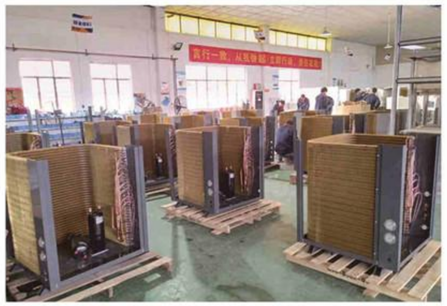


OUR EMPLOYEES

Focus on Dedication, Use First-class Technology to Create First-class Quality

R&D Center

Advanced technology R&D team and experienced professional team have accumulated more than ten years of industrial technology experience.



SEMI-FINISHED PRODUCT TRANSFER ZONE

Product 100% quality inspection, quality first, excellent service!

What It is Heatpump Dryer

Heat pump dryer is a kind of heating device. The high temperature heat pump dryer work basic on the inverse Kano principle to absorb heat from the surrounding environment and transfer it to drying chamber or drying area. It is mainly used in the drying and dehydration process of food, medicinal materials, wood, agricultural products, industrial products, etc.

Working principle

The high temperature heat pump drying unit mainly consists of four parts: fin type evaporator (external machine), compressor, fin type condenser (internal machine) and expansion valve. By making coolant continuously complete the thermal cycle process of evaporation (absorbing heat from outdoor environment) ,compression,condensation (releasing heat in drying chamber), throttling and re-evaporation. The heat in external low temperature environment can be obtained and transfer to drying room. The refrigerant circulates in the system under the action of compressor. In the compressor, it completes the process of gaseous pressurization and heating (temperature can up to 100 C). It enters the internal machine and releases high-temperature heat to heat the air in the drying room. At the same time, it is cooled and converted into liquid. When it runs to the external machine, the liquid quickly absorbs heat and evaporates into gaseous again. At the same time, the temperature can drop to - 20 C to - 30 C, then the air around the heat absorber will be contiuously transfer the heat to the refrigerant.

The working principle of heat pump dryer is to use a small amount of electricity to drive the compressor according to the principle of reverse Carnot cycle. The high-pressure liquid working coolant evaporates into gaseous state in the evaporator after the expansion valve, and absorbs a large amount of heat energy in the air. The gaseous coolant is compressed into high-temperature and high-pressure gas by the compressor, and then goes into the condenser to release heat and heat the air in the drying chamber, so it continuously circulates and heats up. The air in drying room can be heated to 75 Celsius Degree. In such process, one copy of the energy (electricity) is consumed, and three copy of the energy (heat) is absorbed and transferred from the ambient air to the drying room, which saves two-thirds of the energy compared with the electric heating dryer.

Heat pump dryer application range

Drying Marine Fish

The heat pump dryer can generate both Hot air or Cool Air to dry different fish.In some cases, it need stimulate the cool and dry weather to dry marine fish with lots of fat. And the high temperature sensitive fish have to be dry by cool air. It can dry Sea Cucumber,Abalone,Cat Fish, Cod Fish, Salmon, Squid Fish, Cuttle Fish, Fish Maws, Perch fish, Conch Slice, African Crucian, Anchovy Fish, Smoked Fish and Shrimp.

Drying Cured Meat.

The heat pump dryer can dry all kinds of cured meat like Sausage, Ham, Dried Pork, Beef Jerky,Bacon,Salami,Dried Chicken, Pet food and any other kinds of Preserve Meat.

Drying Fruit

The heat pump dryer is prefect drying machine for fruit such as Mango Slice, Date, Plum, Lemon, Raisin, Longan, Litchi,Blue Berry, Mulberry, Apple Slice, Persimmon, Kiwi Slice, Papaya, Pitaya fruit and etc.

Drying Mushroom

The mushroom can be extend its sales period and added its sales value by drying into dried ones using heat pump dryer. The heat pump drying machine can dry Shitake,Enokitake,Shimeji, Wood Ear, Fungus, Straw Mushroom and Mushroom of Tea.

Drying Nuts.

The heat pump dryer almost can dry all kinds of nuts in the world like Walnut, Almond, Hazelnut, Cashew,Moringa Seed,Camellia Oil Seed,Peanut, Pistachio, Apricots, Pine Nut, Macadamia, Chestnut and etc.

Heat pump dryer application range

Drying Herb and Agriculture Product.

The heat pump dryer is ideal drying solution basic on its drying cost advantage compared with eletric heater. It can dry herb products with very good drying cost including Moringa Leaf, Vegetable, Ginseng, Ginger, Goji Berry, Yam, Rose, Black Tea, White Tea Product, Puer Tea, Black Pepper, Red Chilli, Cassava, Starch, Pitaya flower and most of kinds of Herb.

Drying Tobacco

Nobody can ignore the widly application of heat pump dryer in the tobacco leaf drying process. Now it is the time to abandon the drying oven basic on coal burning which generationg black and thick smoke everyday.

Drying Food.

Noodle, Rice Noodle,Pet Food, Gelatin, Bone and Bone Residue.

The drying application in Industrial Field.

The heat pump dryer can also dry many industrial material like Inscene Stick, Mosquito Incense,Wood,Paper Tube,Paint Drying,Water-based Paint Drying.

what is helloriver dryer advantage

1. Energy Saving & Environmental Protection
Adopt close dehumidify and hot air ciculating drying type, saving operation cost, and without any waste gas and waste heat pollution and low loise.

2. Running Stable and Operating Easily
PLC+Touch Screen, running stable, operating easily; Adopt PLC control, can setting different drying curve, suitable for drying different materials.

3.Second Waste Heat Recovery Technology
Adopt air to air heat exchanger dehumidify and recovery waste heat at the same time, saving energy more than 70%.

4. Exact Control Tempearture and Humidity
According to the different material setting different drying curve, the heat pump dryer can control the drying chamber temperature between 10-75 Celsius Degree.

5. Recovery Volatilized Component.
Some kinds of material contain volatilized component, in drying process, hot and wet air will become condenser water then drain, collect the condenser water so that collect volatilized component.

Horizontal blowing type single dryer

MODEL		HRD03S	HRD06S	HRD10S	HRD12S	HRD15S
DRYING CHAMBER SIZE	MM	2.2M*3.5M*2.2M	3M*6M*2.2M	3M*7M*2.2M	3M*7M*2.2M	3M*8M*2.2M
POWER INPUT	KW	2.8	5.2	9.3	11.2	14.8
POWER SUPPLY	V/PH/HZ	2200V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ
RATED CURRENT	A	5.5	10.8	18.5	22.5	29.6
HEATING CAPACITY	KW	10.5	21	35	42	45
COOLING CAPACITY	KW	7.8	18	25	32	35
DEHUMIDIFY	L/H	12	25	42	50	60
MAX. TEMPERATURE	℃	75	75	75	75	75
WORKING CONDITION	℃	0-43	0-43	0-43	0-43	0-43
ELECTRIC SHOCK PROTECION GRADE	GRADE	Class I	Class I	Class I	Class I	Class I
NOISE	dB(A)	≦75db(A)	≦75db(A)	≦75db(A)	≦75db(A)	≦75
POWER CONSUPTION/H	KW	2.8	5.2	9.3	11.2	14.8
ELECTRIC HEATER	KW	6	9	12	12	12
BLOWING TYPE	\	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360
DIMENSION OF DRYER	mm	1675*860*1280	1760*1060*1280	2120*1356*1590	2120*1356*1590	2160*1500*1608
WEIGHT	KG	180	285	300	500	550

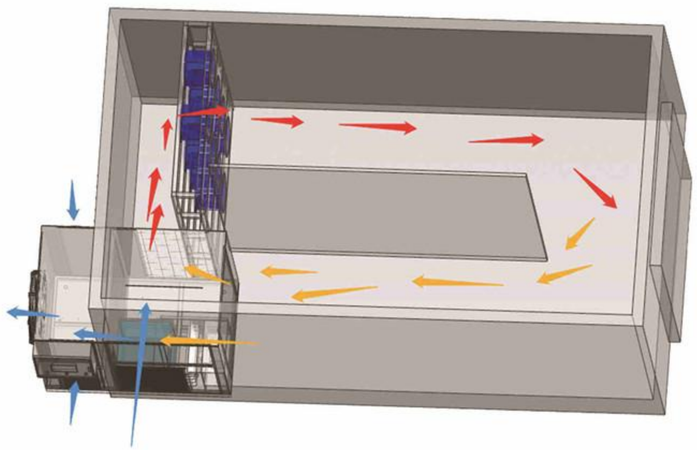
Horizontal blowing type double dryer

MODEL		HRD03S(*2)	HRD06S(*2)	HRD10S(*2)	HRD12S(*2)	HRD15S(*2)
DRYING CHAMBER SIZE	MM	3M*6M*2.2M	3M*8M*2.2M	4M*11M*2.2M	4M*11M*2.2M	4.6M*11M*2.2M
POWER INPUT	KW	5.6	10.4	18.6	22.4	29.6
POWER SUPPLY	V/PH/HZ	2200V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ
RATED CURRENT	A	11	21.6	37	45	59.2
HEATING CAPACITY	KW	21	42	70	84	90
COOLING CAPACITY	KW	15.6	36	50	64	70
DEHUMIDIFY	L/H	24	50	84	100	120
MAX. TEMPERATURE	℃	75	75	75	75	75
WORKING CONDITION	℃	0-43	0-43	0-43	0-43	0-43
ELECTRIC SHOCK PROTECION GRADE	GRADE	Class I	Class I	Class I	Class I	Class I
NOISE	dB(A)	≦75db(A)	≦75db(A)	≦75db(A)	≦75db(A)	≦75
POWER CONSUPTION/H	KW	5.6	10.4	18.6	22.4	29.6
ELECTRIC HEATER	KW	12	18	24	24	24
BLOWING TYPE	\	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360	HORIZONTAL BLOWING 360
DIMENSION OF DRYER	mm	1675*860*1280	1760*1060*1280	2120*1356*1590	2120*1356*1590	2160*1500*1608
WEIGHT	KG	180*2	285*2	300*2	500*2	550*2

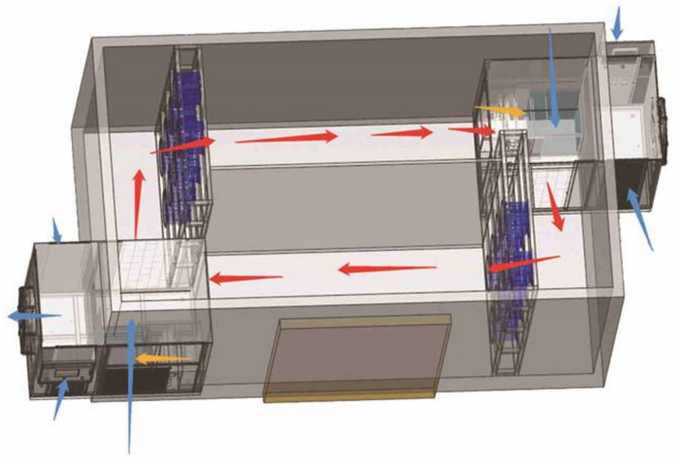
Top blowing type

MODEL		HRD06T	HRD10T	HRD12T	HRD15T
DRYING CHAMBER SIZE	MM	3M*6M*2.2M	3M*7M*2.2M	3M*7M*2.2M	3M*8M*2.2M
POWER INPUT	KW	5.2	9.3	11.2	14.8
POWER SUPPLY	V/PH/HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ	380V/3PHRASE/50HZ
RATED CURRENT	A	10.8	18.5	22.5	29.6
HEATING CAPACITY	KW	21	35	42	45
COOLING CAPACITY	KW	18	25	32	35
DEHUMIDIFY	L/H	25	42	50	60
MAX. TEMPERATURE	℃	75	75	75	75
WORKING CONDITION	℃	0-43	0-43	0-43	0-43
ELECTRIC SHOCK PROTECION GRADE	GRADE	Class I	Class I	Class I	Class I
NOISE	dB(A)	≦75db(A)	≦75db(A)	≦75db(A)	≦75
POWER CONSUPTION/H	KW	5.2	9.3	11.2	14.8
ELECTRIC HEATER	KW	9	12	12	12
BLOWING TYPE	\	TOP BLOWING	TOP BLOWING	TOP BLOWING	TOP BLOWING
DIMENSION OF DRYER	mm	1790*1060*1660	2180*1360*1990	2180*1360*19900	2160*1500*1990
WEIGHT	KG	285	300	500	550

Horizontal Blow Type

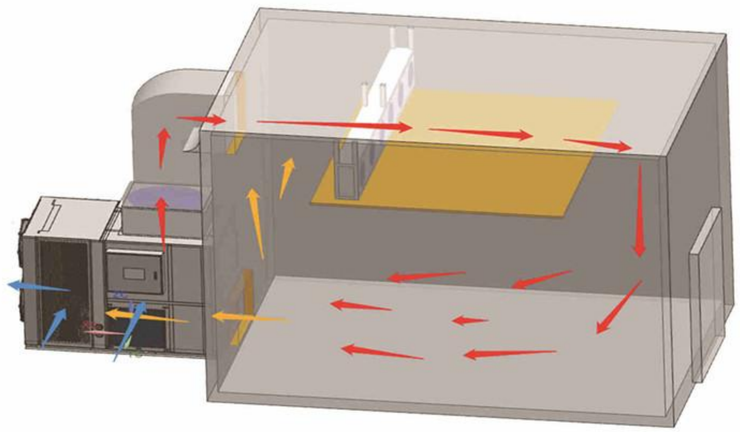


Single Dryer

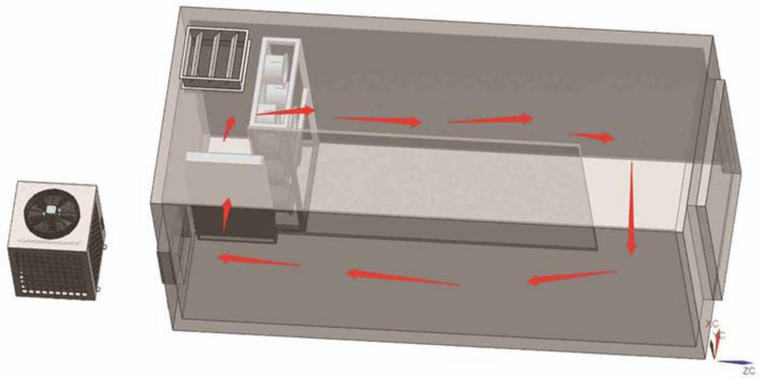


Double Dryer

Top Blowing Type

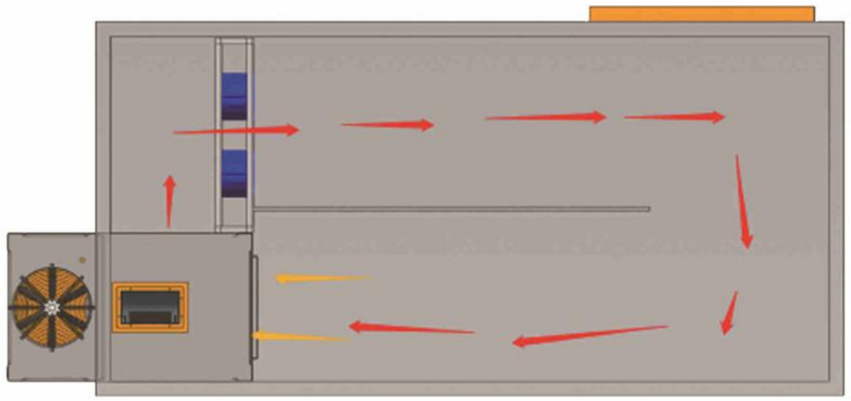


Single Dryer

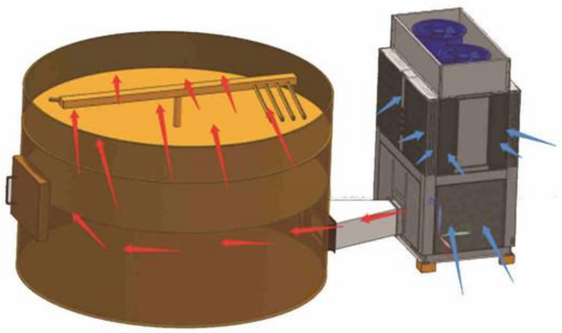


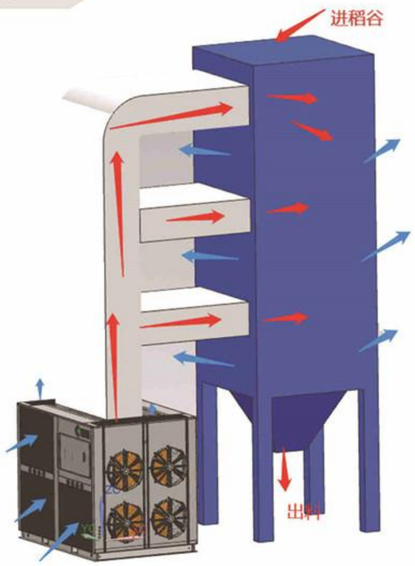
Split Type Drying Machine

Marine Fish Dryer



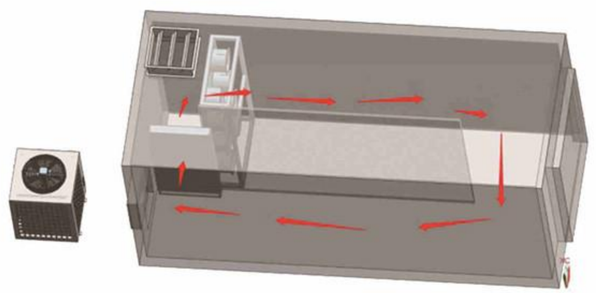
Constant Heating Dryer

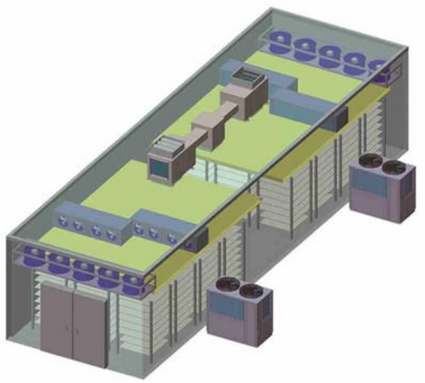




SPLIT TYPE MODEL

MODEL		HRD15SPD
HEATING CAPACITY	KW	35
RATED POWER	KW	11.8
RATED CURRENT	A	10.8
MAX. POWER	KW	15
MAX. CURRENT	A	30
MAX. TEMPERATURE	℃	75
WORKING CONDITION	℃	0—43
ELECTRIC SHOCK PROTECTION	TYPE	1
LEVEL OF PROTECTION	IPX4	IPX4
NOISE	Db(A)	≤65
DIMENSION	mm	1545×840×1380
MAX. DISCHARGE PRESSURE	MPa	3.0MPa



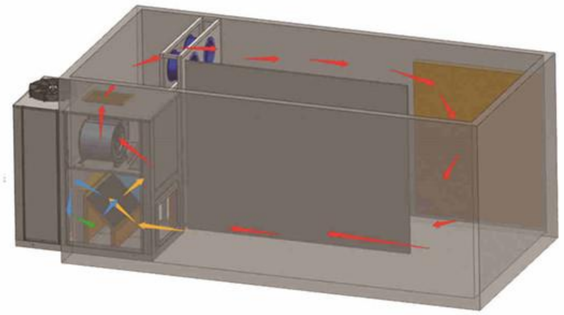


DRYING CHAMBER SIZE

MODEL	DRYER QUANTITY	DRYING CHAMBER SIZE(METER)	FAN MODEL	FAN QUANTITY
\	PCS	WIDTH*LENGTH*HEIGHT	RATED POWER	PCS.
HRD03S	1	2.2M*3.5M*2.2M	250W	6
HRD03S	2	3M*7M*2.2M	250W	12
HRD06S	1	3M*6M*2.2M	250W	12
HRD06S	2	3M*8M*2.2M	250W	24
HRD12S	1	3M*7M*2.2M	550W	9
HRD12S	2	4M*11M*2.3M	550W	18
HRD15S	1	4.6M*6.5M*2.3M	750W	9
HRD15S	2	4.6M*11M*2.3M	750W	18

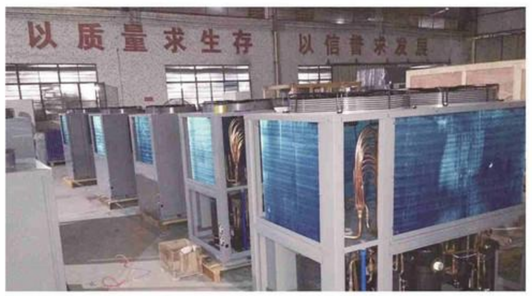
MARINE FISH DRYER

MODEL		HRD-07S-FD	HRD-10S-FD	HRD-12S-FD	HRD-15S-FD
DEHUMIDIFY	L/H	25	35.5	42.5	45
RATED POWER	KW	8	12	13	16
VOLTAGE/FREQUENCY	V/HZ	380V/50HZ	380V/50HZ	380V/50HZ	380V/50HZ
MAX.HOT AIR TEMPERATURE	℃	70	70	70	70
ENVIRONMENT TEMPEARTURE	℃	NO.LIMIT	NO.LIMIT	NO.LIMIT	NO.LIMIT
ANTI ELECTRIC SHOCK RATE	TYPE	I	I	I	I
Noise	Db(A)	≤60	≤60	≤60	≤60
BLOWING AIR QUANTITY	m3/h	3000-6000	6000-8500	6000-8500	8000-10000
AIR INTAKE	mm	393*221	430*364	430*364	430*364
AIR RETURN	mm	710*505	740*733.5	1317*615	1317*615
Dimension	mm	1630×984×1685	1750x984x1960	1870×1680×1785	1870×1680×1785
Max.Discharge Pressure	MPa	≤3.0	≤3.0	≤3.0	≤3.0
Weight	KG	280	480	480	480



CONSTANT HEATING DRYER

MODEL		HR30HPD-DH
POWER INPUT	KW	35.2
POWER SUPPLY	V/PH/HZ	380V/3PHRASE/50HZ
RATED CURRENT	A	70.4
HEATING CAPACITY	KW	103
MAX. TEMPERATURE	℃	75
WIND QUANTITY	CBM/H	5712-10562
WORKING CONDITION	℃	0-43
PROTECTION DEGREE	NULL	IPX4
ELECTRIC SHOCK PROTECION GRADE	GRADE	I
NOISE	dB(A)	≦75
POWER CONSUPTION/H	KW	35.2
DIMENSION OF DRYER	mm	1830*1270*2830
REFRIGERANT CHARGE	G	4200*4
WEIGHT	KG	1000KG
MAXIMUM EXHAUST PRESSURE	Mpa	≦3.0Mpa
MAXIMUM INSPIRATORY PRESSURE	Mpa	≦0.75Mpa



Marine Fish Dryer

How the Mrine Fish Dryer Work?

a. The host of fish drying machine is the air energy heat pump, which adopts the inverse Carnot principle,then draws heat from the surrounding environment and transfers it to the dried material.

b. The fish drying machine is mainly resistant to temperatures between 20-75℃. We suggest dry the small fish with high temperature and the big and faty fish shall be dried under cool and dry air.

c. This fish drying machine will be controlled by touch screen controller, and the temperature can be adjusted.

HelloRiver Marine fish dryer designed for small fish,big and faty fish, heat source heat pump drying, efficient dehumidification system timely removal of moisture in the drying room; the whole process of drying computer monitoring, accurate control of drying temperature; The optimal layout of the air duct ensures that the temperature is uniform in each position of the drying room.

For the big and faty fish,the HelloRiver Drying system try to stimulate the cool and dry air in the winter to achieve good shape and taste of dryied fish, and to avoid the fat coming out for the fish body.

Drying Sausage

The cured foods is involved in many varieties such as bacon, sausage, smoked fish, dried rib chops, beef jerkey, dried ducks, preserved eggs and etc. A sausage is very common in China and other region of South Asia, even western world and Africa Country. A sausage is formed in a casing made from small intestine of the pig and stuffed with pork, compressed, dehydarted and dried. Quality of Sausages is not noly left to its accessories but also the drying ahd moisture-removing process. The curing process needs to remove moisture, keep its original color, flavor, taste and shape, and to ensure that it neither go bad, nor mildew nor ferment its shelf-life. All mentioned above are closely linked to drying and moisture removal.

How To Dry Sausage with HelloRiver Dryer

1. Drying at a high temperature: Dry it at 65-68 Celsius Degree for 3-4 Hours to let materials ferment to keep them tasty.

2. Dry at slow spped: Hold the temperature at 50-55 Celsius Degree and Humidity at 45% for 4-5 Hours to form color and to compress and shape the casing. In this stage, the casing turns fresh red from ligh red on a gradual basis, and start to shrink. Note that it would be better to use cold air and hot air at turn to prevent the casing from getting hard.

3. Dry at rapid speed. The tempearature is key to this stage. It is necessary to increase the temperature to 50-60 Celsius Degree and to hold the relative humidity at 38% to a accelerate drying. This stage lasts 10-12 Hours. The

Shrimp Drying

As well known marine products, dried shrimps have high nutritive values. The way to cured shrimp is involved in clearing, boiling, drying, shelling, and packaging. Among them ,drying and shelling are the most important process. The method of drying shrimps in the sun has not been applicable to production at large scale. Most enterprises have adopted professional shrimp dryers basic on heat pump drying technology.

How to Drying Shrimps with HelloRiver Dryer

1. Steaming: Steaming or boiling shrimps in clear water is key to the curing process. Steam Fresh Shrimp for 10 minutes until they are easy to shell and the color to turn red from bluish white.

2. Drying: Shell the steamed shrimps, put them on the plate or rack oneven basis, and drying them at 50-65 Celsius until the moisture content is reduced to 18%.

3. Inspection: Sort out the dried Shrimps into groups and revmove other things.

4. Measurement and packaging: Place them into the packing bags based on measurement after inspection.

Drying Shiitake

How to Dry Shiitake with HelloRiver Dryer.

Preparation: Pick up shiitake which are about half ripe and not watered for a day.Sort out the picked shiitake into groups, and then expose them in the blazing sun for 2-3 hours to remove some water; put shiitake in the plate with cap face upward and stem face backward on an even basis.Don't overlap or squeeze them, or Shiitake quality will be decreased due to damage.Make sure that shiitake is dried after 6 hours of picking.If refrigeration available, fresh shiitake can be kept longer.

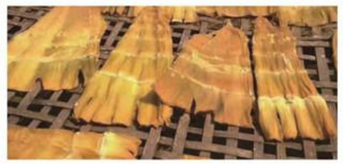
Temperature control: Raise the temperature in the cabinet to 35°C, and then put shiitake into thecabinet.The temperature shall be lower at first, and then raise it gradually.Generally, raise 1-3°C within one hour, and the highest temperature shall be 70-75 Celsius Degree. Dry shiitake at 35-40°C for 6 hours, at 40-60°C for 8-10 hours and at 60°C below for two hours.The higher moisture content is, the more time it takes to dry fresh Shiitake.If the temperature increases abruptly at the beginning, the cap will not be round, chapped and become black, gills will be overlapped, and the activity of enzyme will be damaged. Shiitake will lose its original flavor accordingly.Dry shiitake until it is fully parched.Neither stop heating at will, nor change the temperature at a sudden, or shiitake will become black and its quality will decline.



Humanity control: Exercise strict control over the temperature, and timely dehumidify in the drying process. In the early drying process, dehumidify on a full-load basis as the temperature is 35-40°C; dehumidify at intervals at 40-60°C; and stop dehumidifying as the temperature is higher than 60°C. Shiitake will become white in case of excessive removal of moisture. Hygrophanous and yellow shiitake means that moisture is not removed in a proper way or the temperature is too low, especially heat supply is stopped in the drying process. Drying quality inspection; After 16-18 hours of drying, open the cabinet door to check dryness of shiitake. Use your finger to press the place where the cap and the stem connects. If there is only indentation, dryness of shiitake is just enough. If you feel very soft and gills are soft too, continue to dry them. Dried shiitake has a unique fragrance with yellow, erect and complete gills. Moisture content in dried Shiitake is less than 13% by weight. Dried shiitake remains its original shape with round and flat cap and natural color.

Drying Bamboo Shoot

Bamboo shoot is very delicious and is considered as the treasure among all dishes. According to the Chinese traditional medicine, bamboo shoot has a cold nature which helps to reduce phlegm for descending qi and to clear heat for purgation. It is very tasty. After quick boiled, fresh bamboo shoot becomes more delicious. Many people like to fry them dry, add some water and boil it with meat. This cooking method makes bamboo shoot tastier. Some people call bamboo shoot "Caizhu dish", indicating that it tastes better if cooked with meat. Many people in Fuzhou in Jiangxi to Guangxi and Fujian do business related to processing bamboo shoot. More and more people have adopted bamboo shoot dryers to cure it since such dryers were introduced.



HelloRiver bamboo shoot dryer, also known as air source bamboo shoot dryer, is used to dry Mao bamboo shoot and Square bamboo shoot.It can greatly save electricity and energy based on the air source technology.It has been widely used in many cities such as Sanming in Fujian.As many cities such as Zunyi in Guizhou don't allow to use the earth stoves which burn coal, more and more people start to use professional dryers to cure bamboo shoot.

Moisture content in bamboo shoot is very high.We accordingly recommend that the temperature be set at 30°C at the beginning and be raised step by step.The entire drying process takes about 60 hours. HelloRiver bamboo shoot dryer js equipped with the temperature and humanity sensor which can exercise the accurate control over temperature every time so as to guarantee the quality of dried bamboo shoot.

Drying Sweat Potato

Sweet potatoes, are plenty in protein, starch, pectin, cellulose, amino acid, vitamins and mineral substances and are thus praised as "the food for longevity".They help to cure cancers, protect hearts, prevent emphysema and diabetes and lose weight.In Japan, they are also praised as a food for longevity and have good pharmacological efficacy.Sweet potatoes are widely grown all over the country, and thus their yield is very considerable.They are very popular with people as they abound in polysaccharide and mucus protein necessary for human body.Typically, sweet potatoes are not processed but directly sold in the market, causing inconvenience in transportation and low price.If sweet potatoes processed into food products for sale, their added values will be greatly increased and better economic benefits will be achieved.



How To Dry Sweet Potato With HelloRiver Dryer

Preliminaries

Wash sweet potatoes; put them into the boilers to boil them; get them out before boiled thoroughly; and cut them into slices after they get cool. Make sure that all sweet potato slices have the same thickness first, and their size is relatively the same. After all procedures mentioned above have been completed, put the slices on the racks on an even and orderly basis.

Drying

1.Raise the temperature in the cabinet to 30DC(and put the sweet potato slices in the cabinet. Set the temperature to 40 Celsius Degree, and dry sweet potatoes for 1 -2 hours;

2.Set the temperature to 55°C, and dry sweet potato slices for 2 hours;

3.Set the temperature to 65°C. and dry sweet potato slices for 2 hours;

4.Set the temperature to 70°C, and dry sweet potato slices for one hour;

5.Turn off the power, and take out of the slices after one hour.

Packing sweet potatoes into bags

Don't pack the slices into the bags unless they are cooled down. All in all the entire drying process takes about 8 hours with the highest temperature less than 70 Celsius Degree.



Drying Red Dates

Why Choice HelloRiver Dryer To Dry Red Dates?

HelloRiver Heat pump fruit and vegetable drying machine takes advantage of the reversed Carnot principle, absorbing the heat from around and sending the heat to the materials which will be dried. This kind of dryer is mainly composed of heat pump dryer and drying chamber. This dryer will be controlled by touch screen controller, and the temperature can be adjusted. It has low electric consumption.

The Application Of HelloRiver Dryer in Drying Red Dates.

What is the most important to cure red dates is to dry them up. The drying process is composed of evaporation of water and sugar conversion on the premise of maintaining the original quality of red dates as far as possible. Red dates abound in sugars. Among them, polysaccharide is not sweet, and becomes sweet only after inverted into simple sugars by the function of the biological enzyme. It is the reason why cured red dates is sweet. If we want to invert sugars fully, we need to strengthen the activity of biological enzyme. After a long time of practices, we have found the right temperature at which the complete conversion can be achieved is about 60°C.



How to Dry Red Dates with HelloRiver Dryer

Step 1. Preheating: preheat the cabinet completely on a gradual basis to evaporate most of water; and dry red dates at 35°C for 6-10 hours. When the temperature of red dates reaches 45°C, dry them for 7-8 hours. When the temperature is at 45-48°C, there will be some small water drops on their skin.

Step 2.Evaporation: Raise the temperature to 65°C within 8-12 hours to evaporate most of free water. Removal of moisture contributes to water evaporation. Keep the indoor temperature stable for constant evaporation. The drying process goes well in case the skin wrinkles.

Step 3.Drying up: this phase will end within 6 hours. In this phase, moisture content of red dates is not high, and thus more attention shall be paid to temperature control. It is better that the temperature is held at 50°C. At this moment, the humanity has been reduced. If the humanity is higher than 60%, dehumidify a little. Water in red dates become balanced, and red dates are dried well.

Step 4.Cooling: Keep good ventilation and heat dissipation for dried red dates. Pile them up until being cooled.

Drying Mango

With succulent pulp, mangoes taste very pleasant, a mixed flavor of peach, apricot, plum and apple. In summer, mangoes help to promote fluid production, quench your thirst, clear summer heat and relax your mind. It is hard to keep them fresh and to transport for a long distance. We typically can them or cure them into preserved fruit, fruit wine, dried fruit, jam or jelly.



How to dry mangoes with HelloRiver dryer

Select fresh ripe mangoes: Li Song mango, Zi Hua mango and wild mangoes grown in Hainan are suitable for processing. Full pulp contributes to the rate of finished products. It would better that mangoes are nearly ripe. If the maturity is low, mangoes taste bad with poor color. They are perishable in case of post-maturity.

Washing: Put mangoes in the tank, rinse them with clear water flow, select unqualified ones, put qualified ones in the plastic baskets by size, and strain water

Peeling: Use a stainless steel knife to remove exocarp and scars by hand. Make sure the surface is smooth and even and all exocarp is removed. If not, tannin in the exocarp is easy to get brown in the process, which has a negative impact on color of finished products. Use a sharp blade to cut peeled mangoes into slices on a vertical basis. Each slice is 8-10 mm thick. The kernel still with some pulp can be made into juice.

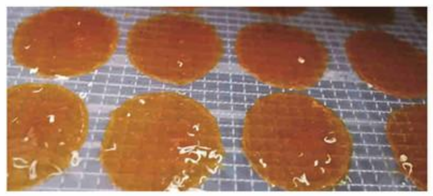
Color protection: Use sulfur to smoke or soak slices to protect their color.

Drying: Put the mango slices on the rack (if soaked with sulfur, strain water first), and put the rack in the cabinet to dry the mango slices up.

At the beginning, the temperature shall be held at 70-75°C. In the later phase, the temperature shall be at 60-65°C. Pay attention to turning over and rewetting in the drying process.

Softening and packaging: If moisture content of mango slices meets the desired level, typically 15-18%, put them in the closed container for 2-3 days to soften them and make water balanced for packaging.





Drying Mulberrry

Processing mulberry has stricter requirements on temperature and air supply high sugar content and great difference among mulberry granules. If the temperature is out of control, mulberry will become soft. If air supply is not enough, it will take much longer time to dry, resulting in a negative impact on quality of dried mulberry. We have gathered many construction and drying experiences in through large and medium-sized mulberry-drying projects in Chongqing, Zhejiang and Zhaoqing. We can escort for your business.


Mulberry is a berry with high sugar and moisture content. Mulberry fruit shape is composed of a small fruit sac shape, water is difficult to come out, so it takes a long time. Drying temperature can not be too high, if temperature too high temperature then it is easy to affect the effective content of anthocyanins.In the first stage of drying, the temperature rises for one hour without dehumidification. The drying mode makes the drying room rise to about 50 degrees. The second stage is the drying + dehumidification mode, with the target humidity of 60% and the target temperature of 55 degrees.



In the third and fourth stages, each stage rises by 5 degrees, and the target humidity decreases by 10%, so that the drying room can continuously drain the humidity. In the last stage, the target humidity is set at about 15%. If the conditions permit, it can be considered that at the end of the fourth stage, stopping for a period of time before re-drying, so that the moisture inside the dried fruit is evaporated by the heat of re-drying, the shape of the dried fruit is better, and the overall energy efficiency is better.

Drying Incense Stick

Incense Stick Dryer

It is very easy to make incense, but the traditional incense drying process has not met the increasing demand of people as demand exceed supply in the current society. The traditional method is to occupy vast land to build open airing shelves where the incense is put and and dired in the sun or with its afterheat. Incense will agsily go bad with its color ruined in cases of a rainy or cloudy day. Even a lot of factories have stop making it. It is clear that the uncontrollable environmental conditions have greatly negative impact on economic development of the incense manufacturers. A new ngeration drying prcess is requirement in cases of mass production.



The drying procedure is key to make incense, and mor so in South China. It rains so often there taht traditional drying site with large area is not applicable. Therefore, many incense manufacturers can not make incense though having order, even they make incense which can not be dried. Hello River heat pump dryer has resolved the problem. It is not subject to the time and weather conditions. and is quite energy-efficient, environmental and cost-effective. Our professinal engineers will help you install it. It is the best to dry incense.

How to Dring Incense with Hello River Dryer

Phrase I: Set the temperature to 45 Celsius Degree and the humanity to 80%RH. Dry it for 5-6 Hours.

Phrase II: Set the temperature to 50 Celsius Degree and the humanity to 60%RH. Dry it for 3 hours.

Phrase III: Set the temperature to 55 Celsius Degree and the humanity to 40%RH. Dry it about 1 hour, and then you will get dried incense.



Drying Timber

Fresh lumber contains a lot of moisture which will continue evaporating in a certain environment.If water evaporates naturally, lumber will shrink, crack, bend, deform and even ferment, which will damage the quality of lumber products.Therefore, lumber has to be dried on a controllable basis before made into lumber products.The correct drying process can overcome the defects mentioned above, and enhance its mechanical strength and processability.It is an important technology-based measure to make reasonable use of lumber and to add its values and a e primary and necessary procedure to produce lumber products.Energy consumption of drying lumber accounts for 40-70% of the total of producing the lumber products.The drying process wastes heat too much with the energy consumption of 30%.The energy cost in the drying process occupies more than 50% of the total drying cost.
As balance between supply and demand of energy is increasing and the environmental problem caused by the atmospheric greenhouse effect is more and more severer, the lumberen industry pays greater attention to the energy-saving lumber-drying process.In the past twenty years, many drying technologies have been developed.Among them, the heat pump drying process has posted a better performance in saving energy.Hello River lumber dryer has the capability of drying varieties of lumber such as logs, roselumber and cabinet-lumber, and really solves the problems customer are faced with in the drying process.




Factors influencing the wood drying

1.Wood temperature: Measure and control the dry-bulb temperature to adjust the working status of the heating system so as to control the temperature in the cabinet.
2.Wood humanity: Measure the difference between dry-bulb temperature and wet-bulb temperature to adjust the dehumidification amount and the working status of the spraying system to automatically control the humanity in the cabinet.
3.Moisture content of wood: Adopt the resistance-based moisture meter to prevent limitation and deviation arising from measurement and to provide effective technology-based guarantee for accurate performance of the moisture content baseline forwood.

How to dry wood with Hello River dryer

The wood drying equipment which wants to dry wood on a controllable basis must have the three basic unctions: heating, adjustment of humanity and ventilation.Heating speaks for itself.Adjustment of humanity is used to provide the high-humanity environment necessary for some phases to prevent wood from cracking and deforming.The ventilation device must ensure that the wet and hot air goes through the pile of wood evenly so as to make the water in the dried wood well-distributed.In the early drying process, the performance coefficient (COP) of the heat pump unit is high due to high relative humanity of the wood to be dried.As the drying process goes on, the COP will decline due to decrease of the relative humanity, resulting in lower performance of the unite on a negative basis.

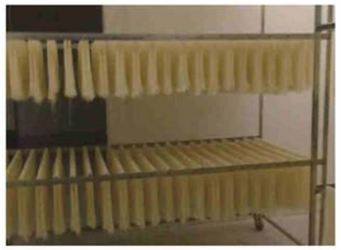
if the temperature is not high, for example, the low-temperature heat pump is below 54°C, moisture can't be removed from the wood in case the moisture content is below 15%.Generally, it is necessary to raise the drying temperature to 71°C or above.

The drying cabinet shall be thermal-insulation and resistant to air loss.In terms of the thermal insulation, the cabinet structure shall have a small thermal capacity to reduce heat loss, which is equal to or less than the mechanical equivalent of heat.No humidifying equipment is installed in the heat pump drying cabinet, if the water vapor overflows, it is definite that the drying condition is hard to change.Therefore, the cabinet shall have good airimpermeability.
Keep the air flow in the cabinet stable.It is the best if the air speed is 1 m/s.

Drying Noodle

The Noodles are made of refined flour without any preservatives and additives.Nutrients of flour have been retained effectively.Dried noodles can be stored fora very long time due to its complete dehydration.





How to dry Chinese noodles with Hello River dryer

1.Shape noodles with cold air: Typically, strengthen air movements, and make use of a large quantity of dry air to remove surface moisture of noodles without the temperature raised to shape them first.The drying temperature is at 20 -26°C, and air humanity at 55-65% RH.

2.Hold the humanity at a certain level for sweating: Strengthen ventilation to keep a good air circulation.Don't raise the temperature “abruptly” but on a “graded” basis.The drying time shall be 30-40 minutes with the temperature at 30 -35°C and the humanity at 75-85% RH.

3.Raise the temperature but reduce the humanity: After the phase above ends, it is necessary to raise the temperature further and to reduce the humanity to make sure that most of water in noodles is evaporated on a complete and timely basis.The drying time is 90 minutes with the temperature at 35-45°C and the humanity at 65-75% RH.

4.Reduce the temperature for heat dissipation: After the phases above, noodles are almost dehydrated and their structure is fixed.At this moment, you can keep the air moving to lower the temperature of noodles and to remove some water until their moisture content satisfies the quality standards.Hold the airing temperature at 26-28°C and the humanity at 50-60% RH for about 90 minutes.



Drying Rice Noodle

Many varieties of rice noodles are available, fresh, dried or wet.But their production processes are almost the same: rinsing rice- soaking - grinding - steaming - pressing into strips (threads) - re-steaming - cooling - drying -packing - finished products.The drying process is key to produce high-quality rice noodles.Hello River rice noodle dryer ensure that the drying process is not interrupted so as to make rice noodles in good color and dried evenly, and saves energy and protects the environment.


How to dry Rice Noodle with Hello River Dryer

According to the actual data provided by a rice noodle factory in Zhengzhou, Henan, Hello River heat pump dryer (JAY-HP-HGJ10) spent four hours drying 500kg of wet rice noodles into 250kg on a full-load basis.If the electricity consumption is 13 kilowatts per hour and the electric charge is RMB 1 yuan per hour, its running cost is RMB 52 yuan and drying 1-jinrice noodles costs only RMB 0.05 yuan.



Drying Tobacco Leaf

In recent years, more and more attentions have been paid to upgrading of the curing barns and development of alternative energy sources of coal in the wake of development of the modern tobacco agriculture.As the environmental heat-generating equipment, the heat pumps have become popular in developed countries.Chinese scientists and engineers, together with some enterprises, have made an attempt to apply the heat pump and its supporting technology to the tobacco curing process.



According to the attempts, the heat pump cabinet can make full use of the air source instead of coal to dry tobacco leaves.It is proven that the quality of tobacco dried in such way has been greatly improved and the drying costs has been greatly reduced.



The drying process control of porous medium is one of the important factors affecting the quality of dry object. Unlike traditional coal burning barn, an alternative better approach using the heat pump technology for tobacco drying process is proposed in recent years. Based on the theory of heat and mass transfer, a numerical model is established using a widely accepted computational fluid dynamics (CFD) package, Ansys-Fluent, and different drying process boundary conditions and physical properties are considered. Numerical results such as the distribution of the temperature, humidity and velocity field in the curing barn are provided. Besides, on-site measurements are conducted based on an actual curing barn in Chongqing. Through comparing the distribution of the key parameters in the tobacco leaf flue-curing process with our numerical simulation, good agreements are found. Since the numerical simulation can enrich our understanding of thermal and moisture environment within the curing barn, the approach prosed in this study can be applied in future engineering projects for better drying process control of tobacco leaf curing.

Choosing energy-saving and environment-friendly dryer, the government advocates environmental protection and clean hygiene, and minimizes pollution, so choosing high temperature heat pump dryer is a wise choice.


Drying petfood

Pet food is a kind of food specially provided for pets and small animals, such as cats and dogs, which is between human food and traditional animal food. Pet food has many advantages, such as comprehensive nutrition, high digestion and absorption rate, scientific formulation, quality standard, convenient feeding and use, and prevention of certain diseases. Pet consumer goods have been developed in China for about 10 years. Now pet owners in large and medium-sized cities in China are more and more conscious of consuming pet consumer goods. Among them, those who consume a large amount of pet consumer goods are: Cat food and dog food, next only to cat food and dog food, are pet snacks. Pet nutrition and health products are also recognized by most pet owners at an alarming rate, which constitute the mainstream consumer goods of pet food in China.


In the production and processing of pet feed and pet food, drying is also an important technology. In the drying process, it is required to maintain hygiene and safety and not cause pollution to the environment. This requires manufacturers to have a hygienic, safe, energy-saving and environmental protection dryer in the process of production. On the field, there are still a few dryers that meet the requirements. The new generation of Hello River heat pump dryers can just meet the requirements for pet food drying production.


Drying Sea cucumber

Hello River heat pump dryer use for drying Drying Sea Cucumber

Sea cucumbers are echinoderms from the class Holothuroidea. They are marine animals with a leathery skin and an elongated body containing a single, branched gonad. Sea cucumbers are found on the sea floor worldwide. The number of holothurian species worldwide is about 1,717 with the greatest number being in the Asia Pacific region.Many of these are gathered for human consumption and some species are cultivated in aquaculture systems. The harvested product is variously referred to as trepang. Sea cucumbers serve a useful role in the marine ecosystem as they help recycle nutrients, breaking down detritus and other organic matter after which bacteria can continue the degradation process.



Using Hello River heat pump dryer to dry sea cucumbers,this mechanical processing method has more advantages of energy saving, environmental protection, high efficiency and low labor cost than traditional drying method. Usually the traditional drying time is about 10 days, while the drying time by sea cucumber dryer can be shortened to about 3 days, and is not affected by the weather, which greatly saves the drying efficiency.


According to the characteristics of sea cucumber, Hello River adopt the advanced low-temperature dehydration dryer technology in the world, and combine the Japanese equipment technology with the Japanese scaly hot air technology. At the same time, we develop a new generation of automatic low-temperature drying equipment for sea cucumber according to the characteristics of foreign sea cucumber (such as Mexico, Russia, Australia, Indonesia, etc.).
In processing light dried sea cucumber, salt dried sea cucumber, sugar dried sea cucumber, and other aquatic products can also be processed and produced, such as: sea cucumber, abalone, carp, seasoned squid plate, fillet, dried shrimp, etc. The low-temperature dehydration dryer with the principle of low-temperature dehydration is used to finalize the type, dehydration and drying of the aquatic products in the box, which solves the problem that the technology of sea cucumber can not be processed. The sea cucumber dryer of our company uses American compressor and high-quality evaporator to finalize the dehydration treatment of sea cucumber in the box, and finalizes the dehydration efficiency. The results are immediate, hygienic conditions are better, and the flavor of sea cucumber is better preserved.

Drying Moringa

Moringa oleifera is a perennial deciduous tropical tree widely planted in tropical and subtropical regions of Asia and Africa. There are about 13 species of Moringa oleifera in the world, mainly distributed in India, China and Japan in Asia, Egypt, Kenya, Ethiopia, Angola, Namibia, Sudan, Mexico and the United States in Africa. Many tropical and subtropical countries and regions are very popular economic plants all over the world.



Development and processing of related products of Moringa oleifera: Harvesting of tender shoots of Moringa oleifera. When picking, usually when the tender shoots are 20-30 cm long, the leaves are fully unfolded and picked artificially at their non-ageing places. The young shoots after picking can be directly eaten or dried. Harvesting of mature leaves of Moringa oleifera: Generally when the leaves are dark green, they can be dried or dried in time after harvesting, which can be made into Moringa oleifera tea, etc. Moringa oleifera seed harvesting: After harvesting, the fruit can be eaten in shells or dried to facilitate preservation.

Moringa oleifera leaves have high moisture content, up to 70%, about 8-10 hours a batch. Air source heat pump dryer can be used to bake the leaves and seeds of Moringa oleifera. Its mineral elements, protein and crude fat content will not be affected.

The Moringa leaf plantations in Cambodia have begun to use heat pump dryers to dry the leaves and seeds of Moringa related product, and the results are very good. We have a Moringa leaf dryer system in Cambodia. The drying system uses two 12P dryer machine, equipped with a drying room 4 meters wide and 12.5 meters long, and can hold about 14 trolley with 14 trays per trolley.


The system uses a planar 360 degree circulating air structure, with 12*250W fans on each side, and the air volume is sufficient. With the waste heat recovery, evaporator condensation dehumidification dual-effect heat recovery device, the system can dehumidify up to 100 liters per hour! It is also equipped with strong exhaust fans and new valves to ensure the dehumidification effect. The Moringa Dryer system work very well now.

Drying Ginger

About using heat pump type ginger slice dryer to produce ginger slice. After general cleaning, slicing machine is used for slicing of ginger. The thickness is about 3-5 mm, then loading into the material plate, pushing into the ginger slice drying room. Two 12P main machines can support the drying room whose size of the drying room about 11.5 meters long, 4 meters wide and 2.2 meters high. The drying room can put into 18 pcs of trolley at a time, 14 trays per trolley, each can put 300 kilograms of ginger slices, thus total 2.5tons of fresh ginger slices can be well fit into the drying system.

The water content of the slices is large. The system needs two fresh air valves on each side. The drying temperature is raised from 55 Celsius. It takes 22 hours to dry each batch. According to the calculation of 1 yuan per kilogram, the drying cost of fresh ginger slices is 0.12 yuan per kilogram.

Drying Sludge

Sludge drying equipment Features:

1.The water content rate of the discharged sludge can be less than 30%. And the maximum sludge volume reduction can be more than 80%.

2.High dehumidification efficiency by using multi-level energy saving technology, can save more than 50% energy compared to traditional drying.

3.No dry exhaust emissions, no need to allocate tail gas purification device.

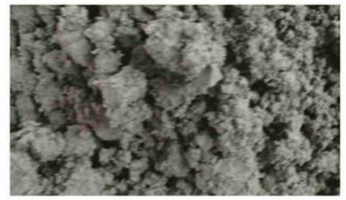
4.It is running in a full sealed device with low temperature 50-75℃. Sludge is in granules after drying, almost no dust will generate.

5.High thermal efficiency. Use the latest multi-level energy-saving technology to save operating costs.

6.It is designed in module and easy to install in site. Made of stainless steel ensures the service life more than 15 years and it occupies a small area.

Type of sludge: Electroplating Sludge,chemical Industry Sludge,Pharmaceutical Sludge,Biochemical Sludge,Heavy Metal Sludge,Hazardous industrial sludge

The Type of Dryer: Drying Chamber, Belt Type Dryer, Container Type Dryer.



Dewatering machine used: Heat Pump Dryer System
Wet sludge capacity: 2-3t/d
Moisture rate before drying: 85%
Moisture rate after drying: <30%

PROJECTS

Drying Anchovy Fish


Drying Bamboo Shoot


Drying Bean Stick


Drying Blueberry


PROJECTS

Drying Camellia Oleifera Seed


Drying Cashew Nut


Drying Cherry


Drying Chicken Meat


PROJECTS

Drying Chinese Medicine


Drying Chinese Mushroom


Drying Chinese yam


Drying Chrysanthemum Flower


PROJECTS

Drying Cotton Pads


Drying Cotton Yarn


Drying Day Lily


Drying Dragon Flower


PROJECTS

Drying Dragon Fruit


Drying Flower Tea


Drying Ganpu Tea


Drying Ginger


PROJECTS

Drying Gojiberry


Drying Golden Pompano


Drying Herb


Drying Incense Stick


PROJECTS

Drying Lemon


Drying Litchi


Drying Maca


Drying Mango Slice


PROJECTS

Drying Marine Fish


Drying Momordica Grosvenori


Drying Moringa


Drying Mulberry


PROJECTS

Drying Mushroom

Drying Noodle

Drying Orange Peel

Drying Papper Tube

PROJECTS

Drying Pepper

Drying Petfood

Drying Pork

Drying Potato