Fruit and vegetables heat pump dehydration plant

Drywind Belt

The **Drywind Belt** is a medium-capacity dehydration plant for whole, sliced or diced fruit and vegetables treatment.
It is composed of a list of innovative elements, which improve its performance:

- Multi-phase air heating inside the drying vertical modules;
- Higher COP (coefficient of performance) compared to standard heating pump (lower consumption) ;
- "Easy building" plant solutions for building and installation costs reduction.

TECHNICAL SPECIFICATIONS

Drying chamber

The whole drying chamber structure, all the parts in contact with the food product and all parts that require cleaning operations are realized in stainless steel AISI 316L.
The supply of the drying chamber should be provided by means of an automatic loading system composed of a charging hopper equipped with a star valve which enables the product distribution on a first belt conveyor.
The out-coming product from the first tape will be deposited afterwards on other tapes, arranged as a row, composed of a total of 5 tapes. The tapes are realized in plastic material (polyester mesh) for food use and resistant to process temperature.
The tapes are realized in plastic material (polyester mesh) for food use and resistant to process temperature. They are moved by gearmotors with speed reducer and at variable speed controlled by the inverter.
The dehydration of the product is carried out through a temperature and humidity conditioned air flow with orthogonal current direction compared to the tape movement direction.
Thanks to the described technology, it is possible to define the thermal profile inside the chamber, with a different air temperature according to the drying rate and the type of product to be treated.
The chamber is equipped with specific filters for chamber inlet air filtration.

UTA (Air treatment unit)

The air treatment system (UTA) includes a closed-loop heat pump system and the use of new generation refrigerant gas. The presence of the heat pump improves the productive performance, reduces energy consumptions compared to traditional dehydration systems and it allows the treatment of soft and/or heat sensitive products.

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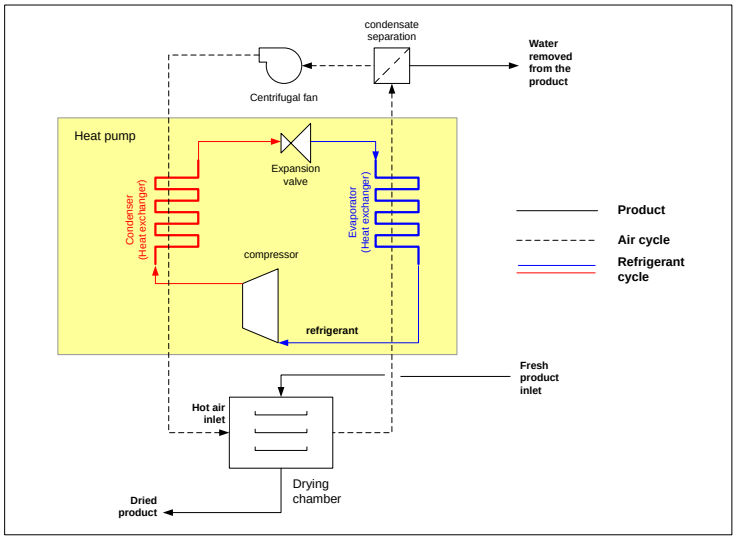

Dryer Heat Pump Scheme

Dryer technical specifications

	DRYWIND BELT 100	DRYWIND BELT 200
Length L (mm)	10000	10000
Width W (mm)	1400	2400
Height H (mm)	3500	3500
Number of belts	8	8
Length of belts L (mm)	8000	8000
Width of belts W (mm)	1000	2000
Installed power (kW)	65	135
Available thermal power (kW)	125	250
Operating hot air temperature range (°C)	45-75	45-75
Total evaporation surface (m^2)	64	128
Fresh product input (kg/h)	100	200
Dried product output (kg/h)	15	30
Total removed water (kg/h)*	85	170
Number of UTA	3	3
Energy consumption (kWh/kg dry product)**	~ 4	~ 4

** Considering 85% inlet product moisture and 10% outlet product moisture**calculated on the installed electric power*

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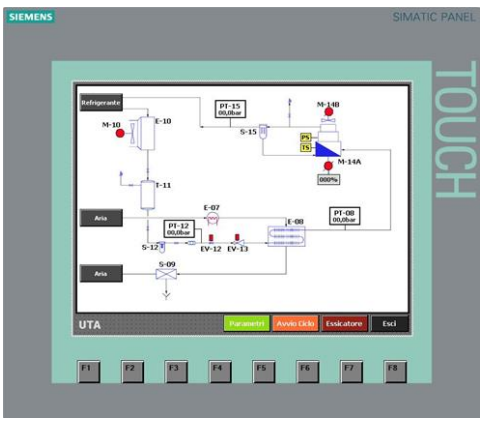
Drywind Belt

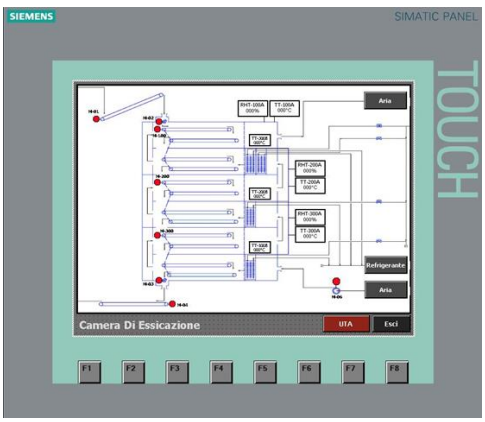
Further specifications and dryer utilities

Service board and control panel

Service board including electric and electronic control and protection components. Control panel, control and anomaly detector alert of the machine. Main functions:

- "on - off" push-button for power supply, conveyor belt advancement;
- “Reset” push-button;
- Emergency push-button;
- Controller (PLC) and supervision through remote PC for automated handling of the plant.





Components, safety and conformity equipment

The used components are selected among the best international brands and are proportionate to guarantee a high reliability.
All safety devices are provided.
The electric and electronic setup has been realized according to the CEI-IEC norms.
The plant is CE marked.

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