

FRIGOMIX[®]

Patented

Double Paddle Shaft Cooling Screw Conveyor with Air Fluid Circulation for Continuous Cooling Processing of Food Products



▲ **Cold water and air cooling screw conveyor with total and easy maintenance.**

These two technologies allow simultaneously :

- The transfer of negative kilocalories of cold water towards the product via 2 screws with circulation of cold fluid (**chilling**)
- Fluidization of the product is generated by air-conditioning (**condensation phenomenon is eliminated** and increase in cold transfer coefficient of the equipment.)

Potential areas for use :

Food industry

Media to be cooled :

Flours, cereals, herbs, spices, seasoning,
bulk with residual humidity

Design formats

Stainless steel

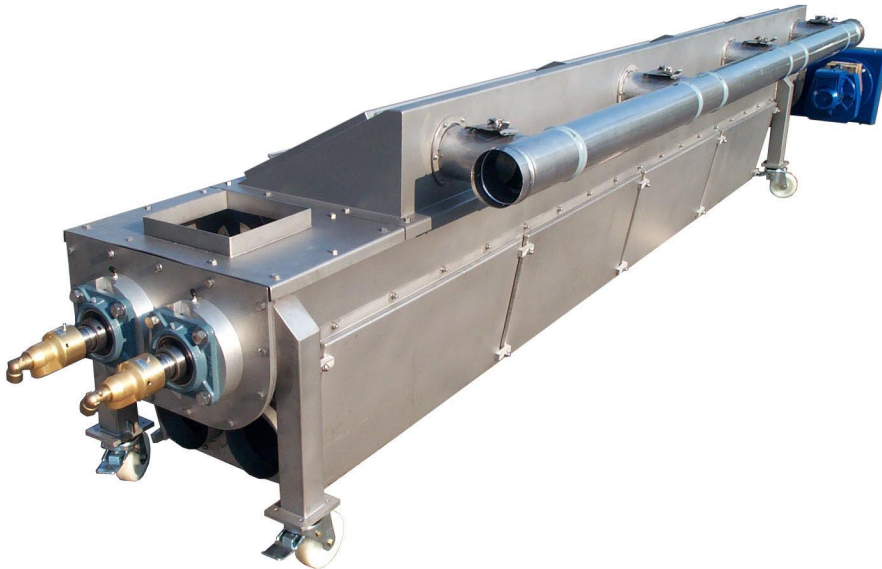
Dimensions

- Ø 200 - 600 mm
- Live length : from 4 500 to 5 500 mm



- **Side view :** General view of the parts of cold water circulation and also inlet and outlet ducts for dry air fluidization.





◀ **Back view with visualization of the wet air manifold.**

Dry and cold air :

- Is introduced under the swivel connections which manage the water distribution circuit,
- Is carried away via the micro porous matter trough,
- Collects water contained in the atmosphere surrounding the product and then is drained off via a general manifold for elimination or recycling (waste water treatment).

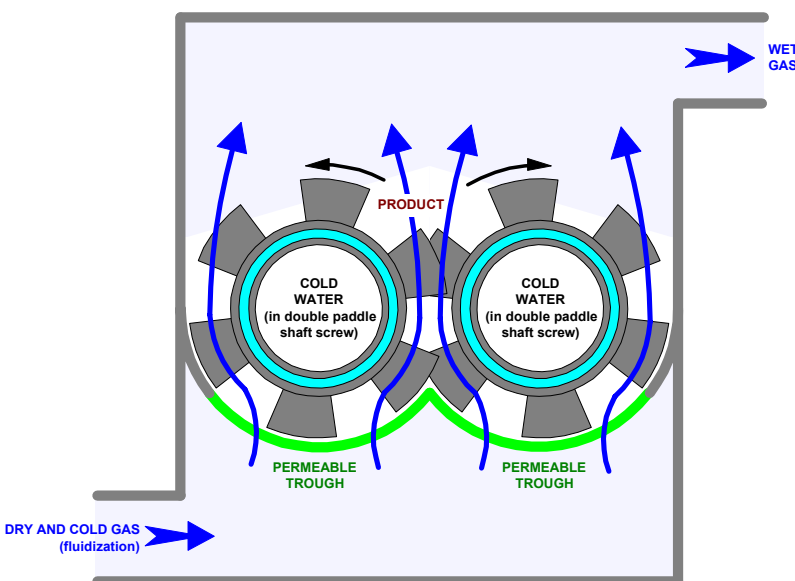
To combine the low flow rate of the air with design format perfectly fitted to extraction ducts to avoid any risks of fine particles flight from the product.

▶ **Frigomix view, general view of easy maintenance and sanitation.**

Total access of the parts in contact with the product for an easy and simple maintenance and sanitation.

Access is possible :

- By the top (glazing of inspection and cleaning)
- By the bottom, opening all the elements of side covers giving access to the inlet duct for the air of fluidization
- By the bottom, tilting of the lower parts of the trough allowing a free access to the plate support of the product as lower parts of the cooling screws.



◀ **Running principle.**

Product is carried away a permeable trough with gas flow circulation and with a total speed and residence time control by direct contact with a hollow shaft screw where the cold fluid circulates in the screw.

At the same time, the product is cooled by radially contact with a dry and cold gas current that passes through the double paddle shaft of the trough.

This double simultaneous function allows :

- A very significant improvement of the global exchange coefficient thus of the energy performances of the equipment thanks to the fluidization of the product by the air beamed.
- The non condensation of the ambient air on the product during the cooling process thanks to the use of a dry air collecting whole or part of moisture of the ambient air.

