# Hybrid Evaporator

## JBT Hybrid Evaporator T.A.S.T.E. Stage + FCE Stage

FRUIT AND VEGETABLE PROCESSING

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## JBT Hybrid Evaporator T.A.S.T.E. Stage + FCE Stage

This family of evaporators is expressly designed for vegetable and tropical fruit products with superior concentrates quality and low operating cost.

These evaporators operate on the principle of the shortest time exposure to processing temperatures and a thermally accelerated descending flow in the first stage where product is most sensitive to heat treatments.

## Description of the T.A.S.T.E. stage, single pass type (pre-concentrator)

The inlet product at ambient temperature or pre-heated is fed to the evaporator feed tank. The buffer tank capacity should be able to guarantee the process continuity. The standard juice flow pattern is a downward flow pattern. Juice enters the evaporator from the top of the T.A.S.T.E. and will pass through a spray nozzle.

At this point the incoming juice will flash into the distribution section. This flash causes a sudden expansion of the feed, thus atomizing the liquid. This fog-like mixture of vapor and atomized liquid fills the distribution area and enters the tubes in the stage body, under turbulent flow conditions. The mixture accelerates downward through the tubes as it absorbs heat from the tube walls.

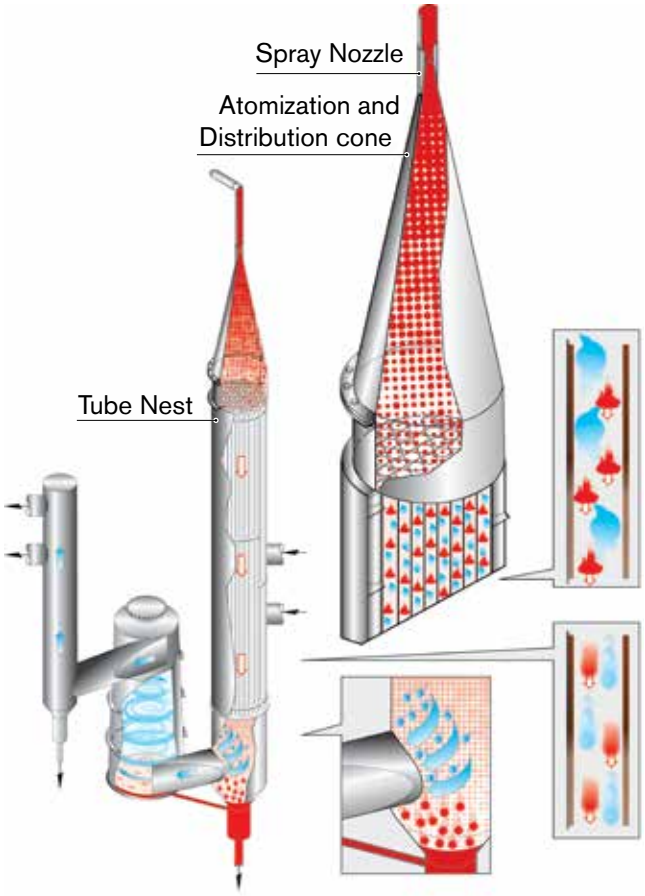
Due to heating a constant pressure, the evaporation takes place at constant temperature. As the juice evaporates, velocity of mixture increases inside the tube.

The juice and evaporated water vapor exit the T.A.S.T.E. tube nest at the bottom. The vapour enters a cyclone type separator where the vapor is separated from entrained product. The juice then is transferred by pump to the next stage.

## Description of the FCE stage (finisher)

This stage is a classic forced circulation design, having as Main Features:

- Reduced holding times, particularly at the higher concentrations where the thermal damage is greater;
- Very low temperatures in the effect;
- Very high circulating speed in the stage in order to minimize the product's thermal damage during the heating phase (inside the tube nest);



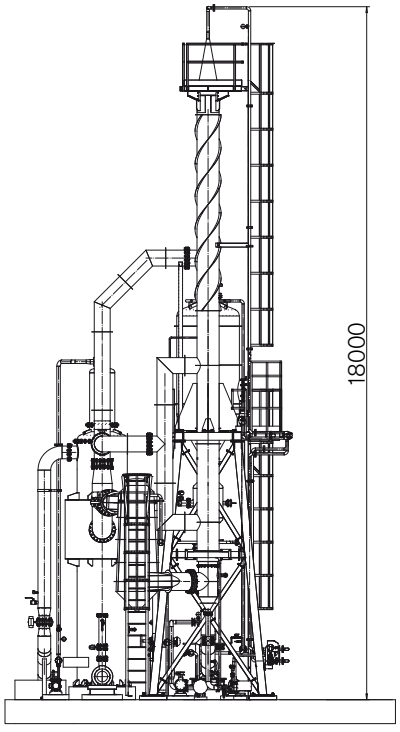

T.A.S.T.E. Stages /Effects are Not Falling Film Type

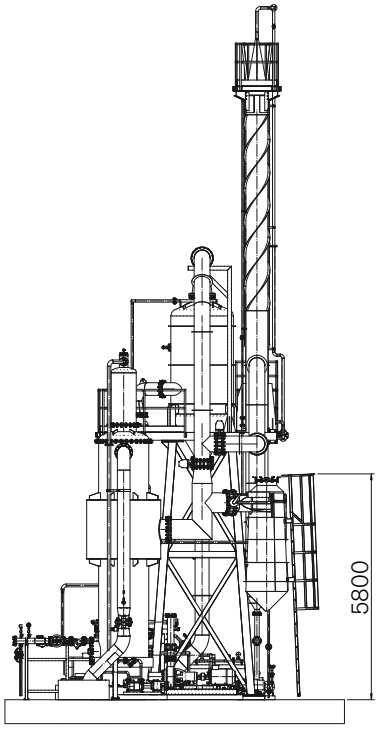
- Longer operating cycle even with highly viscous products (low bostwick).
- Reduced water consumption, because the water is only required for technical needs, such as: pump seal cooling, make up in the cooling tower circuit, etc.
- Optical residue of the final concentrated product fine controlled
- Product recirculation pump, helical-centrifugal type with high performance, specially designed and tested to operate with highly viscous products (low bostwick).
- The special inducers ensure a very high efficiency at very low NPSH, thus preventing the well known cavitation phenomena even in the most difficult working conditions.
- Automatic plant setting-up.
- Positive-displacement pump for product transfer and extraction, automatically operated by servo-control.

## Key benefits:

Increased utilisation of the machine, the capability to process wide variety of products at the different season of the year

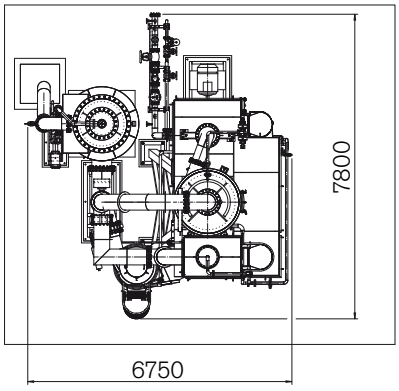
- Reduction of energy consumption (or reduced installed power)
- Improved organoleptic properties of the output product, to achieve the highest final resultant quality for viscous products
- Less maintenance
- Simpler to run
- Fast to clean




| APPROXIMATE SPECIFICATIONS | |
|---|---|
| **A* = Overall height** | 18000 mm |
| **B* = Overall width** | 6750 mm |
| **C* = Overall length** | 7800 mm |

* The dimensions quoted refer to the machine as shown and may vary according to the processing capacity.



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