

T.A.S.T.E. Evaporator



The evaporator to use for heat sensitive products

Manufacturing and assembly

The evaporator is fully assembled and tested in our factory in a horizontal position and is lifted into vertical position at customer's site. Installation time is short with only utility connections necessary if foundations have been prepared in advance.

304 or 316 stainless steel is used depending on the different product requirements. Skilled workers, specializing in stainless steel manufacturing, make it possible to achieve a very precise assembly.



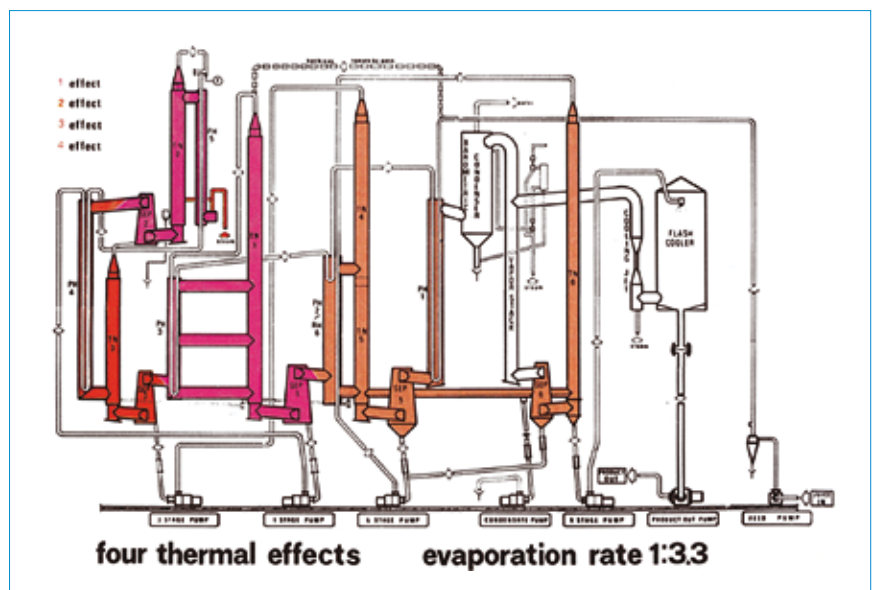
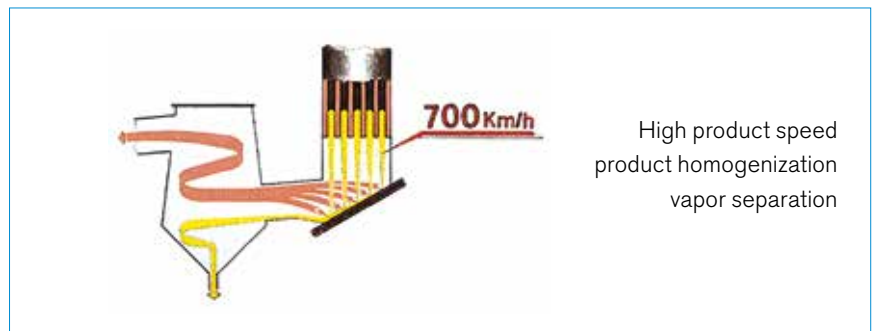
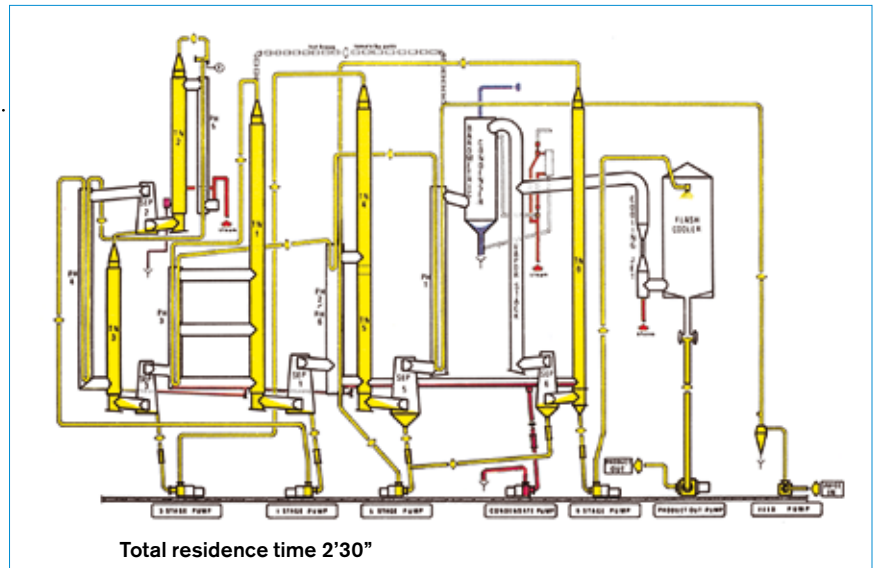
For citrus juice concentrate and other clear fruit juices

The JBT T.A.S.T.E. evaporator (Thermally Accelerated Short Time Evaporator) provides pasteurization and stabilization of juice during the pre-heating cycle and after the first evaporation stage.

Juice is introduced as a turbulent fog in the tube nest.. As a fog, the juice reaches an acceleration speed of ~700 km per hour (435 mph) in the tubes. The JBT T.A.S.T.E. evaporator eliminates recycling of the juice during concentration, thereby minimizing the length of time at which heat is applied to the juice and resulting in better end-product quality.

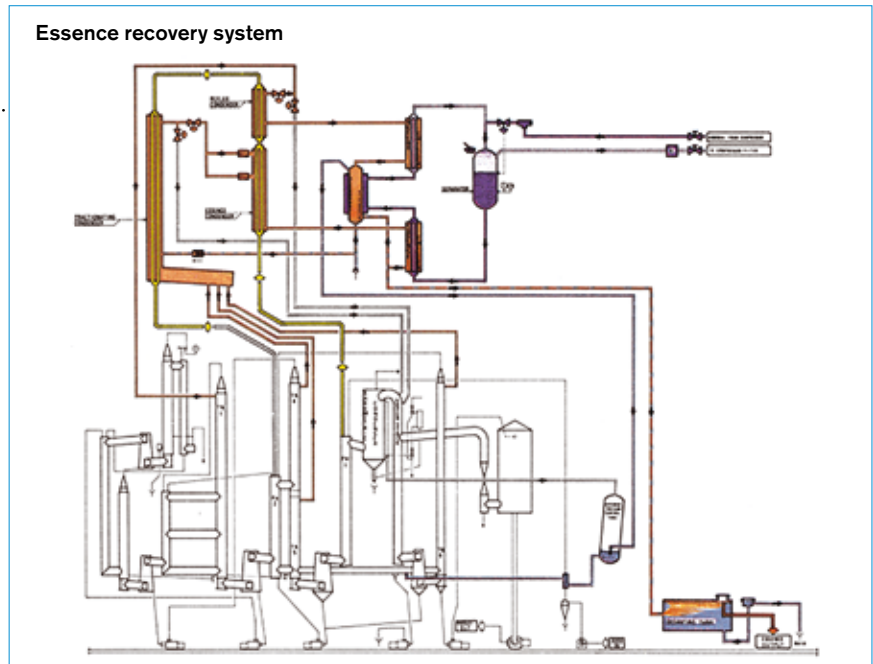
Up to 3.3 kg of water can be evaporated for each kg of steam used in a 4-effect evaporator. In a 7-effect evaporator, the evaporation rate is 5.7 kg of water for each kg of steam. This is another example of the special effort made by JBT to reduce energy consumption.

The T.A.S.T.E. evaporator is the most commonly used unit for citrus processors worldwide. The T.A.S.T.E. evaporator permits a concentration up to 65/75 Brix at a total cycle time of ~2'30" and can operate at 50% of nominal capacity without any problems. Simplified controls and special transfer pumps provide flexibility for the entire evaporation cycle.



Advantages

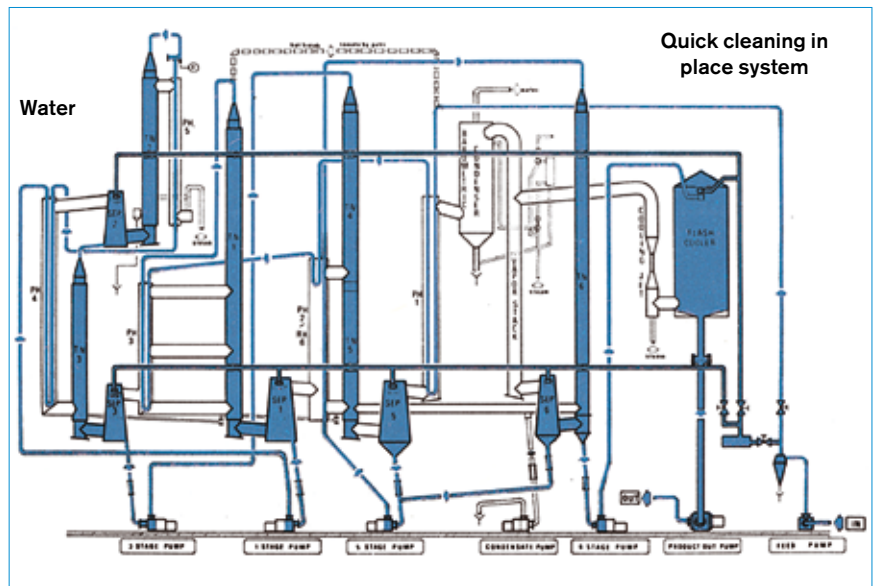
- best quality output
- low operating cost
- low capital investment
- mechanical reliability
- small footprint
- automatic operation and control
- essence recovery mounted on the machine (optional)



Cleaning in place

CIP is incorporated into the evaporator in order to provide high sanitation and cleaning in 30-45 minutes.

CIP is engaged without changing the normal working conditions of the evaporator, simply turn the valve from the juice feed tank to the cleaning solution hold tank. Cleaning frequency depends on type of juice processed.

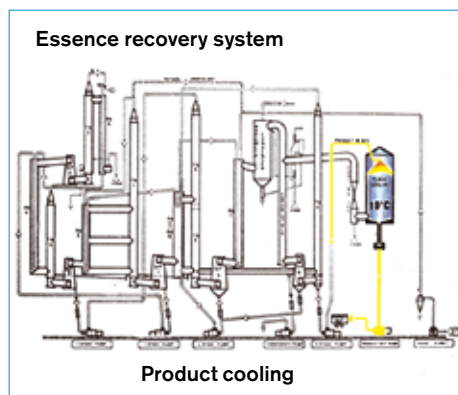


Essence recovery system

This optional feature has been designed to recover the essences contained in the vapors taken from the evaporation stages before condensing them in a barometric column.

d-Limonene, esters, aldehydes, ketones, and alcohols can all be recovered. Aromas are collected in a decant tank where the water phase is separated from oil phase. Final aroma concentration is up to 150 fold.

The Essence Recovery System can be ordered with the machine or can be retrofit to existing units. The systems can be easily connected or disconnected at will.



Standard sizes based on rate of water evaporation per hour:

Kg	1350	2900	4500	7000	9000
lbs	3000	6500	10000	15000	20000
Kg	11500	13500	18000	27000	36000
Lbs	25000	30000	40000	60000	80000

Note: contact JBT for different sizes

Special applications

In order to meet specific customer requirements, a special finishing stage can be added to a normal T.A.S.T.E.. This Multi Purpose T.A.S.T.E. Evaporator (MPTE) is particularly suited for tomato paste producers. Compared with the traditional tomato paste evaporators, the MPTE has these advantages:

- evaporation rate up to 1:3.3
- total residence time: 45 minutes
- high tomato paste concentration, both in hot and cold break
- easy change-over from fruit juice to tomato processing
- reduced cleaning frequency

Apple clear concentrate

For apple juice, a special "hot depectinization" design is used to obtain clear juice. Apple juice enters the evaporator where is heated up to a certain temperature to recover all the aromas; immediately after, it is pumped to special tanks where the pectins are removed.

At the end of this process, the juice pumped back to the evaporator at the same previous temperature. Energy consumption remains almost the same as the standard operation.



Formulas for calculating input of juice, concentrate obtained, etc.

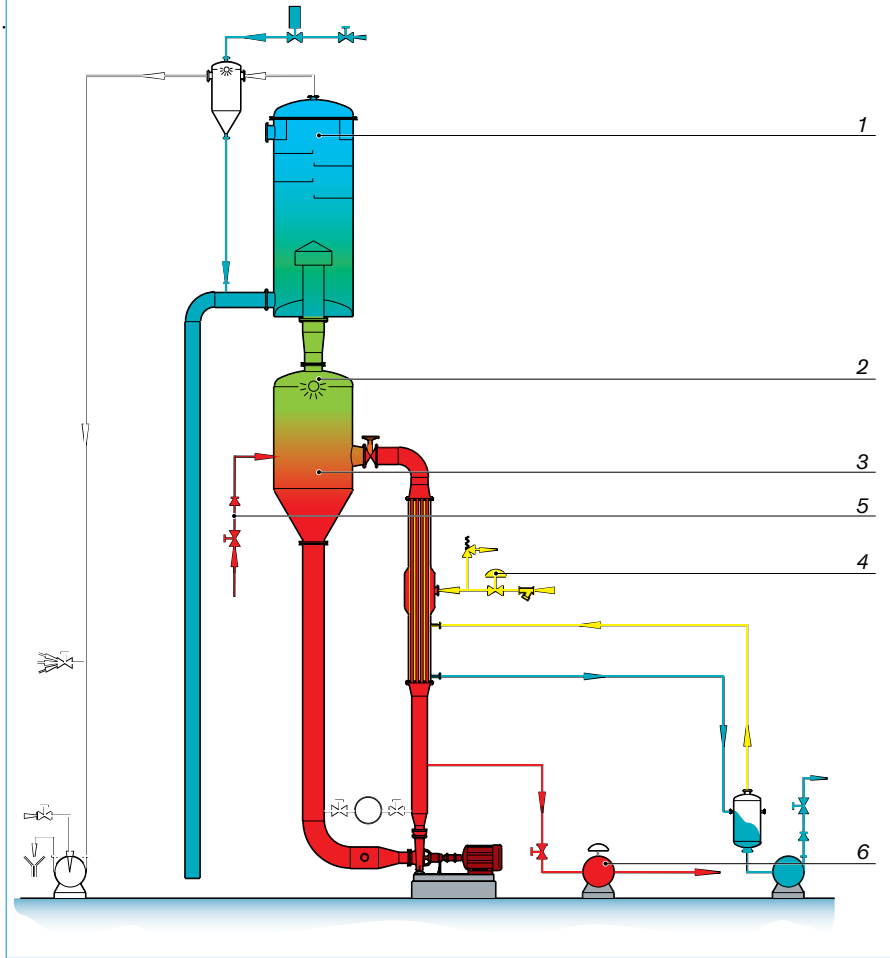
W = water evaporated per hour
 Q = quantity of input juice per hour
 C = quantity of concentrate obtained at the desired concentration
 m = initial concentration (% of soluble solids or Brix in the original juice)
 n = final concentration (in % of soluble solids or Brix)

Examples

To calculate water evaporated: $W = Q (1 - m/n)$
 To calculate concentrate obtained: $C = Q - W$
 To calculate input of juice: $Q = C + W$

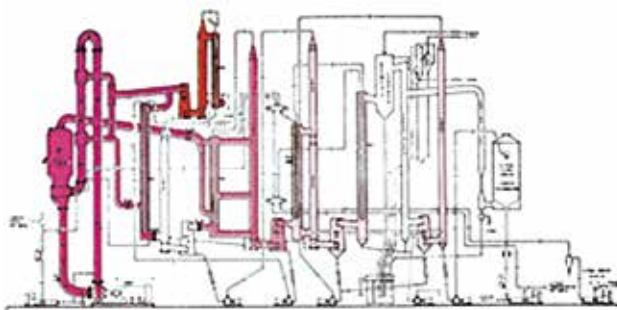
Finishing stage with forced circulation for tomato paste

1. Water from cooling tower
2. Vapor
3. Product
4. Live Steam
5. Tomato juice 9 to 13 Brix
6. Tomato paste out 28 to 38 Brix
7. Tomato process: four thermal effects, evaporation rate 1:3.3
8. Product flow sheet
9. Energy flow sheet

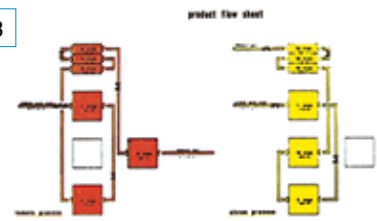


Multipurpose T.A.S.T.E. Evaporator

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Multipurpose T.A.S.T.E. Evaporator

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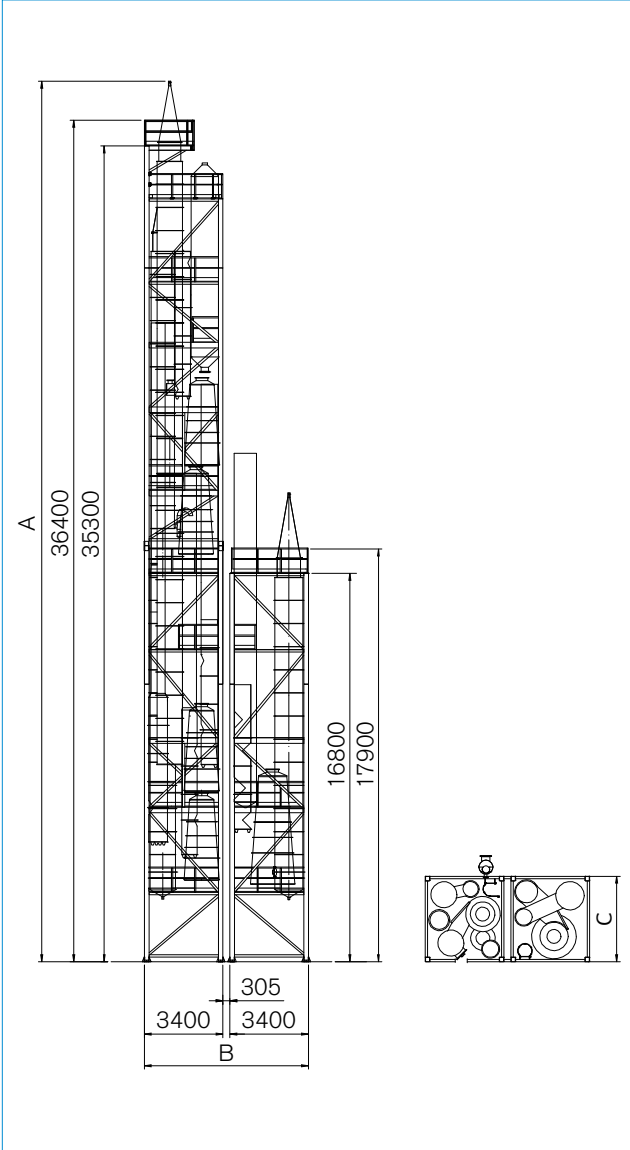
Multipurpose T.A.S.T.E. Evaporator

Specification approximate

- A* = Overall height 39100 mm (128.3 ft)
- B* = Overall width 7105 mm (23.3 ft)
- C* = Overall length 3700 mm (12.1 ft)

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

- Model 3314 (4 Effects)
- Model 3315 (5 Effects)
- Model 3316 (6 Effects)



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JBT's greatest value in PRoCARE® services comes from preventing unexpected costs through smart, purposeful, and timely maintenance based on unmatched knowledge and expertise. PRoCARE service packages are offered as a maintenance agreement in various service levels, depending on your production and cost management requirements.



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