



Up to  
**65%**  
savings in energy  
consumption

#### Key benefits

- Efficient & reliable multi-stage distilling process
- Low operational cost
- Lowest energy consumption in its range
- Designed for easy maintenance and longer service intervals
- Flexible adaptation to demand and/or supply (down to 50%) thanks to exceptional part-load capability
- High quality distillate  $\leq 5$  ppm
- Flexible use of heat sources: engine jacket water, steam or combination
- Suited for land-based applications
- Fully automatic system

## HiTE

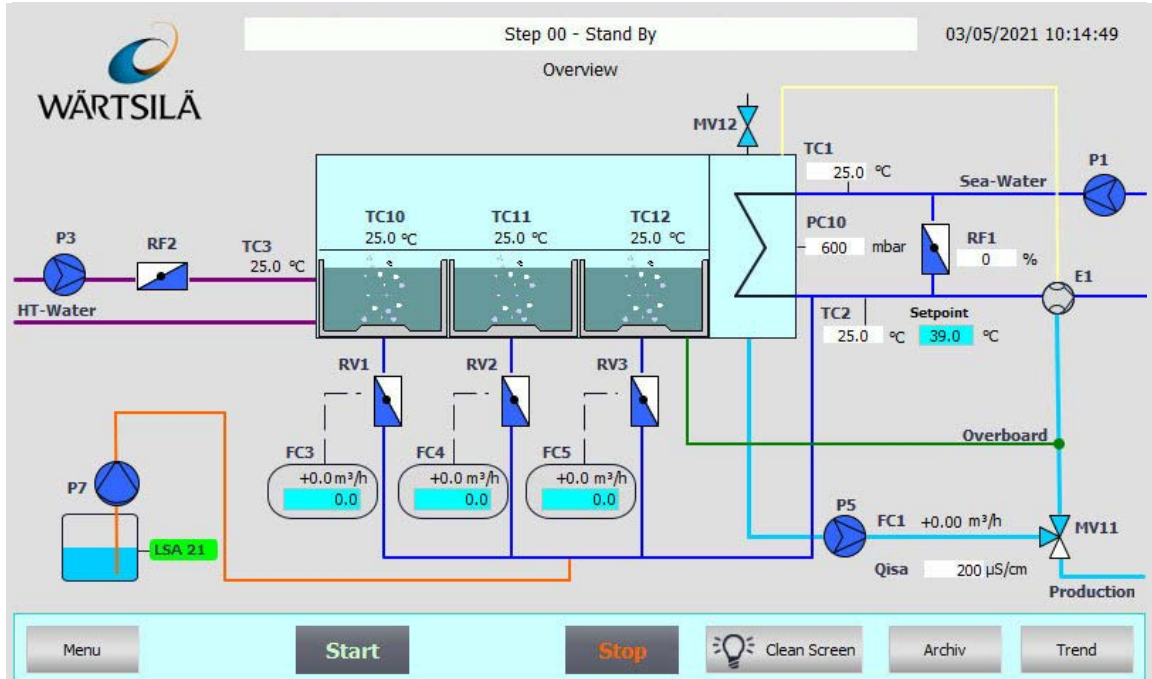
### Wärtsilä Horizontal inner Tube Evaporator

The Wärtsilä Horizontal inner Tube Evaporator (HiTE) is a multi-stage evaporator specifically designed for distilling small to medium capacities of 30 to 120 tons of clean water per day. It guarantees freshwater for human consumption or clean process water for technical applications. It serves in a wide range of operational areas where alternative technologies like reverse osmosis or plate technology reach their limits. Shallow waters with poor seawater quality is an example of this.

The Wärtsilä HiTE is suited for a wide variety of vessel types, including special vessels, chemical tankers and small cruise ships. Also offshore and land-based applications can be equipped with HiTEs.

The HiTE operates smoothly even at partial or low load, for example during dynamic positioning (DP) operations. The unit's control system is fully automated and its smart processes

adapt automatically to the amount of energy available. The HiTE is able to utilise waste heat, which is very convenient for vessels with varying engine profiles. A standard three stage HiTE offers up to 65% energy savings with a specific heat consumption of 240 kW/t compared to single stage designs (700 kW/t). For a four stage HiTE this is only 180 kW/t.



## Working principle

With the HiTE, evaporation takes place inside horizontally placed tubes. Seawater is fed into the tubes and heated from the outside with hot water or steam. Heating continues until reaching boiling temperature. Due to both the rise in temperature as well as a decrease in pressure during upstream flow, vapour is continually released. This vapour is finally condensed to the desired high-quality distillate.

The design uses multiple stages in which seawater is evaporated. The follow-up stage uses the heat from the previous stage to heat up the seawater. This way the energy is recovered, further increasing the total capacity of freshwater production and the overall efficiency.

## Features

- Capacity 30–120 tons/day
- Footprint: 1.8–5.4 m<sup>2</sup>
- Weight empty: 2,156–5,200 kg
- Seawater inlet temperature: 0–35°C
- Heating water inlet temperature from 70–90°C
- Thermal power consumption: 180-240 kW/t
- Electrical power consumption: 3 kWh/t

## Contact information

Spare parts & aftersales: please send vessel name, equipment type, serial number, company details and spares / service requirements to [wsc.aftersales@wartsila.com](mailto:wsc.aftersales@wartsila.com)

New sales, please contact [wsc.sales@wartsila.com](mailto:wsc.sales@wartsila.com)

## Delivered as standard

Tube evaporator with condenser; Distillate pump, Ejector pump, Seawater pump, Chemical dosing tank with dosing instruments, Solenoid valve for exhausting lower quality distillate, Siemens S7 control panel.

## Optional equipment

Mineralization filter for adjusting distillate pH-value, UV steriliser for disinfecting the distillate, Silver-ion steriliser for disinfection, Booster heater, Distillate cooler, Control panel mirroring.

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