Deaerating Heaters

Spray Tray

ECODYNE Limited

Ecodyne spray-tray deaerators are the most commonly used type within the industry. This type of deaerator is recommended when there is a requirement for a wide operability to handle a fluctuating process. A horizontally oriented deaerator vessel can be provided to accommodate larger outlet capacities.

Design Features

- Capacity that meets your specification
- Wide operating range
- Oxygen reduced to 7ppb (0.005mL/L) or less in the outlet stream
- Carbon dioxide reduced to negligible concentration in the outlet stream
- The water will be heated to within 2°F of the temperature of the saturated steam in the heater
- The unit will operate quietly from minimum to maximum capacity

Our Customers

- Exxon Mobil
- BP
- Shell
- Suncor Energy Inc.
- Imperial Oil Ltd.
- Dow Chemical Company

- **Self-adjusting spring-loaded spray valves provide a uniform spray pattern over varying loads.**
- **Increased spray distance ensures maximum heating and deaeration in the first stage.**
- **Upward flow of steam counter to the downward flow of water provides final contact of the deaerated water with the purest and hottest steam.**
- **Stainless steel tray enclosure and shroud ensures that non-condensable gases do not contact the carbon steel shell.**
- **Liberally sized equalizers pass flashing steam between heater and storage vessels under upset conditions.**
- **Optimum space below the tray stack provides reduced steam velocities and an even distribution.**

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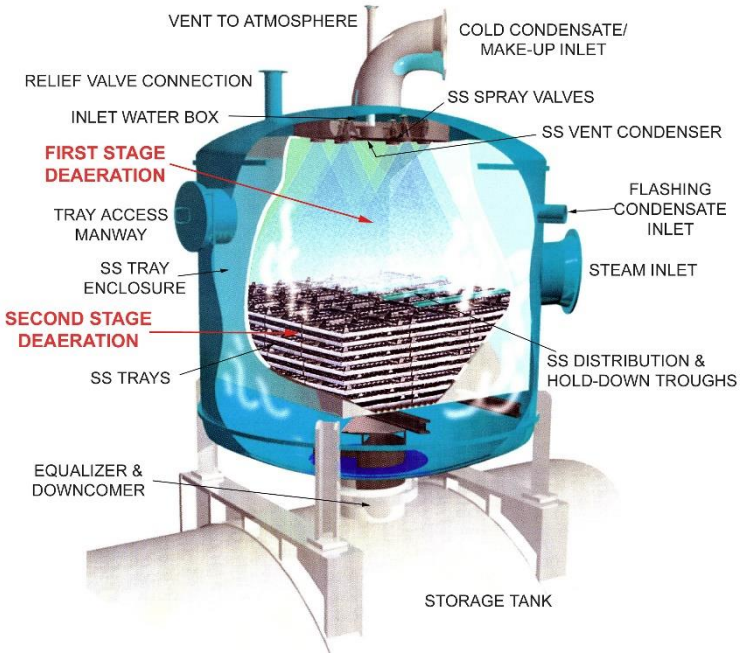
The Ecodyne Spray-Tray Deaerating Heater incorporates many exclusive design features that assure efficient and complete deaeration while at the same time offering rugged, corrosion-free construction.

Cold condensate and/or make-up enters the first stage of the deaerator through specially designed stainless steel spray valves that discharge the water in thin films into the steam space. The water is heated to within 2°F of the steam temperature and more than 95% of the non-condensable gases are removed.

In the second stage, the water sprays onto a series of distributing troughs and in turn spills uniformly on the trays beneath. The water then cascades down through the trays in thin uniform films, countercurrent to the steam. Fresh oxygen and carbon dioxide -free steam enters the tray stack from the bottom and flows upwards scrubbing out the last of the residual unwanted gases. The deaerated water flows from the lowest trays to the storage tank and is available as boiler feed-water at the temperature corresponding to the steam pressure in the deaerator.

The steam flows up through the tray stack to the first stage section carrying with it the non-condensable gases. These gases pass up to the vent condenser where most of the steam is condensed and falls back to mix with the incoming sprayed water. The non-condensable gases and a minimum amount of steam are vented to the atmosphere.



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