Counterflow Deaerator

Construction

Trays: Type 430 SS, pan type, riveted construction

Water distributor: 316 Stn. Stl. Lock-N-Load® Spray Nozzles

Design pressure: As required

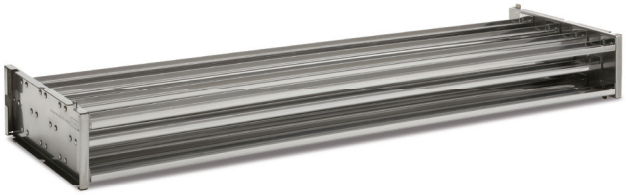
Deaerator top: Welded Steel Plate, ASME stamped

Storage tanks: Welded Steel Plate, ASME stamped

Vent condenser: Direct Contact Type with Stainless Steel baffling

Advantages

- Cost competitive for large capacity applications
- Highly reliable for attaining specified results over a varying load range
- Simplicity and rugged design offers cost savings for many applications, especially where a high percentage of condensate returns are introduced
- Easy access for spray nozzle inspection, even on smaller models
- Meets HEI requirements



Deaerating Trays

- Type 430 stainless steel, assembled with stainless steel rivets. Each tray assembly consists of eight or twelve tray channels arranged in two or three staggered tiers of four each, depending on application.

Principle of Operation

Incoming water flows through the spray nozzles and enters the vent condensing chamber as a thin-walled, hollow cone spray pattern. Latent heat transfer is instantaneous because of the intimate water-to-steam exposure.

As the water reaches the tray stack, its temperature is within 2° F of the saturated steam temperature, and virtually all dissolved oxygen and free carbon dioxide have been removed.

Nearly all of the steam has now condensed, permitting the non-condensible gases to be carried through the vent by the remaining steam, exiting as a plume.

The preheated water is distributed over the trays and flows down over staggered pans in the trays, making its way through pure steam flowing in the opposite direction. The water leaving the bottom layer of trays is fully deaerated.