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U.S. Deaerator Company. For all your deaerator, boiler feed, condensate, and water heating equipment needs.

US DEAERATOR TRAY TYPE DEAERATOR TYPICAL SPECIFICATION

DEAERATOR VESSEL:

The contractor shall furnish a US Deaerator model DT-____ tray type deaerator sized for _____ PPH outlet capacity and constructed to ASME code 50 PSIG minimum design (higher design pressures are **optionally** available) and from ASTM SA516 grade 70 carbon steel. An **optional** corrosion allowance is recommended to be at least 1/16" for the entire vessel to help insure longevity, especially in the storage tank. Greater corrosion allowance thickness (for example, 1/8") is inexpensive insurance and preferred for most applications, but not required.

The deaerator shall be comprised of two tanks, one vertical deaerator section (or a horizontal deaerator section for very large capacity units) mounted atop a horizontal storage section. The US Deaerator vertical deaerator section shall preheat the boiler feedwater to saturation temperature while removing oxygen down to 7 PPB and carbon dioxide down to 0 PPB. The vertical deaerator section shall be fitted with an 18" hinged manway door for traybox/tray access and contain a steam impingement plate at the steam inlet connection to provide for thorough steam distribution all around the traybox and to prevent wear in that area.

The US Deaerator horizontal storage section shall be fitted with a minimum of two mounting saddles to properly support the entire full flooded weight of the vessel. The storage tank shall be fitted with a minimum of one 12 x 16 manway for inspection access. Larger size manways are **optional**. The storage tank shall also incorporate a vortex breaker assembly at the deaerator water outlet connection. The storage tank is always sized for a minimum of 10 minutes storage capacity at full load condition and a ¾ tank level. Greater storage volume is **optional**.

The US Deaerator shall be fitted with a properly sized steam safety relief valve to handle the full open capacity of the steam pressure reducing valve that provides operating steam to the deaerator. This safety valve will be set at 50 PSIG to protect the vessels in the event of a runaway steam condition.

DEAERATOR INTERNALS:

The US Deaerator vertical deaerator section shall be fitted with heavy angle iron struts to fully support the traybox within. The traybox shall be constructed of minimum 10 gauge AISI type 304 stainless steel. The traybox design shall be a **counterflow design** which sweeps the contaminating gases upward to the vent while the incoming water flows downward through the trays to provide for the most complete deaeration (crossflow & parallel flow designs are not allowed).

The US Deaerator shall include the internal traybox, AISI type 304 stainless steel vent condenser, AISI type 304 stainless steel gas vent pipe, AISI type 304 stainless steel horizontal upward spray pipe for even distribution and atomization of incoming water (spring loaded spray valves are **optional**), 16 gauge AISI type 304 heating/distributing channel trays for increased retention time and even distribution of heated water and 16 gauge AISI type 304 stainless steel air separating louver trays for maximum spilling edge and the most complete deaeration possible.

The US Deaerator trays are assembled into groups of six deep stacks for simpler handling and installation. There is a one deep layer of heating/distributing channel trays and a three deep layer of air separating louver trays that make up a complete traybox assembly in order to provide for maximum heating potential, increased spilling edge and final deaeration.

The entire traybox assembly is **optionally** available as AISI type 2205 duplex stainless steel to provide greater longevity and resistance to corrosion and chloride attack when water conditions are challenging as in the case of a high makeup percentage/low condensate return system or a makeup water with very high chloride content.

MISCELLANEOUS:
US Deaerator offers special treatment and testing procedures such as Post Weld Heat Treatment, Wet Fluorescent Mag Particle Testing, Radiograph Testing, Ultrasonic Thickness etc., all available as an **option.** Full vacuum design is **optionally** available as well if necessary for the application.

The US Deaerator is always prime painted on the exterior at a minimum with **optional** finish paints available as needed. The interior is cleaned of any loose materials and or manufacturing debris but left bare as standard. **Optional** interior treatments such as desiccant or rust inhibiting flush are available.

Properly sized and located lifting lugs are always provided to insure adequate handling capability for loading, unloading and rigging the vessel. Welded on insulation clips are **optionally** available but not recommended since they can make the vessel difficult to handle and they are now normally applied on site by the insulation contractor via a special glued on clip at a lesser cost.

US Deaerator feedwater packages are **optionally** available complete with deaerator support stand, boiler feed pumps, steam & water controls, electrical controls, piping and wiring all as required for your specific application.