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Pride

Quality

Craftsmanship

BULLETIN 190



**TYPE
.005 DA-ISTP-2T/
STACKED
DEAERATING BOILER FEED PUMPS**

SHIPCO[®]
PUMPS *Deaerators can save you money!!!*

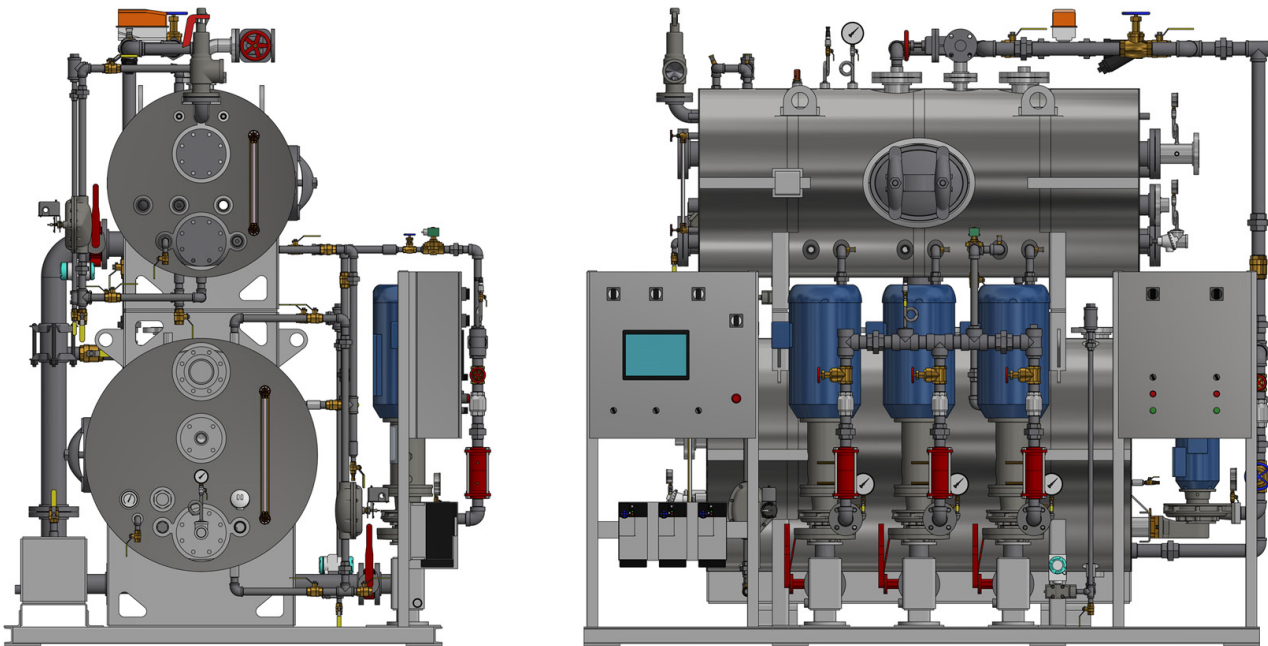
Shipco® makes stacked deaerator systems. What is a stacked deaerator system? It's a deaerator mounted above the surge tank and piped together in one piece in order to save money, time, and space.

Why consider a stacked deaerator?

In a crowded boiler room where a system has returns, a surge tank is required when there are more than 20% returns. To achieve proper .005 cc/L levels of deaeration, you need to control the swings using constant temperature. **Shipco®** controls these swings with a modulating level controller on the deaerator and a constantly running transfer pump on the surge tank which is pumping into a transfer/make-up valve between the deaerator and the surge tank. All the make-up water and returns in the system enter the surge tank and mix with the return water. Cold make-up water also mixes with the return condensate reducing the temperature swing upon entering the deaerator. The regulator reaction remains steady with regards to the slight temperature change. All this considered, a deaerator with a surge tank is necessary, but remembering your boiler room is crowded with limited available space.

Shipco® manufactures a “stacked deaerator” system in addition to our typical two-compartment and separate two tank units. In a stacked deaerator system, the deaerator is mounted above a surge tank, generally cast iron or stainless steel, and is piped together in one piece to save space and reduce installation time. Best of all, a stacked deaerator system still allows controlling all the swings or transients in your system. By controlling all the transients with modulating controls and allowing returns to enter a surge tank with pumps running continuously, temperature and capacity variations are minimized. Quick and sudden changes can also cause air to redissolve very rapidly.

Additionally, the surge tank can be cross connected for redundancy in your system so that when the deaerator is offline for annual inspections or other maintenance, you will have a backup ready to go in its place.



When is a surge tank used?

The general rules-of-thumb are as follows:

On systems with 80% or more make-up a surge tank is not required and the tank receiver can be oversized.

On systems with more than 20% returns a surge tank is required to achieve good deaeration. Simply making a deaerator larger costs more, especially with an ASME Code vessel, there's no backup and you may have no control over the swings or transients.

The bottom surge tank on a stacked system is the most material, **Shipco**® recommends cast iron with a 20 year warranty to 304L or 316L stainless steel since longevity is important.

Use a stacked deaerator configuration when the situation warrants such as when there is not enough floor or head space for a two-compartment deaerator nor two elevated, side-by-side deaerators. For example, a 12,000 lbs/hr unit to fit a 126"L × 68"W × 110"H footprint. **Shipco**® can produce any size or load rating in order to make the deaerator fit the space required. After all, there is no such thing as an off-the-self unit!

All **Shipco**® deaerators are made custom to fit a specific project or need.