

AFE Tank Vent Dryers

Eliminate moisture problem in vented closed system storage tank

Moisture poses a very serious problem for practically every situation where hygroscopic materials are kept inside a storage tank. The moisture is constantly drawn into the storage tank together with the ambient air whenever the material is filled or discharged from the tank and this creates a humid internal environment that can quickly degenerate the products being stored, adversely affecting its quality and drastically reducing its life span. Traditional methods have been proven to be quite ineffective in the removal of moisture which has continued to be the main source of problem for this type of material storage.

AFE Tank Vent Dryer was designed specifically for this purpose. It effectively eliminates moisture from the humid ambient air coming into the storage tanks and protect the hygroscopic material stored inside.

Features and Benefits of AFE Tank Vent Dryer:

- suitable for small to large storage tanks
- ensure air in the storage tank is dry, with low dew point
- keep pressure drop lower than 250 Pa or 2.5 mbar
- operate well in both cold and hot climate zone
- simple design, with only basic maintenance required
- equipped with pressure/vacuum relieve valve (optional)
- available with manual, semi-automatic or automatic control



The AFE Tank Vent Dryer is available in 3 main configurations to cater to different types and sizes of operation. The system can also be customized according to client's requirements.

1. Without regeneration of desiccant.
2. With semi-automatic regeneration of desiccant.
3. With fully automatic regeneration of desiccant.

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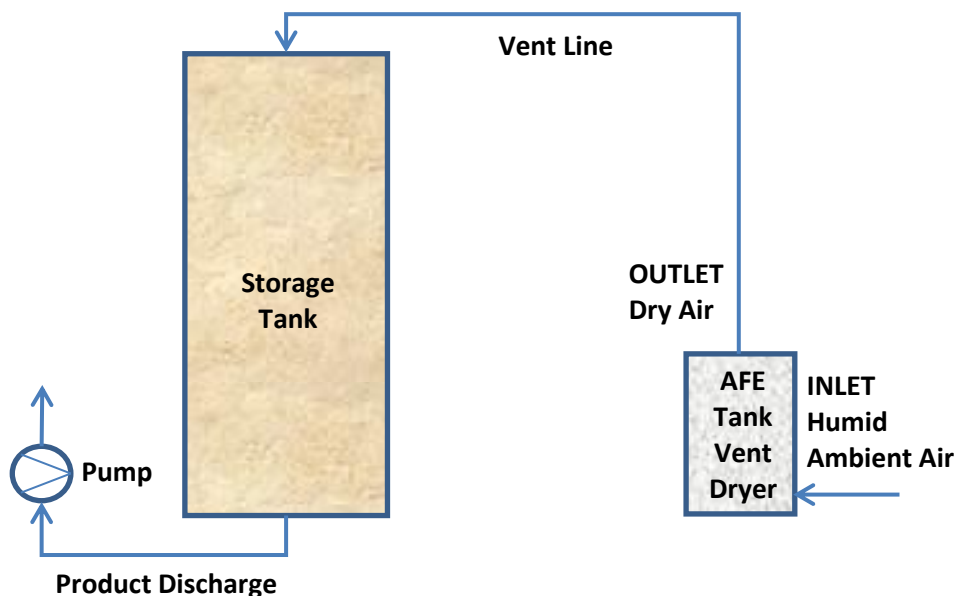
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How the AFE Tank Vent Dryer works:

AFE Tank Vent Dryer comes in 3 different configurations.

1. Without Regeneration System

The AFE Tank Vent Dryer consisting of a main vessel filled with high capacitive desiccants shall be installed at the beginning of the vent line of the storage tank. During evacuation of the storage tank, when the product in the tank is discharged, ambient air which is naturally drawn into the tank passes through the desiccant bed, gets dehumidified, before it enters the storage tank. After a certain time of operation, depending on dryer sizing, the desiccant in the vessel will eventually be saturated with moisture and needs to be replaced. This configuration, in terms of capital investment, is the most economical but operating cost tends to be higher because of the more frequent replacement of the desiccant after they become saturated. This unit is applicable for small simple storage operation.

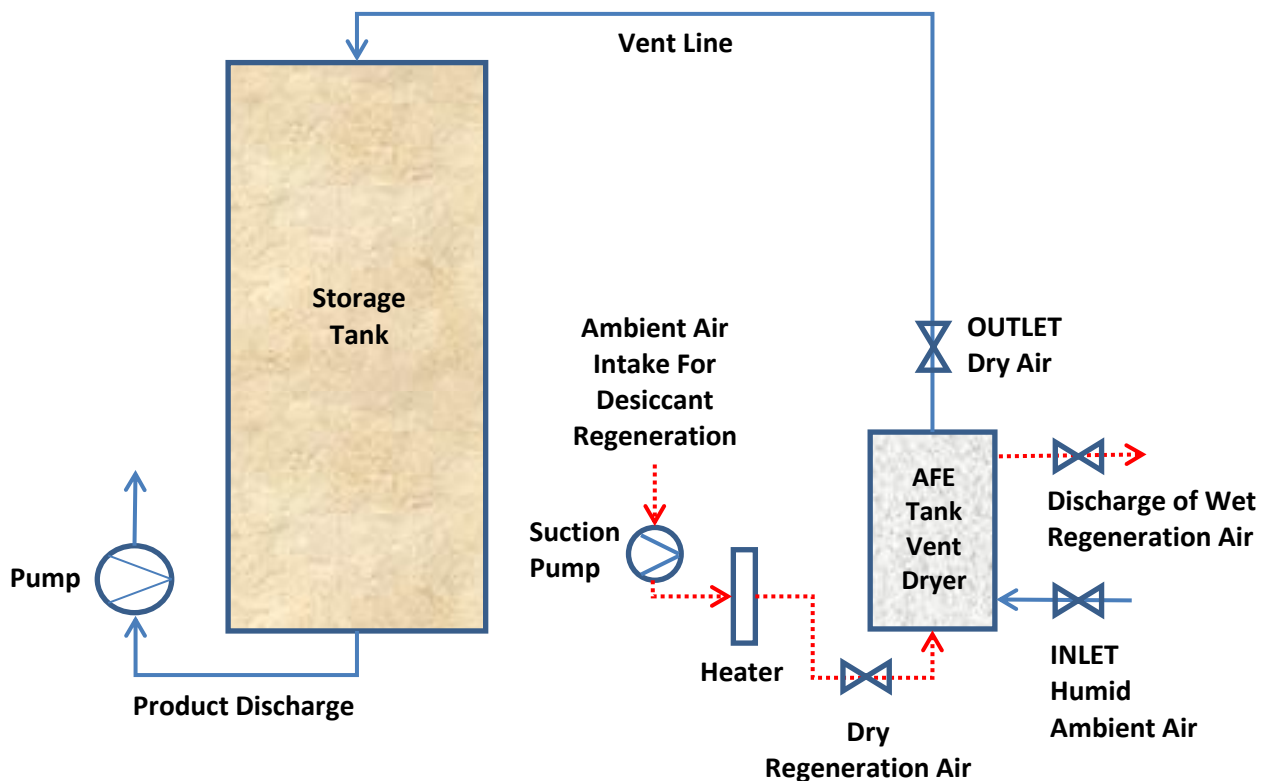


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2. With Semi-Automatic Regeneration System

The AFE Tank Vent Dryer consisting of a main vessel filled with high capacitive desiccants shall be installed at the beginning of the vent line of the storage tank. During drying, the function is the same as the manual regeneration system. The difference here is that the unit is equipped with a semi-automatic regeneration system to regenerate the desiccant bed after the desiccant becomes saturated with moisture. After the product is drawn out from the storage tank the system may be switched on manually by an operator to regenerate the desiccant bed. However, during regeneration the unit is not ready to de-humidify the vent air and the product discharging operation should be temporarily stopped. This regeneration process enable the desiccant to be reused for a certain number of cycle and hence saves the cost of frequent replacement of the desiccant bed after saturation. The system can be used for applications where the product in the storage tank is only drawn out once a day or less, and has at minimum 8hrs time in between operation cycles to enable proper regeneration of the saturated desiccant bed.

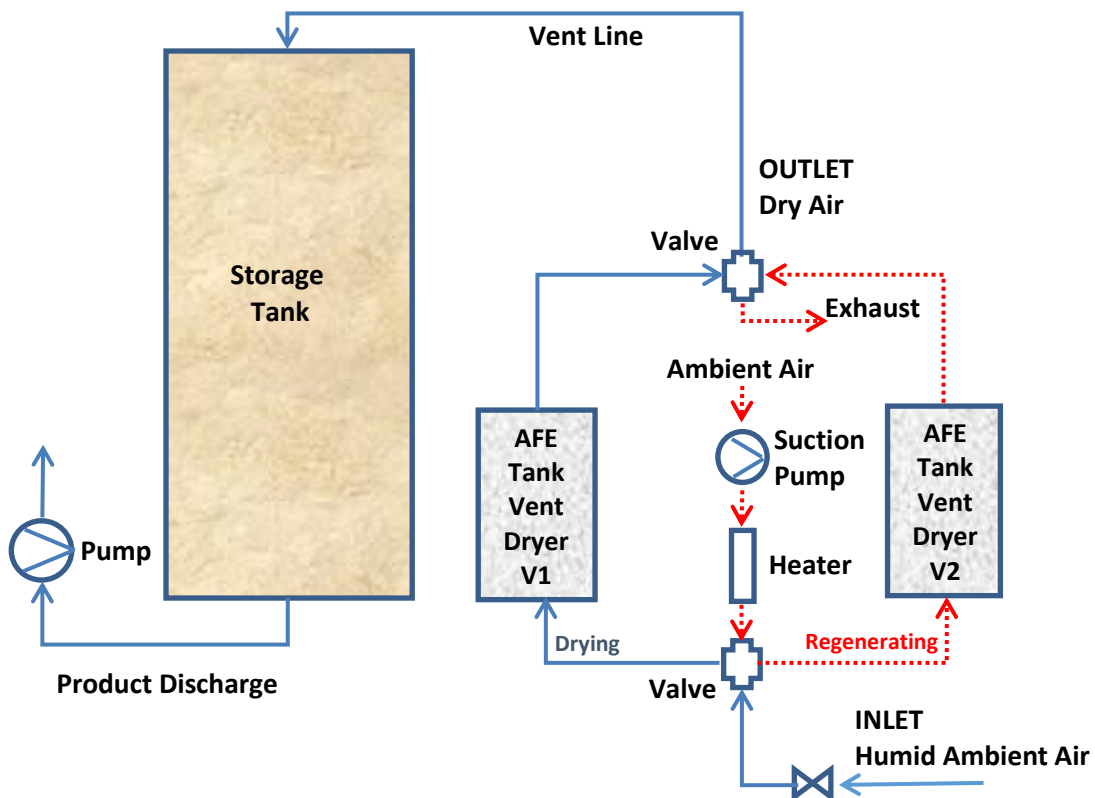


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3. With Fully Automatic Regeneration System

The AFE Tank Vent Dryer consisting of two main vessels filled with high capacitive desiccants shall be installed at the beginning of the vent line of the storage tank. During drying, the function is the same as the other two systems. Difference here is that the unit has two vessels filled with desiccant, instead of one. The two vessels go through a repeated alternative cycle of drying of the vent air and regeneration of the desiccant. While one vessel is going through the process of drying the vent air, the other vessel is automatically regenerating the moisture saturated desiccant inside. After a certain period of time, the desiccant in the drying vessel becomes saturated and the operation will automatically change over to start regenerating the moisture saturated desiccant while the other vessel which was regenerating earlier will take over the process of drying the vent air. The unit is electronically controlled to enable the cycle to be automatically repeated for continuous drying operation. This system is ideal for continuous operation of a storage tank. The capital investment is relatively higher but running cost is much lower and there is the added advantage of a fully automatic system with no operator required to be present during normal operation.



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How does this apply to your application?

Many storage tank comes equipped with vent pipes, filter caps, or turn down pipes to prevent contaminants from entering the tanks. These may help to filter out particulates but they are not efficient in removing the number one contaminant, which is water, especially in vapour form. To protect your storage tank from moisture and contaminants, a tank vent dryer should be installed.

AFE Tank Vent Dryer serve as your first line of defense against moisture contamination. The system is simple and effective. When connected to a storage tank, ambient air which is drawn into the storage tank during operation enters the storage tank via the tank vent dryer which will typically remove moisture down to less than 100 PPM moisture or 0.01% RH.

How do I order or select the AFE Tank Vent Dryer for my application?

To enquire about our tank vent dryer, kindly provide the following information:

1. What is the size of the storage tank (gallons / litres)
2. What is the storage tank material content?
3. What is the maximum content fill rate?
4. What is the maximum content discharge rate?
5. What is the connection to the tank vent?
6. What is the storage tank pipe size?
7. What is the amount of material cycling through the storage tank per day (24hrs)?

Please provide as much information as possible for us to make a recommendation.