Finite H-Series Compressed Air Filters Prepare Ozone for Wastewater Treatment

Market Application Publication



Background

Ozone generation has been a safe and reliable method for disinfection in industrial, agricultural, food processing, and public utility settings for over 100 years. Approximately 3,000 municipalities worldwide utilize ozone for their wastewater treatment.

Ozone is the strongest commercial disinfectant and oxidant on the market. In addition, ozone can be generated on-site, leaves behind no chemicals, and residuals are quickly converted back into oxygen. The components of an ozone generation system generally include a dry compressed air or pure oxygen feed gas system, an ozone generator, and an ozone contactor.

Corona discharge is the most popular method used for the production of ozone gas. The process involves introducing an electrical discharge into a feed gas (compressed air or oxygen) stream, which ionizes the oxygen (O_2) , converting it into ozone (O_3) .

Contact Information

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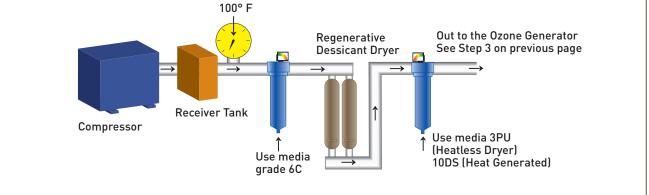
The Five Basic Components of Ozonation Process

Above are the five basic components Electrical **Exhaust Gas** of the Ozonation process. Step 1, Destruction Power Supply Feed Gas Preparation, involves using Finite's H-Series filters to remove 5 contamination from the gas stream. H.0 Feed Gas Ozone Ozone Contractor Preparation Generator 0. 4 **Ozonated Water**

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Parker Solution: Finite's Compressed Air and Gas Filters

Ambient air (as the feed gas) is compressed and collected in a receiver tank. A Grade 6 coalescing filter installed downstream of this equipment will protect the dryer against contaminants such as condensed liquids, compressor oil, and particulate. The clean air is then passed through a desiccant dryer to remove water vapor. During the process, desiccant dust can be generated. A particulate filter downstream of the dryer will provide filtration of any generated solid material. This very clean, dry air can now make its way to the ozone generator.



Application

The preparation of the feed gas before it enters the ozone generator is extremely critical. On average, over 90% of all coronadischarge ozone equipment problems and failures are due to the poor quality of the compressed air or oxygen. The gas compression and drying stages can introduce unwanted contamination such as compressor lube oil, condensed water and desiccant dust that must be removed.

Central California is plaqued with severe water shortages attributed to drought and a lack of water conservation programs. More than a handful of municipalities in this region have undertaken projects designed to treat wastewater. The use of ozone in some of these water systems makes it possible to remove unwanted tastes and odors, as well as destroy microorganisms, all with no environmental impact. The treated water can then be recycled for use as both supplemental irrigation and flushable toilet water, effectively increasing the use of available water sources and improving water quality. It is also a safequard, since some of this water eventually makes its way into surrounding lakes, rivers and the Pacific Ocean. In turn, costs that would otherwise be associated with the clean up of contaminated sources (contaminated agriculture, lake/beach clean ups, etc.) are drastically reduced.

Filter Element Types Used in this Application

Media type C



This coalescing element is made with our special UNI-CAST construction. Composed of an epoxy saturated, borosilicate glass micro-fiber media, this media is used in applications requiring the removal of liquid and particulate contaimination. This filter media in our standard grade 6 is 99.97%



Media type 3P

efficient at 0.01 micron.

Finite's 3P pleated cellulose element removes solid contaminants, with a 3 micron absolute rating. Because this element is designed to flow from outside to inside, it has a strong inner retainer that gives this element added strength.

Finite's Compressed Air and Gas Filters: H-Series

Product Specifications

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Pressure	Up to 500 PSIG
Port Sizes	1/4" to 3" NPT
Flows	10 to 1600 SCFM at 100 PSIG
Max. Temp.	175° F (450° F option available)
Elements Available	Coalescing, Particulate, and Adsorption Media
Accessories	Optional indicators, gauges, and drains

For more information on this product, please see Finite's Bulletin 1300-993C/USA.

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