BIONOMIC Industries Inc.

Your Clean Air, Product and Heat Recovery Solutions Partner

ScrubPac™ VentClean System

For HIGHLY Efficient Storage Tank and Railcar Vent Emissions Control

Overview

Bionomic Industries exclusive VentClean Scrubber is specifically designed to scrub storage tank and railcar vent emissions caused by breathing and filling operations, and is the latest edition to our enormously successful ScrubPac™ family of "packaged" scrubber systems. Due to its unique design, the versatile VentClean can handle single as well as multiple sources with large variations in venting rates with equally high removal efficiency. VentClean is available in four model sizes L, M, H, and EH to handle gas capacities from 0 to 1,500 acfm.

Available in two unique operating configurations, VentClean easily adapts to a variety of scrubbing liquid preferences. Type 1 is economically priced and configured to use water on a once-through basis. Type 2 incorporates a special circulation pump and uses water at a reduced consumption rate, or a chemical reagent such as sodium hydroxide on a recirculated batch basis.

Typical applications include removing acids, ammonia, alcohols, formaldehyde, amines, and almost any water-soluble contaminant.

Features and Benefits

Compact, HIGHLY Efficient Scrubber Design can achieve over 99% removal efficiency which exceeds EPA and state regulation requirements.

The First "Complete" Vent Scrubber Package available to industry at an attractive price.

Super Tough Corrosion Resistant Construction for long lasting in-field operation.

Low Pressure Drop Scrubber Design to avoid dangerous over-pressurization of relief designed fiberglass and plastic storage tanks.

55 Gallon Reservoir Capacity on Model Sizes L and M, 125 Gallon Capacity for Model H, and 315 Gallons for Model EH enables convenient reagent supply drum dispensing and spent reagent handling.

A Versatile Choice of VentClean Types using once-through water, recirculated water, or chemical reagents for maximum scrubbing solution flexibility.

A Complete Line of Accessories to meet your exact installation needs.

Available Options

VentClean's application capabilities are broadly extended with the following optional accessories:

High Temperature Construction to increase operating range from 140°F to 180°F.

Freeze Protection Package for Cold Weather Environments includes a 3/4˝ thick super poly insulation with electric heater and thermostat for the reservoir.

Exhaust Stack with Wet Weather Hood to eliminate rain, ice or snow from entering the unit.

Hazardous Area Rated Electricals for flammable or explosion-proof areas.

Operating Principle

Tank vent emissions are caused by the escape of stored chemical vapor through diffusion, displacement of gas volume in the tank during liquid filling and, in many cases, liquid discharge in the form of large droplets and fine mist during cleaning of tank truck lines with compressed air or inert gas after unloading.

During operation, vented gas containing these contaminants enter the ScrubPac™ VentClean's gas inlet. The gas proceeds into the reservoir section where it is subject to the first stage of a unique three stage scrubbing process.

The first stage utilizes an impaction collection area where large entrained liquid droplets are collected into the scrubbing liquid sump directly. A special waterfall design concept enhances the impaction collection of large droplets in this preliminary cleaning stage. The large volume reservoir acts as a heat sink to safely reduce temperature buildup caused by the absorption of the chemical contaminant in the scrubbing liquid.

In the second stage, the gas containing vapor with smaller micron size mist proceeds into the scrubber's packing fill section for removal of the gaseous component. On the Type 1 VentClean, water is fed once through to a low-pressure energy saving water distribution system to uniformly irrigate the packing fill. On the Type 2 VentClean, a highly reliable recirculation pump feeds water or chemical reagent to the distributor to minimize or completely eliminate water usage.

In the final third stage, the cleaned gas with fine mist proceeds into a mist removal section for collection before exiting the unit.

ScrubPac™ VentClean System

Clean Gas Outlet

Special recirculation pump with weatherproof TEFC motor encloser can run dry without damage (VentClean Type 2 Units)

Highly efficient scrubber packing fill/mist cleaning second and third stages

Fill connection

Gas Inlet to first stage precleaning section

Pumped blowdown for convenient reservoir emptying and disposal. (VentClean Type 2 Units)

Hold down lugs to meet seismic and/or wind load conditions

Generous large capacity seamless reservoir with see through liquid level

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