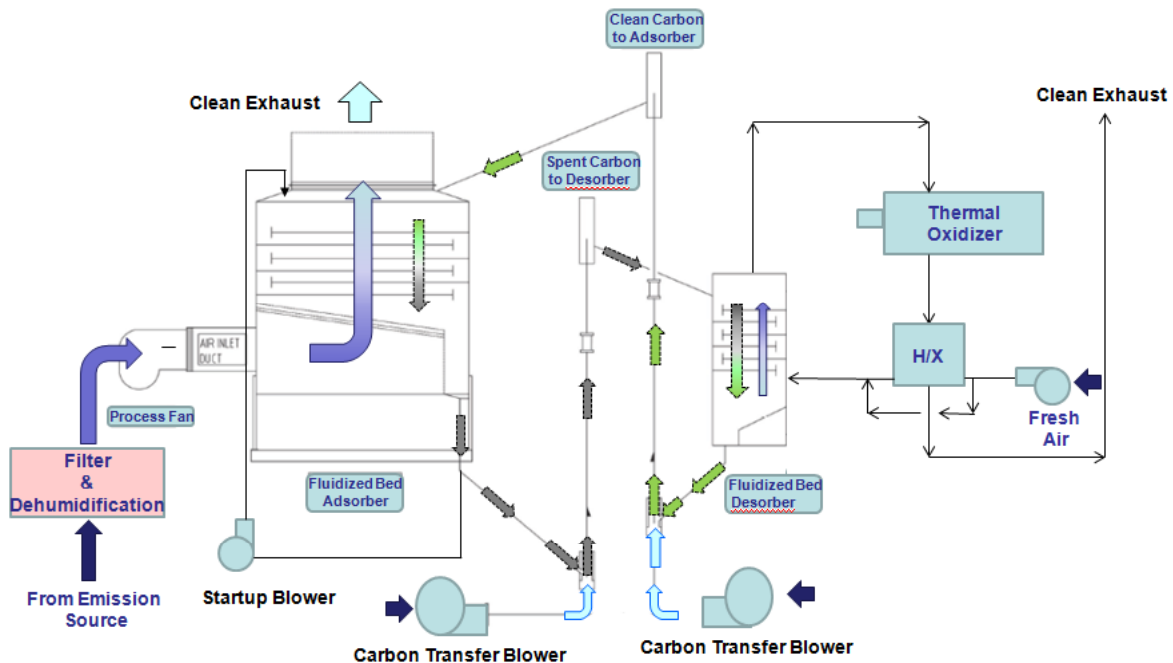


Fluidized Bed Carbon VOC Abatement

Description: The TKS Fluidized Bed Carbon (FBC) Abatement system consists of an Adsorber Section, Desorber Section and Final control device. The Final control device typically consists of a thermal recuperative oxidizer, however it could also consist of a solvent recovery system or other abatement devices. The FBC is a simple, energy efficient, cost effective system to remove/abate solvents from exhaust streams. The adsorber section consists of s.s.trays that provide a means for activated carbon beads to fluidize and adsorb solvents. The solvent laden beads are transported via tubes/air blowers to a desorption column that also consists of fluidization trays.

Hot gas (typically air) is used in the desorption column to strip the solvent from the carbon beads. The concentration desorption air volume is then ducted to the final control device, typically a small oxidizer. The volume of air handled by the oxidizer is a small fraction of the volume of process exhaust air. Ratios of 5:1 up to 1000:1 and higher process air to oxidation air are possible. By reducing the oxidizer size, the cost and energy use for the system are kept to a minimum. Solvent Destruction/Recovery efficiencies of 95%+ are possible depending on concentration and types of solvents in process stream.

Figure 1. FBC abatement system w/ Thermal oxidizer



Features:

- Stainless steel Adsorption Column
 - Stainless steel Desorption Column
 - Carbon Beads that are inexpensive and able to be regenerated off site.
 - Reduced Capital Costs
 - Reduced Energy use and CO2 emissions
 - Simple design, easy to maintain
 - Very cost effective for high volume, low concentration solvent emission streams.
 - Lightweight, roof mounted or ground mounted installations possible
 - Modular design, fast installation and startup
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Figure 2. Activated carbon beads



Figure 3. Typical FBC Installation



Specifications and Performance Data

- System air flow range- 1000 to 70,000 CFM per unit. Units can be combined to any higher CFM amount.
- Solvent removal efficiency- over 95% possible depending on concentration and solvent content.
- Concentration factor 5:1 to 1000:1
- Inlet humidity- controlled to 60% or below
- Inlet temperature- Maximum 95 deg. F