Amerair Industries llc
The Engineered Solution to Air Pollution

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PRODUCT BULLETIN
CIRCULATING DRY SCRUBBER

Amerair is pleased to announce the introduction of Circulating Dry Scrubber technology to its complete line of acid gas control products. Based on the experience of its resident personnel who have applied this process on a number of high SO2 and HCl applications, Amerair has developed its own optimized version of this process.

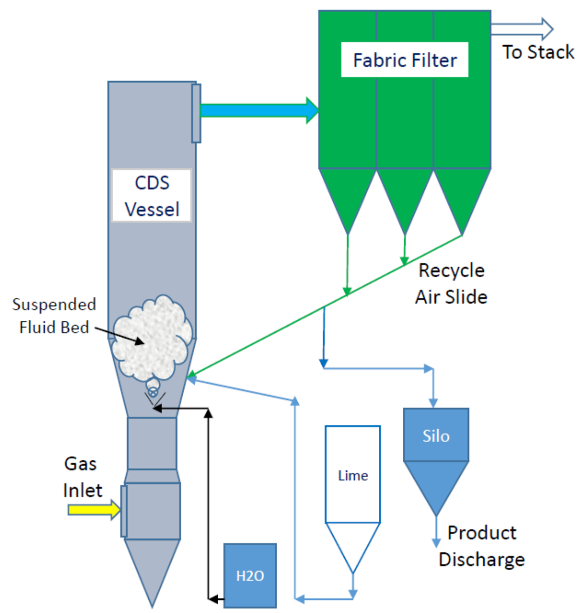
As shown in the graphic representation, the process is based on a reactor vessel in which the gas to be scrubbed is introduced into the bottom of the vessel and accelerated through a venturi section to apply sufficient dynamic pressure to suspend a dense fluid bed of recycled reagent and fresh hydrated lime. Capture of acid gases is enhanced by the addition of sufficient water to the fluid bed to allow for a close approach to the adiabatic saturation temperature of the gas allowing a high rate of capture on the surface wetted dense reagent bed. Total evaporation of the introduced water occurs within 4 to 4.5 seconds at the vessel top discharge, allowing dry capture of particulate downstream.

Final particulate control is handled by a fabric filter which also serves as a reagent recycle storage device to control fluid bed density.

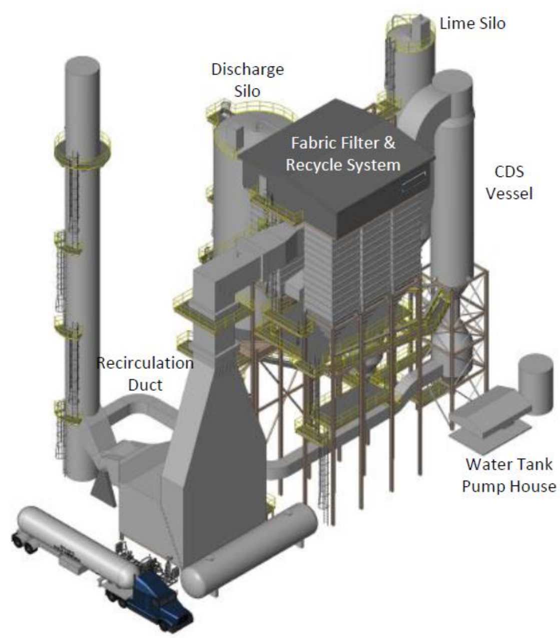
System Capabilities Include:

98+% SO_2 Removal
99+% HCl Removal
95+% SO_3 Removal
About ½ of the Lime Usage of other Semi Dry Scrubbing Processes

CIRCULATING DRY SCRUBBER PROCESS

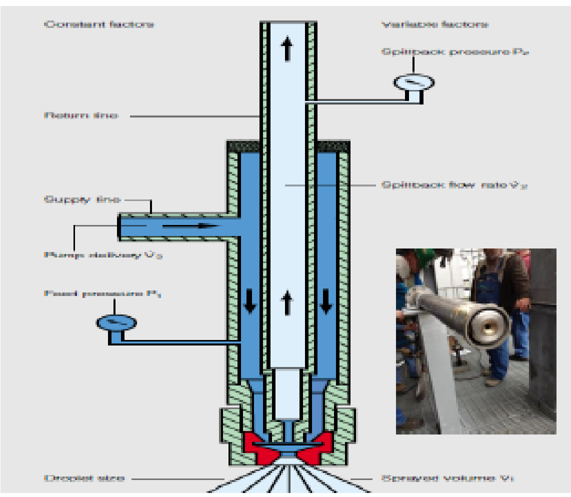


SOLID MODEL FROM PROPOSAL



Attention to detail separates Amerair from many of its competitors. While hydraulic high pressure nozzles are the standard of independently introducing the required water into the vessel, Amerair's proprietary shrouding reduces the potential for reagent buildup on the nozzle face.

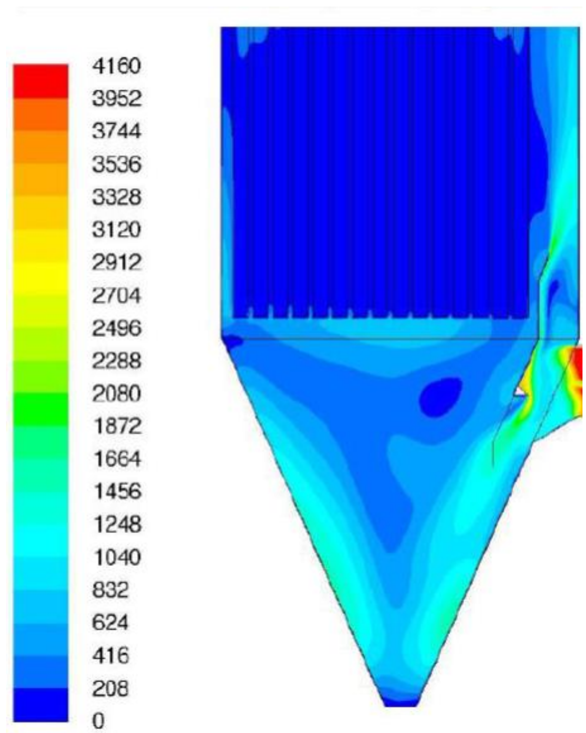
Hydraulic Spill Back Nozzle



Process control is also critical to reliable operation of the system under varying conditions upstream. Amerair applies continuous measurement of the wet bulb temperature at the vessel outlet to ensure dry product carryover to the filter as well as maintaining optimal approach to adiabatic saturation thus minimizing the usage of reagent.

Other internal features of the vessel such as; reagent and recycle entry and baffling are CFD modeled for each case to ensure optimal system operation.

Due to extremely high particulate carryover from the fluid bed (in the range of 300 grain/ACF), fabric filter design must be tailored to maximize inlet separation of particulate directly to the hopper and minimize updraft (can) velocity between the filter bags. Amerair again applies intensive use of CFD modeling targeted at the inlet to the compartments as shown in the example below:



Amerair has also addressed and solved the problem of some fabric filters whose inlet dampers stick due to high material build up when a compartment is off line for maintenance. This proprietary modification of the inlet manifold and damper configuration is not shown in this bulletin to avoid copying by our competitors.