

HOPPER SYSTEM AND ELECTROSTATIC GUN FOR INJECTION OF AN ELECTROSTATICALLY CHARGED SORBENT INTO A POLLUTED GAS STREAM

ABSTRACT

A hopper system (11) and electrostatic gun (12) is disclosed for injecting electrostatically charged sorbent particles (15) into a polluted gas stream (A). The invention includes a hopper system (11) with a mass flow hopper (16). Air from a regenerative blower (24) mixed with the sorbent (15) and transport the sorbent (15) into an electrostatic gun barrel (36). A charging wand (37) provides electrostatic charge to all the sorbent particles (15) which are then passed into a polluted gas stream (A) where the sorbent particles attract submicron size pollution particles. Agglomerized sorbent (15) and pollution particles are passed through a series of filter beds (13, 14), cleaning the gas stream which is then vented to the atmosphere (93).

Fig. 1.