VIBRATORY FEEDER : Standard operating procedure

Rev. 08/02/2013

Description

The vibratory feeder is used to feed the spark-sensitive and conductive powder into the gas stream. A carrier gas flow is supplied to the tube. The powder loaded into the hopper does not fall through the opening until the entire assembly is vibrated using the wave generator sending the pulses to a speaker; the amplitude and frequency of the vibrations are adjusted to achieve a steady aerosol flow. The exit tube of the vibratory feeder is bent and inserted into an orifice to ensure one-dimensional vibration and particle flow along the vertical

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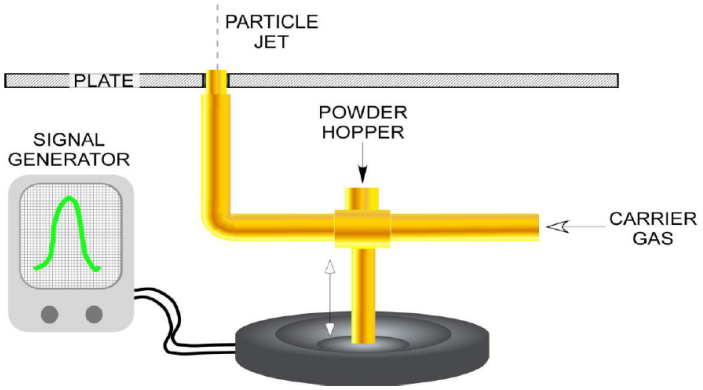

Before loading powder:

1) Wear the goggles, lab coat, gloves, and ear protectors (ear plugs) when operating the setup.
2) Ensure that the signal generator is turned off.
3) Ensure that the valve in the gas lines are closed, and no gas entrains the feeder.
4) Prepare the powder to load into the ESAG.

Loading Powder

1) If necessary, discard the powder residue in the powder hopper clean it with the dust cleaner.
2) Load with the spatula the necessary amount of powder (typically, until the hopper is full) into the powder hopper.
3) Ensure that the vibratory feeder is tightly inserted into the orifice.

Starting the ESAG:

1) Turn on the signal generator.
2) Open the gas line valves.
3) Adjust the gas flow rates, using the flow meters and knobs on the flow control panel.

During the run:

1) Monitor the amplitude and frequency of the generated signal according to the needs of the experiment.
2) Monitor the carrier and gas flow rates according to the needs of the experiment.

Shutting off the feeder:

1) Turn off the signal generator.
2) Close the valves in the gas lines.