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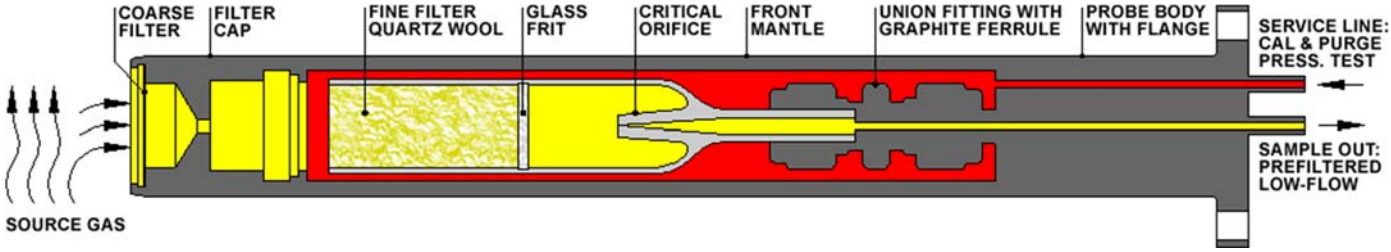
ASI Model ESP-050 Series

Direct Extractive Sample Probe

For your CEMS, RATA, and PROCESS GAS Sampling …

The **ASI Model ESP-050** Series **Direct Extractive Sample Probe** ("**ESP**") is designed to function as a low-flow sample filtering and metering instrument. It is a variant of our originally designed *Straight Extractive Sample Tip* (aka "SEST"). The ESP Probe prepares the sample from the stack (duct or process) so that it can be measured accurately and precisely by the analyzer (typically a "source-level" analyzer). The ESP-050 probe, connected to an external suction pump (integral to your analyzer or other mechanical or air driven educator pump), extracts a continuous sample from the source gas stream. The gas sample is then passed consecutively through coarse and fine particulate filters (mesh screen, quartz wool, and sintered frit), a preselected glass or metal critical orifice, and is then transported to the analyzer. The critical orifice (sonic orifice) serves as the flow metering component to ensure a constant and precise flow rate for the gas extraction. A secondary line, referred to as the "service line", is also located on the back of the probe. This line can be used for calibration gas, blow-back (purge), and sample pressure monitoring.

In comparison to our popular **DP-049** in-situ dilution extractive probe, the **ESP-050** probe is more desirable for applications where either a source-level analyzer is to be used, or where the sample gas concentrations to be monitored are already in a low range (and an ambient-level analyzer is to be used). Since there is no "diluting aspirator" built into the ESP-050, any moisture present in the sample stream will not be reduced to levels below the dew point. Originally designed for "hot/dry" gas applications, the ESP-050 can be fitting with a heated sample line (by customer) to prevent sample condensation due to low ambient temperatures. ASI also has designed and developed an optional probe heater, for the more challenging in-situ applications where source moisture and probe-filter fouling are a concern. The optional probe heater may also be used where strong variations of the process temperature, and consequently of the probe, may be expected. As there is no diluent motive air to accelerate the sample flow rate to the analyzer, special attention should be paid to sample line length (to the analyzer), to ensure that any sample delay time requirements are met.



- Filters particulate using both coarse and fine filtering methods, as well as low-flow extraction
- Precise low-flow sample flow rates (standard orifice sizes from 20ml/min to 500ml/min)
- Wetted parts from Inconel® 600
- Operating temperatures up to 750°F (400°C), or Hight Temp versions to 1000°F (540°C)
- Many critical orifice selections (Standard Glass, or special Quartz, Monel-400, and Stainless-316)
- Special coatings by SilcoTek® available (such as SilcoNert®, Dursan®, and Silcolly®)
- Optional probe heater available