

FIELD PROCEDURE 17 Particulate Matter

Note: The sampling and analytical procedures are the same as Method 5, except for the following (Use Method 5 data sheets, except do not use the column for Filter Holder Temperature in FDS 5):

A. Sampling Train

1. Do not use this method in stacks that contain liquid droplets or are saturated with water vapor.
2. Thimble glass fiber filters may also be used.
3. An interference free arrangement of in-stack filter assembly and Type S pitot tube (see Figure F17-1) must be used, or the pitot tube must be calibrated as assembled.
4. Flexible tubing may be used between the probe extension and condenser. Long tubing lengths may affect the moisture determination.

B. Preliminary Determinations

1. Make a projected-area model of the probe extension-filter holder assembly, with the pitot tube face openings positioned along the centerline of the stack, as shown in Figure F17-2.

2. Calculate the estimated cross-section blockage, as shown in Figure F17-2. If the blockage exceeds 5% of the duct cross sectional area, the tester has the following options: (1) use a suitable out-of-stack filtration method or (2) use separate sampling and velocity measurement sites.

C. Sampling

For the leak-check procedure, use FP 5a with the following modifications:

1. Plug the inlet to the probe nozzle with a material that will be able to withstand the stack temperature.
2. Insert the filter holder into the stack and wait about 5 min (or longer, if necessary) before turning on the pump to allow the system to come to equilibrium with the temperature of the stack gas stream.

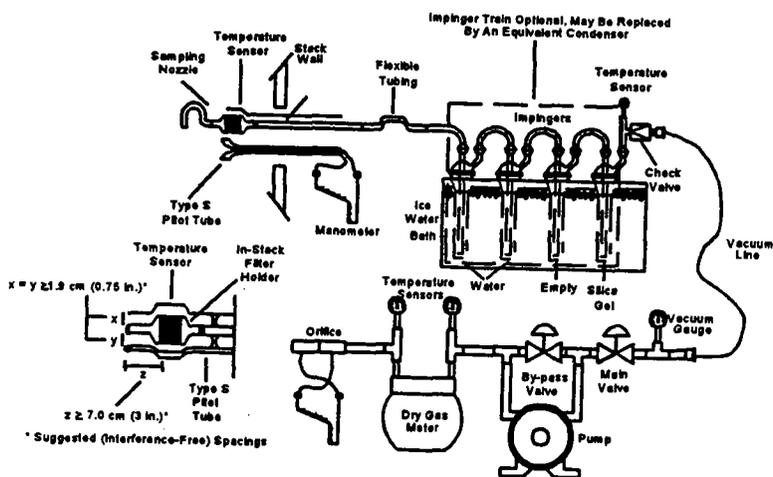
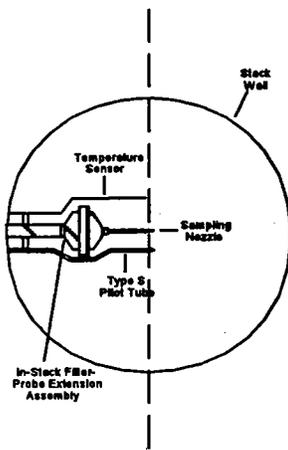


Figure F17-1. Particulate Sampling Train, Equipped with Stack Filter.



$$\text{Estimated Blockage (\%)} = \left[\frac{\text{Shaded Area}}{\text{Duct Area}} \right] \times 100$$

Figure 17-2. Projected-Area Model of Cross-Section Blockage (Approximate Average for a Sample Traverse) Caused by an In-Stack Filter Holder-Probe Extension Assembly.