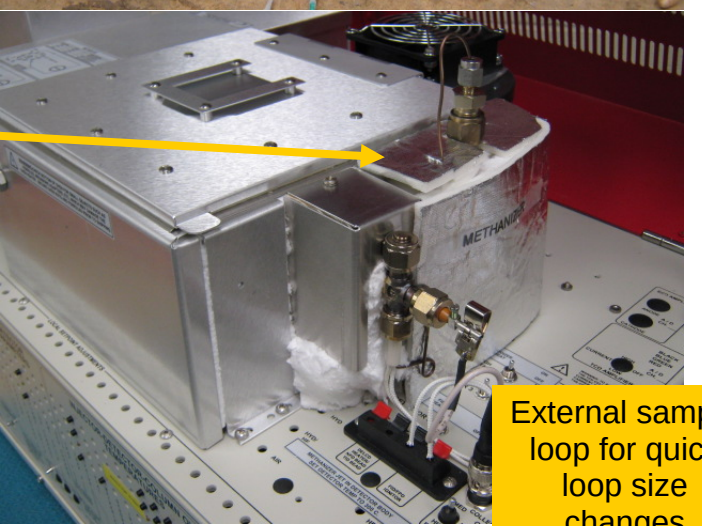
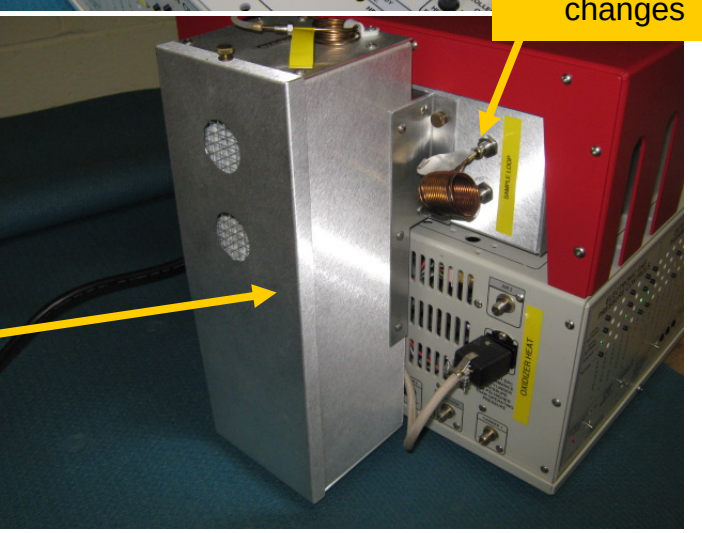
EPA Method 25 (true carbon counting)
GC configuration part# 8610-1025

EPA Method 25 specifies a GC which is equipped with an oxidizer catalyst, a reduction catalyst (methanizer) and FID detector which together convert all hydrocarbons (and CO, CO2) to methane for the purpose of measuring the true carbon content of the sample without the errors due to differing FID response to different molecules (all molecules are converted to methane prior to the FID).

The Method 25 GC configuration includes a high capacity reduction catalyst (methanizer) which is mounted near the FID detector. The high capacity methanizer is designed for long life and for easy catalyst replacement in the event of poisoning. A convenient on/off switch allows the catalyst temperature to be reduced for efficiency testing. The methanizer is normally operated at 380C.

An oxidizer catalyst and oxygen/air supply EPC (electronic pressure controller) is mounted on the GC.





External sample loop for quick loop size changes

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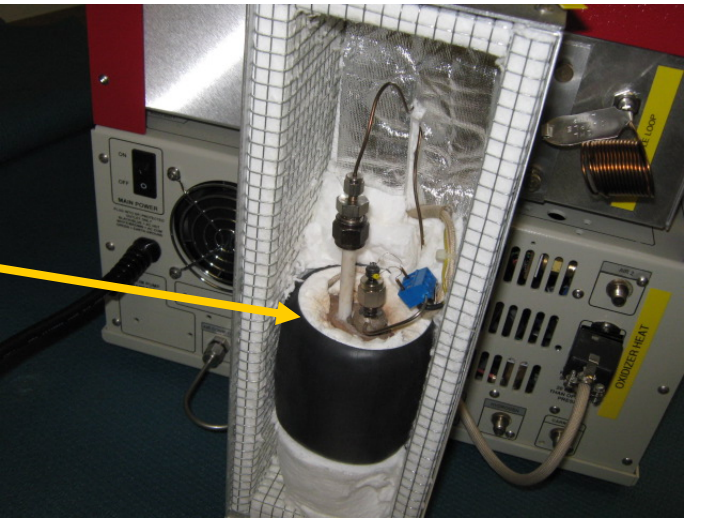
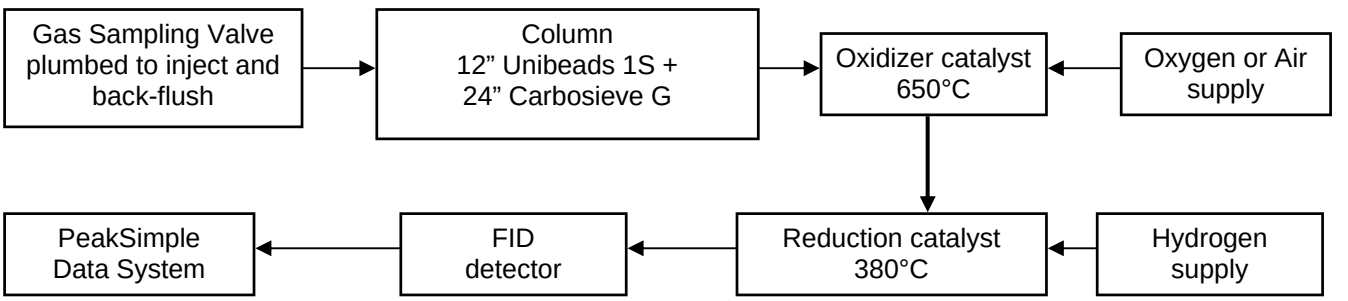
The oxidizer catalyst is operated at 650-700C and is constructed of ceramic with a platinum thermo-couple for long service life.





A typical calibration standard chromatogram is shown at right. The gas sampling valve back-flushes all hydrocarbons into the catalysts and FID detector after the CO2 peak. Because all peaks are converted to methane, the back-flush peak represents the true carbon content of all the various hydrocarbons in the back-flush.