

Base Unit - Performing a sample flow check

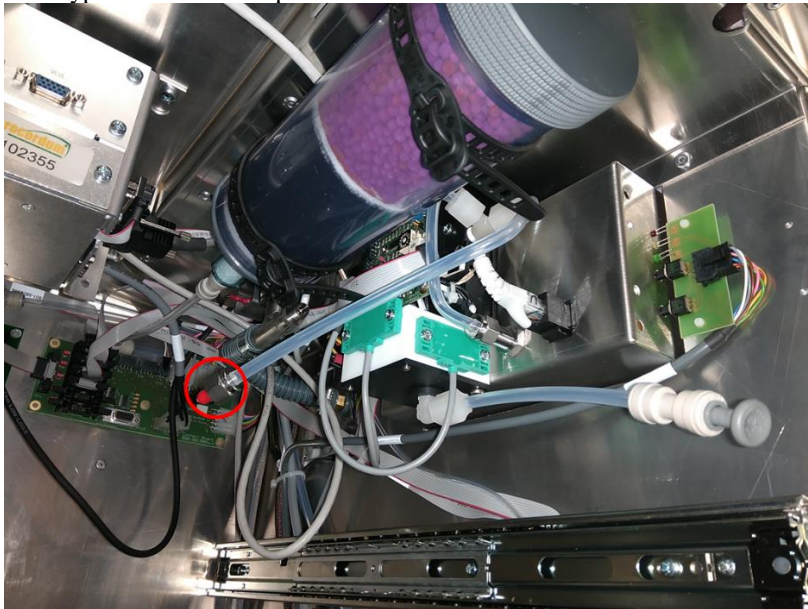
1 Tools you need

- A calibrated flowmeter capable of measuring flows in the 0-3000 cc/min range to measure the gas flow rate through the analyzer. DO NOT use the software of the instrument. This measurement is only for detecting major flow interruptions such as clogged, plugged, or pinched gas lines.

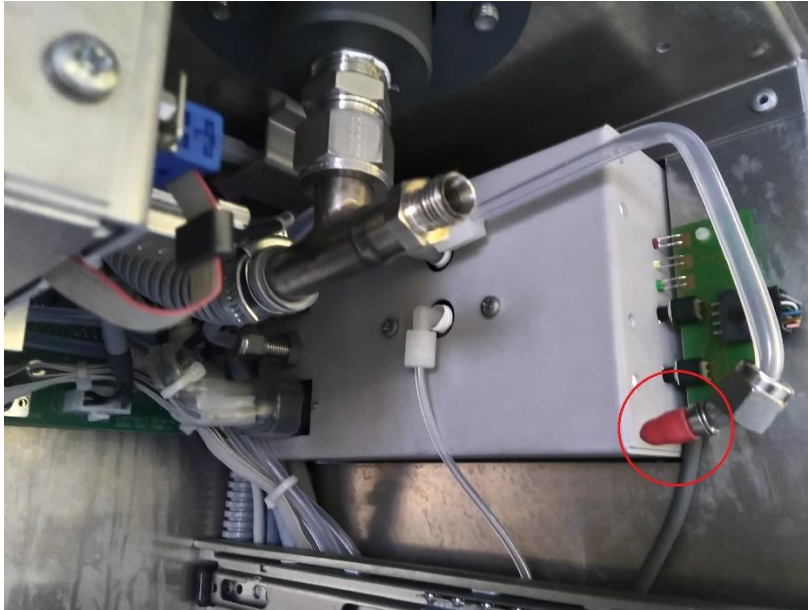
2 Perform a total sample flow check

- 1- With the instrument running, open the airpointer's main door. Plug the bypass of the airpointer and connect the flow meter to the calibration inlet in the maintenance door. Ensure that the inlet to the flowmeter is at atmospheric pressure.

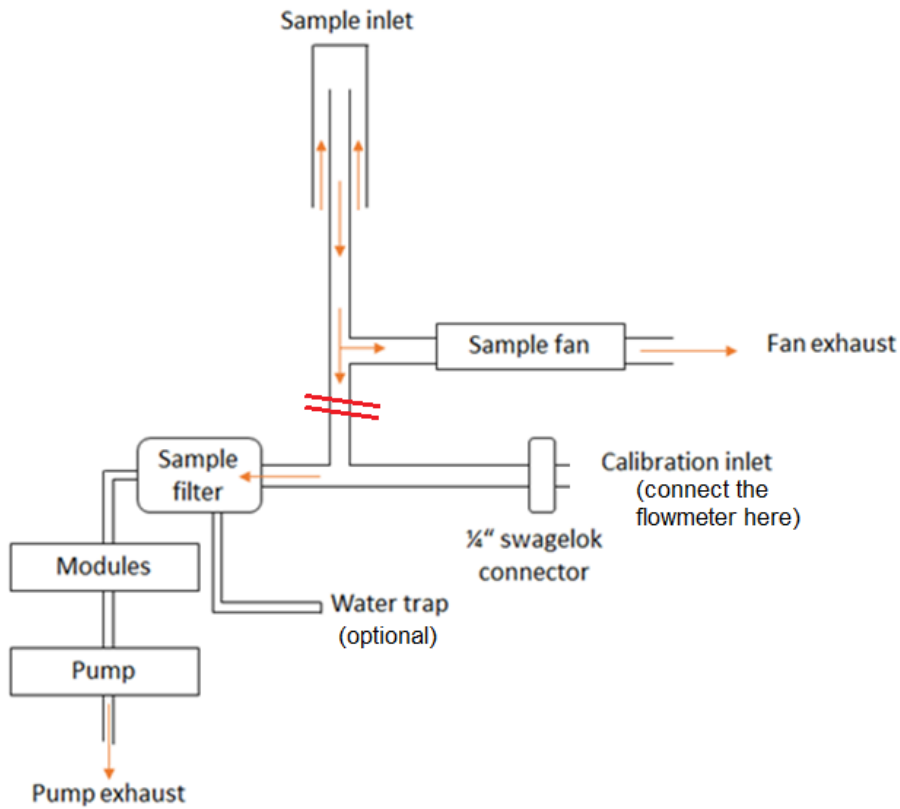
Bypass of the HC airpointer:



Bypass of the 2D and 4D airpointer:



NB: The bypass circled in red in the 2 photos above is the T junction allowing the excess gas to escape through the sample fan.



2- Compare the flowmeter reading to the total sample flow according to the following table:

Module	Sample flow rate (cm ³ /min ± 10%)	
	Thermo benches	API benches
O3	1000	550
CO	500	550

SO2	500	550
NOx	1000	500
O3 gen of the NOX	100	60

The sample flow is dependent on the module. Therefore, add up the flow rates of all modules installed in your airpointer. Then compare this total flow rate with that of the flowmeter reading. The values should be the same within $\pm 10\%$.

- 3- If the external flowmeter shows the correct value, compare this value with the one of the internal flow sensors. Again, both values should match within $\pm 10\%$

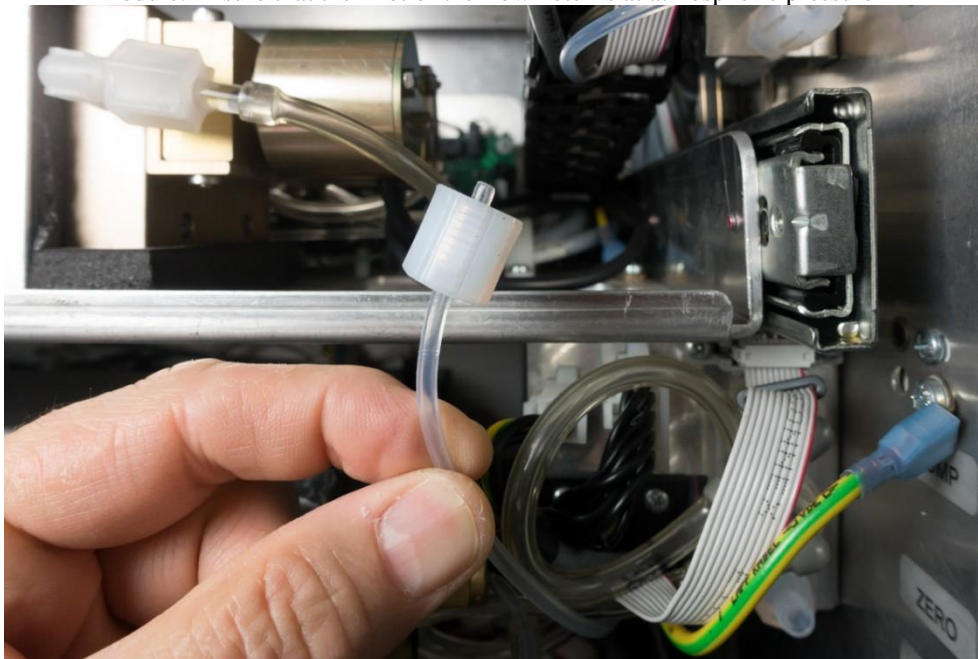
- 4- If the value indicates an error, check fittings and pipes for tight and proper connection and repeat all maintenance steps. After every replacement, perform a leak check!

3 Perform a module sample flow check:

- 1- With the instrument running, open the airpointer's main door
- 2- Locate the sample inlet of each module (noted as "Sample" or "S"). Each module installed in the airpointer has a separated sample inlet



- 3- Disconnect the sample inlet of the desired module. Attach a flowmeter to the sample tube leading to the module. Ensure that the inlet of the flowmeter is at atmospheric pressure



- 4- Compare the flowmeter reading to the sample flow according to the table from the page 1. Both values should match within $\pm 10\%$

- 5- If the value indicates an error, check fittings and pipes for tight and proper connection and repeat all maintenance steps. After every replacement, perform a leak check.

NB: in most Airpointers, a double piston pump is used: one piston for the O3 and CO modules, and one for the SO2 and NOx. Therefore, a leak in the NOx module for example can affect the flows in the SO2 module.

