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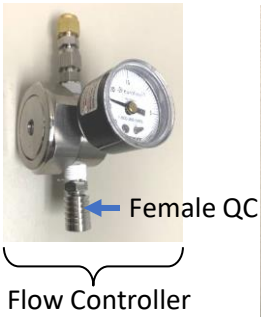
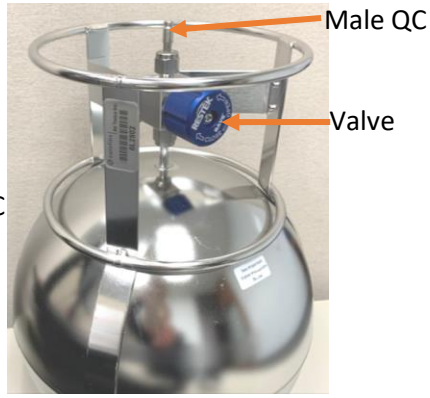
Field Sampling Procedure Using Canisters with Quick-Connect (QC) Fittings: Ambient & Indoor Air Collection Using Mass Flow Controller

Equipment provided by the laboratory:

- Evacuated Canister
- Calibrated Mass Flow Controller (MFC) with rough field vacuum gauge
- Chain-of-Custody (COC)
- Sampling Cane (optional for indoor air, recommended for outdoor air)





Preparing the canister for sample collection:

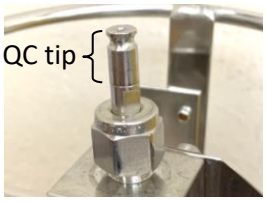


Figure 1. Male QC fitting check

1) Confirm canister valve is closed.

2) Check the male QC on the canister and verify the stem tip is tight. If loose, finger tighten by screwing tip clockwise (Fig 1.)

3) To install the flow controller on the canister, pull back on the sleeve of the female QC fitting (Fig 2.)

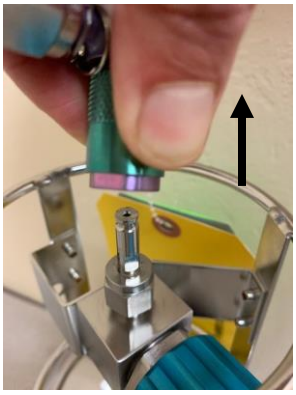


Figure 2. Female QC installation

4) Place the female QC fitting over the male QT fitting located on top of the canister, then release the sleeve once fully seated. Gently pull up on the flow controller to make sure it is securely connected to the canister. Once installed, the vacuum gauge will read zero.

5) Verify initial canister vacuum and Flow Controller assembly connection.

Figure 3. Pre-sample Vacuum check

a. Check that the brass cap is securely affixed to the Flow controller inlet.

b. Open and close the valve quickly to register the vacuum of the canister.

c. The vacuum on the gauge* should read between ***25 to 30 in Hg*** and hold steady. (Tap on face of vacuum gauge if needle doesn't initially register proper vacuum.) If the vacuum reading drops toward zero, re-install the flow controller and make sure the cap is tight, repeating step b.

**Note that vacuum gauges installed on flow controllers are rough gauges (+/-5 in Hg).*

Installing the Sampling Cane (if applicable):

6) Making sure the canister valve is ***CLOSED***, remove the brass cap on the flow controller. Attach the Sampling Cane by hand-tightening the nut onto the flow controller inlet, then use 9/16" and ½" wrenches to tighten an additional quarter turn (Fig 4.)

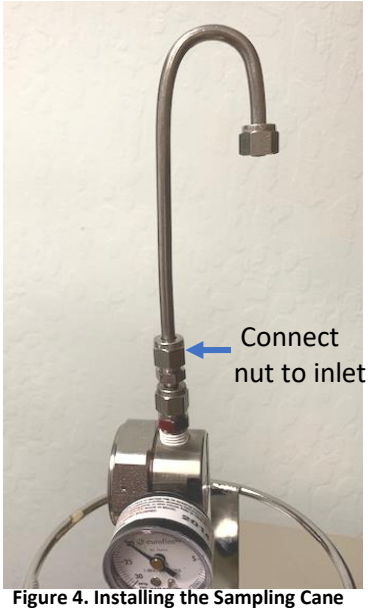


Figure 4. Installing the Sampling Cane

Collecting the sample:

7) To begin sampling, open the canister valve counter clockwise **no more than 1/2 turn** to begin sampling. Attempts to open the valve further can lead to valve damage and sample loss.

8) At the start of sampling, the field vacuum gauge will read approximately 25 to 30 in Hg. Record the start time and initial canister vacuum.

9) When the sampling period is complete, note the end time and vacuum reading on the COC (Fig. 5). The final vacuum is generally between 2 to 10 in Hg.

Figure 5. Record final field vacuum

10) Close the canister valve – do not overtighten.

Preparing the canister sample for return shipment to lab:

11) Remove the sampling cane from the flow controller using the 9/16 and ½ in wrenches. Detach the flow controller by pulling back the sleeve of the female QC fitting and lifting it upwards off of the canister. Replace the brass nut on the flow controller by hand tightening.

12) Finish filling out the COC, ensuring both the canister # and flow controller # fields have been completed. In the Can # field, write the serial # or barcode from the base of the canister. The flow controller # is the 5-digit number on the main body of the controller.

13) Verify canister tags are filled out and match the COC. If cans are unused, please check the "unused" box on the canister tag. Return canisters and flow controllers in boxes provided by the laboratory using the packaging provided. Sign and date the "Relinquished by:" field and place the completed COC in each sample box. *Note: You may keep a carbon copy of the COC for your records.*

14) Securely tape box shut and ship to the laboratory via USPS, FedEx, or UPS. Canisters should be delivered within 10 days of sample collection to ensure laboratory has sufficient time to process samples within the 30 day sample hold time.

Return Address: Eurofins Air Toxics, 180 Blue Ravine Rd. Ste. B, Folsom, CA 95630