

Integrated Air Sampling with a Fixed Flow Regulator

Please Read The Following Important Information Before Starting

- *The inlet bulkhead fitting on the Flow Regulator can rotate and become loose while attaching an inlet line unless a 5/8" wrench is used to hold the bulkhead fitting while tightening.*
- *Mechanical Gauges should be used only for approximate pressure readings. The final pressures will be measured in the lab.*
- *It is recommended that a Digital Vacuum Gauge be used to check canister vacuums.*
- *The Flow Regulators are fragile scientific instruments and should be treated with care. They are sent in individual boxes, which should be saved and used to return them.*
- *If you have any questions please call Steve Hoyt at (805) 801-5660*

Choosing the Flow Regulator

The flow regulators are marked with either the flow or the time to fill a 6 liter canister. The chart below shows the sample time and flow for the different regulators on different size canisters. The time to fill the canister is the time to fill canister to approximately 10 "Hg. The flow on the fixed flow regulators does not need to be checked, since we verify the flow here and it will not change. The 100 to 150 ml/min flow regulator is designed to fill the canisters to 5"Hg over a short period of time and are often used for soil gas samplers or source samples.

Flow Regulator Designation	Approximate Flow Rate (ml/min)	Time to Fill a 6 Liter Canister (hr)	Time to Fill a 3 Liter Canister (hr)	Time to Fill a 1 Liter Canister (hr)
100–150 ml/min	100 ml/min to 150 ml/min	50 min	25 min	10 min
24 hour	4.3	24	12	4
8 hour	10.4	8	4	1.25
4 hour	24.0	4	2	2.5

Attaching the Flow Regulator to the Canister

- If the initial vacuum of the canister is to be verified it should be done with a digital vacuum gauge. All of the canisters are vacuum checked and flow checked before being sent out. The mechanical gauges on the regulators are for approximate pressures only. A good canister will have a vacuum of less than 28"hg on a digital gauge.
- The Restrictor needs to be attached to the canister, as shown in Figure 1.
- Remove the cap from canister valve using a 9/16" wrench. The caps are important to prevent any leakage through the valves. Keep the cap on the canister until just before sampling. After sampling put the cap back on the canister. Store the cap in a safe place.
- Attach the vacuum gauge end of the flow regulator to the canister. Tighten the fitting until it is snug and does not move or rotate. *Be sure to use a wrench on each side the fitting.*
- The samplers are leak checked before they are sent out but they can be verified before use by placing the cap that was removed from the canister on the inlet to the flow regulator. Tighten cap until snug. *Be sure to use two wrenches so the fitting on the flow regulator does not become loose.*
- Open the canister valve and let the gauge stabilize by tapping gently. If the vacuum gauge reading does not change in 1 to 2 minutes the sampler passes the leak check. Remove the cap from the flow regulator and the unit is ready to sample.

Collecting the Sample

- Place the canister and flow regulator in the desired sample location, and connect any sample lines or snorkels to the inlet of the flow regulator. *Be sure to use a wrench on each side the fitting.* Fill out the sample information on the Chain-of-Custody form supplied.
- Open the canister valve by turning the green knob counter clockwise. (If the green knob falls off, just screw it back on. It does not affect the sample).
- Record the approximate initial vacuum reading from the pressure/vacuum gauge on the Chain-of-Custody.

- At the end of the sample period, record the final pressure and close the canister valve. ***The laboratory will make a final reading using a digital pressure gauge to get an accurate final pressure.***
- Remove the Flow Regulator from the canister and place the cap on the canister. Tighten the cap. Pack the canister and flow regulator in the original boxes and ship back to EAS labs. The canisters have a \$400 value and the flow regulators have a \$100 value so the package should be insured, since the sampler is responsible for all the equipment until it arrives at EAS. Be sure the Chain-of-Custody is filled out with the desired analysis, contact person, and address the report and billing are to go to.

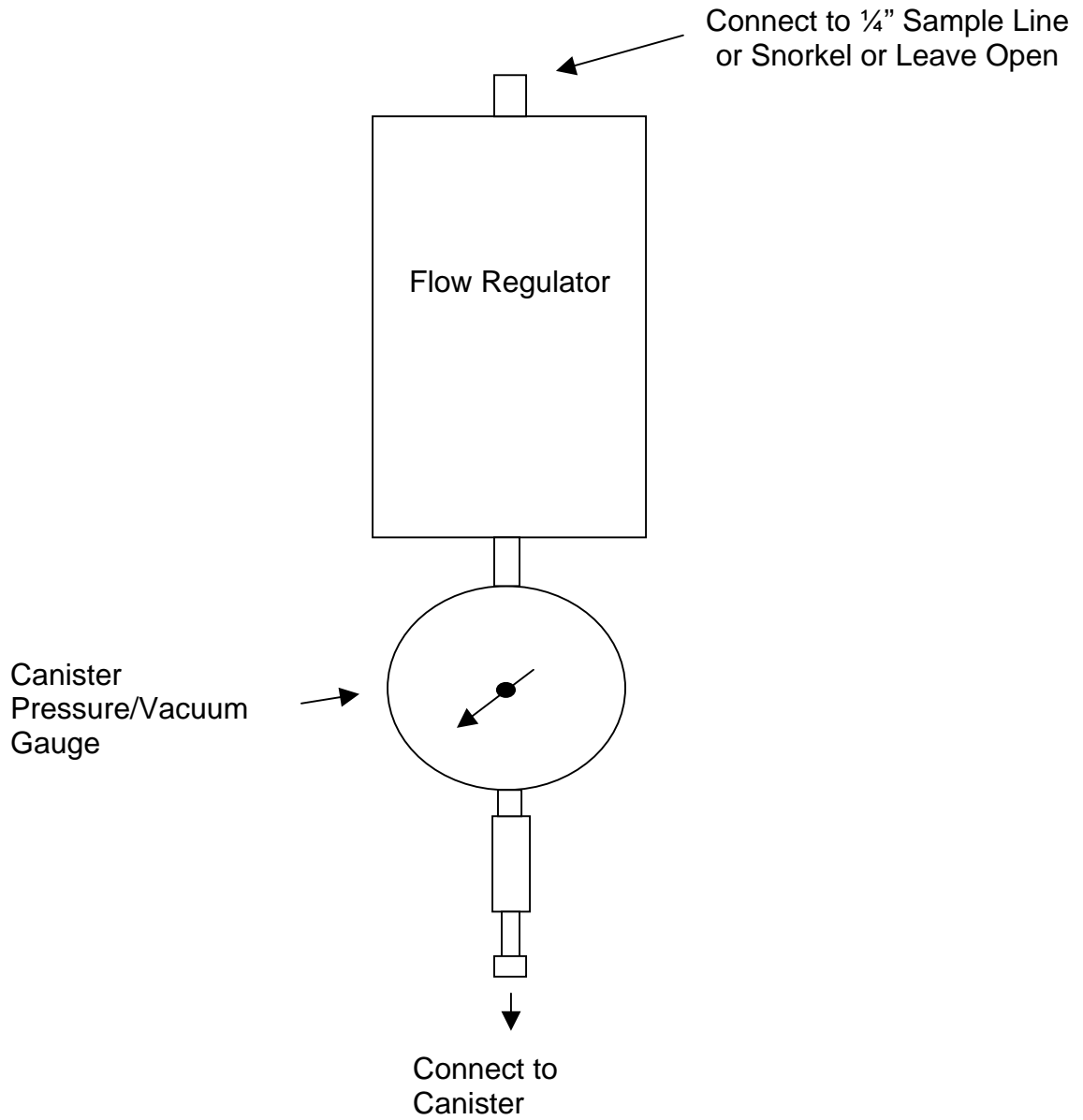
When Done:

Ship the Sampler and Canister back to Environmental Analytical Service, Inc. The holding time for the canisters is 30 days unless there is a project specific holding time.

Environmental Analytical Service, Inc.
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Figure 1
Fixed Flow Regulator for Integrated Samples





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