

**HYDROCARBONS- CANISTER INSTALLATION, PICK UP,
SHIPPING and PAPERWORK**

OPERATOR RESPONSIBILITIES

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2.18.2 HYDROCARBONS

2.18.2.1 CANISTER INSTALLATION, PICK UP, SHIPPING and PAPERWORK

2.18.2.1.1 OBJECTIVES

The canister installation, pick up, shipping and paperwork described in this section is recommended when whole ambient air samples (non methane organic compounds (NMOC) hydrocarbons) are collected for analysis of VOC's. NMOC samples are collected in 6 L Summa canister(s) during three hour time intervals in one of the following four time windows: 1am - 4 am, 6 am-9 am, 2 pm - 5 pm and 9 pm -11: 59 pm. After the sampling, canister(s) are retrieved, packaged and shipped to the analytical laboratory for analysis.

2.18.2.1.2 Canister Equipment

A Summa canister is an airtight, stainless steel container with an inner surface that has been electropolished and chemically deactivated. This process of chemical deactivation is the "Summa" process. The standard canister size is 6L.

2.18.2.1.3 Laboratory Documentation - Cleaning

1. A **Hydrocarbon Sampling Data Form** is assigned to the canister at the lab after the canister is cleaned. If the canister number and/or start pressure are not filled out, the canister may not be clean. The sampling data form is put in the box to be sent into the field. Be sure the correct sampling paperwork remains with the correct canister.

All canisters and associated sample custody sheets should have the same number.

- a) Sample canister #; assigned to the cleaned canister.
- b) Certification #; canister has been through blanking/cleaning process.
- c) Certification Date & Initials; date and operator for canister blanking/cleaning process.

2.18.2.1.4 Laboratory Documentation – Canister Return

1. On sampling data form, information relevant to each sample should include:
 - a) Sample Canister section; return pressure lab date and initials, date canister was received back at laboratory and analysis date.
 - b) Canister condition; visual inspection of exterior of canister.
 - c) Remarks on sample validity; was sample taken.
 - d) NMOC Conc. ppbC, NMOC Analysis file #; results of analysis of canister.
 - e) Speciated analysis file #; ?
 - f) Record any equipment problems in "Comments" section.

2.18.2.1.5 Installation Procedures

1. Obtain a cleaned, evacuated Summa canister and chain of custody form from the Hydrocarbon Lab. Verify that the vacuum is between 26 and 30 inches of mercury before leaving the lab and installation.
2. Attach the canisters to the sampler. Ensure that the nut is properly threaded and finger tight before using a wrench. The Swagelock fitting should rotate freely. If the fitting hangs up on the stainless steel reducer try to free it up. If it cannot be freed up, make a note on the custody sheet and contact the Hydrocarbon Lab for a replacement. Ensure that the nut is properly threaded and hand tightened before using a wrench. After hand tightening, tighten the nut $\frac{1}{4}$ turn using a $\frac{9}{16}$ " wrench while holding the valve securely.
3. Once the canister(s) are connected, open the green valve on the canister(s) by turning counter clockwise at least two (2) full rotations.

2.18.2.1.6 Programming Timer

1. Mode Selector

- MAN - Automatic operations are bypassed when in the manual mode, and the timer can be manually switched "ON" or "OFF".
- AUTO - Position for automatic operation. Events can be manually activated or deactivated; the timer will resume automatic operation beginning with the next set point.
- SET - To set clock program
- REVIEW - To check the program and clear set points.

2. On Indicator Light

Flashes when the selector switch is set in "REVIEW" or "SET". Glows steadily when normally "open" contacts are "closed" during automatic or manual operation.

3. Programming Buttons

- CLEAR - Clears display entry (in "SET" or "REVIEW" mode).
- CLOCK - Enter the time of day when in the "SET" mode.
- ON/OFF - To enter programming steps when in the "SET" mode, as well as manually controlling the timer from the "AUTO" or "MAN" mode, and displays set points in the "REVIEW" mode.
- AM/PM - Designates the time as AM or PM.
- RESET - To erase the entire program.

Do not press RESET button while reviewing program or the entire program will be lost.

4. Set or modify the time of day:

- 1) Turn selector switch to "SET".
- 2) Press the numbered button corresponding to the day. For example, if the day is Monday, press the "2" button.
- 3) Enter the current time of day. For example, if the time is 8:00 AM, press 800 and press "AM".
- 4) For our example, the display will show "2 '8:00".
- 5) Press "CLOCK" button.
- 6) The display will now show: "- --:- -."
- 7) To verify that the correct time is set turn the selector switch to "AUTO" or "MAN". If the time is incorrect repeat steps 1-6.

5. Set Program**6. Enter the program**

- 1) Enter the program in the exact order. Day; Time; AM/PM; ON/OFF

Example: for listing on/off set pts for a Thursday, 6am-9am sample

Press	5	6:00	AM	ON
Press	5	9:00	AM	OFF

NOTE: AM is indicated as " ' " flashing .



- 2) The program is now complete. It is suggested that the program be reviewed before putting the timer in AUTO. Follow the procedure shown in "REVIEW".

7. **Review**

- 1) Turn the selector switch to "REVIEW"
- 2) Press the button corresponding to the day being reviewed.

Example: Press 2 --:-- (Monday events can be reviewed).

- 3) Press "ON" and the first "ON" time for Monday (if any are programmed) will be displayed. Press "ON" a second time to ensure that only one "ON" time is programmed. If only a single time is stored the display will show "--:--".
- 4) Repeat for "OFF" times.

To clear a set point, that set point must first appear on the display. Next, the clear button is pressed. Turn the selector button to "SET" and enter the new information in the correct order (day, time, AM/PM, ON/OFF).

8. **Operation**

- 1) Turn selector switch to "AUTO". **The sampler must be in the AUTO mode to collect samples automatically.**

NOTE: When in automatic operation, if the "ON" or "OFF" buttons are pressed, the loads will activate accordingly. The load will stay in this condition until the next programmed event.

9. **Elapsed Time Meters**

Make sure elapsed time meters are reset to **0000.0**

2.18.2.1.7 Canister Sampler Documentation

1. On the **Hydrocarbon Sampling Data Form**, information relevant to each sample should include:
 - a) Site name; use the site name or two-letter code designated for each site.

Hattie Ave.	UH	Butner	BT	Pittsboro	UP
Union Cross	UF	Duke St.	DK	County Line	CO
Franklinton	UF	WRAL Tower	WT	Millbrook	ML
Fuq-Var	UQ	Crouse	UL	Garinger	UG
Johnson Co.	UJ	Rockwell	UR	Cherry Grove	UC

- b) Sample collection date; this should be date on which the sample is collected.
- c) Sample collection day; the day of the week on which the sampler is programmed to collect the sample.
- d) Sample collection time, record start and stop times.
- e) Sample elapsed start/stop time, necessary QA data, and necessary to see if sampler ran.
- f) SAMPLERS ID, record the sampler identification and position on sampler left or right
(upper left or right, lower left or right for four (4) canister samples).
- g) Ozone Analyzer Operating ?, NO_x Analyzer Operating ? and Duplicate Sample for the Date all are "Y/N "
- h) Duplicate Canister #, record if this is a duplicate sample.
- i) Final canister pressure; should only be filled out if the operator has a pressure gauge, initials.
- j) Highest ozone level, site; ozone concentration if sampled at site where ozone monitor was located.
- k) Record any site conditions, equipment problems in "Comments" section.

2.18.2.1.8 Canister Retrieval Procedure

1. Once the canister(s) are filled, close the valve on the canister(s) using two fingers only by turning clockwise until the valve is closed.
2. Remove the sampling line using a $\frac{9}{16}$ " wrench while holding another wrench on the canister valve until it is loose.
3. Attach $\frac{9}{16}$ cap to sampling valve and hand tighten until snug.

2.18.2.1.9 Documentation - HYDROCARBON SAMPLING DATA FORM

1. Record on the " HYDROCARBON SAMPLING DATA FORM " the following:
 - a) The sample collection time stopped,
 - b) The elapsed time meter stopped (necessary QA data),
 - c) Return pressure field (if gauge is available),
 - d) Comments, record any remarks in this section that are of importance as to the sampling sequence.
2. Be sure the correct sampling paperwork remains with the correct canister. All canisters and associated sample custody sheets should have the same number.
3. Place canister and sampling data form inside the valve guard on top of the SUMMA canister. Do not wrinkle the sample form because this form must be retained in the Air Quality records. Sample can now be placed in shipping container and sealed.
4. Attach shipping labels;(1) recipient and (2) return. Deliver to mail carrier.