



## INJECTOR EFC LEAK TEST PROCEDURE

1. Install **ETS** software Version 1.6.2 or newer. (be sure to discharge yourself before touching ROM pwa.)
2. Set the DIP Switches on the main board as shown:
3. Turn on power and connect Carrier Gas inlet tube.
4. Make sure jumpers on EFC board are in the correct position.
5. Cap off all unused gas inlet fittings and the Injector column out fitting.
6. Press **MENU** key.
7. Check com board if installed (under AOC cont.) pg.2.
8. Check Detector Electrometer pwa's, (3) are they present?.
9. Check EFC's, (5) are they present? Are they good?
10. If EFC's are present and good, press **Enter** Key and set to **Pressure DAC 5.00** and **Flow DAC to 3.00**.(blue toggle key below display)
11. After completing items 1 thru 10, turn on Carrier Gas.
12. When the pressure is stable, turn **OFF** Carrier Gas and press **LEAKSTOP** Key. (blue key below display)
13. The leak test procedure will run for 5 minutes then stop and display the leak value for the 5 min. period. (< .30 + .10 for each EFC installed is the acceptance criteria, (if the test fails, retest and measure the flow at the EFC Vent tube. If a leak is detected and is less than .10 ml/min. subtract the amount from your total leak value. If that value is less than the spec (above), the instrument passed the test. If over, the instrument Fail and the leak must be found and corrected. Retest as above until a pass condition is reached.
14. Record the resulting value of the leak test on the QC Record Sheet.
15. Press Menu Key, go to **TEMPERATURE MENU** (4) check and press **Enter**.
16. Set all Temp zones to **NOT USED** and press **Enter**. (use **decrease** key)
17. Go to Pg.2 of 3, check Vent Doors for unrestricted opening and closing. (toggle **ON** enter, **OFF** enter)
18. If any Cryo is installed, go to pg. 3. Select the proper external event then activate to assure opening and closing. (blue Time Off/On key under display)
19. Go back to pg. 1 and Enable those zones used. Observe temperature go to 50 deg. and hold stable.
20. Press CONTACTOR key.
21. If Fan is running, go back to pg. 2 and turn off Fan.
22. Go to EFC Control (5) enter, select flow key and measure each Inj/Det. for some amount of flow.
23. Go to Main Menu, select EFC Control, press enter, go to EFC location (front, middle, rear) then

## DETECTOR EFC LEAK TEST PROCEDURE

1. Connect Helium to makeup line for FID, TSD, ECD and TCD. Connect Helium to H2 line for PFPD and TCD(H2).
2. Cap off all other gas inlets
3. Make sure DEFC position jumpers in correct position.
4. Cap all other inlets (Top and bottom of Detector)
5. Plug in customer software.
6. Turn on the power
7. Press ∞ to go to local mode.
8. From the "Instrument Setup" menu, Enter the IEFC type(s) in the appropriate positions in the "Heated Zones" screen
9. Save and Exit
10. When the GC is done initializing (~2 minutes), Press ∞ to go to local mode.
11. Press "Detector" button to get to the Detector Menu
12. For each detector:
  - \* Pick Detector
  - \* Go to the "adjustments" screen, page 2
  - \* Turn on the gas
  - \* Within 2 minutes, the flowrate of the Helium channel (1) should go to 0. In the case of PFPD, channel 2 is used. In the case of TCD(H2), Channel 1 is used.
  - \* If flowrate does not go to 0, fix leaks and retest.
  - \* Turn off gas and GC