

1. Replace the inlet filters. Tighten until marks line up. Reconnect the inlet tube to each filter (use 2 wrenches).
2. Purge the CO₂ PV for 30 minutes with nitrogen. Retighten the top plug fitting. Start @ _____, End @ _____
3. Fill the dewar with dry ice (4 lbs. max.), replace the cover and secure the insulation with kapton tape.
4. Check that the Pump Valve is **closed**, and that the main circuit breaker (lower) is pulled **out**.
5. Check the electrical and plumbing connections. Check that the A/C exhaust manifold is open, or being pumped down.
6. Confirm that the ON switch is **OFF** (down), and that power is available to the rack.
7. Connect the monitor, keyboard, and mouse to the ADLink PC, and install the CompactFlash Card.
8. Push in the main circuit breaker (lower), and confirm that the chiller circuit breaker is also in.
9. Turn **ON** the Main Switch. Note time _____. The LED should light in approx. 12 seconds. Note that the program will automatically load and start the system initialization. After 60 s., the pump will start. Confirm chiller startup was OK.
10. Confirm startup of PC208W and TDLWintel Wake-up windows. Open a "numeric" window in PC208W, and set MODE2 to **100** (IL126). This will prevent the program from starting the PRECAL cycle when the ADLink counter (IL124) reaches 1400.
11. Time synchronize the PC (call 1-303-499-7111 to set the time of your watch), and **transfer to the CR10X**.
12. Check that the TDLWintel data folders (CO₂ and DUAL) are set to the current flight date, and that there is adequate disk space.
13. When the ADLink counter (IL124) is between 300 and 650 s., the CO₂ cells must be purged with cal gas to ensure proper line locking. To conduct a CO₂-only ZERO, **open the Pump Valve**, set the CALMODE (IL127) to **10**, and then set the grdMODE (IL130) to **100**. Open the CO₂ REF valve when the regulator has drained. (The grdMODE location controls access to the Calibration subroutine, and will enable the pressure controllers and start the CO₂ REF flow regardless of what the CALMODE is set to.) **The Pump Valve must be open before setting IL130 to 100.**
14. Verify that P_{diff} and CO₂ cell pressures are correct, and note them below.
15. Check laser temps. and laser intensities. If desired, execute a manual relock.
16. Review TDLWintel (CO₂ and DUAL) line positions, and note parameters below.

Note positions: CO₂: _____ N₂O: _____ CO: _____ / CO₂: _____ N₂O: _____
CO: _____

Note intensities: CO₂: _____ DUAL: _____ / CO₂: _____ DUAL: _____

17. When satisfied with laser parameters, start the regulator valve opening sequence. Set the CALMODE to **11**, and prepare to open the DUAL ZERO regulator. After opening the DUAL ZERO valve, check the sample intensities and sample to PN ratios.
18. Verify that the DUAL cell pressures are correct, and note them below.
19. After ZEROing for 1 minute, switch the CALMODE to **13** (LS) and open the DUAL and CO₂ LS regulators when drained.
20. After doing the LS for 1 minute, switch the CALMODE to **14** (HS), and open the DUAL and CO₂ HS regulators when drained.
21. After completing the valve sequence, set the CALMODE to **16** (STANDBY2). This will close the cal solenoids, disable the pressure controllers, and turn off the pump. The Pump Valve can be closed if desired. **Note status** _____.
22. Set the grdMODE to **ZERO**. This will disable further manual calibrations.

23. When ready to start the PRECAL, **open the Pump Valve** and set MODE2 to **ZERO**. If the ADLink counter is ≥ 1400 , the PRECAL will start immediately. To delay the start of the PRECAL, **set the BOM counter prior to setting MODE2 to ZERO**.
24. Confirm that the PC208W collection schedule is enabled (check box), and that the data collection folder/file is correct. The current MODE should be 3 (initialized, warmed up, lasers on) and the regulator valves should all be open.
25. Note the cylinder pressures and other variables below. **Flight Program** _____
26. When required, disconnect the monitor, keyboard, and mouse and stow them in the baggage compartment.

CO2 RegP REF _____	CO2 HiP REF _____	DUAL RegP ZERO _____	DUAL HiP ZERO _____
CO2 RegP LS _____	CO2 HiP LS _____	DUAL RegP LS _____	DUAL HiP LS _____
CO2 RegP HS _____	CO2 HiP HS _____	DUAL RegP HS _____	DUAL HiP HS _____
CO2 P_inlet _____	CO2 FI_sam _____	DUAL P_cell _____	DUAL_FI_sam _____
CO2 P_cell _____	CO2 FI_ref _____	DUAL P_out _____	Pump P_in _____
CO2 P_diff _____			