03.102 LiOH Canister Saturation
(03. HSS Procedure)

OBJECTIVE:

To replace the Lithium Hydroxide (LiOH) Canister Assembly on the Carbon Dioxide Removal Assembly (CDRA).

EQUIPMENT:

LiOH canister (will be gathered during procedure)
Flashlight
Shop vacuum
Portable anemometer
PPE safety glasses
PPE gloves
PPE static wrist tether
Orange caution cone
Sticky notes
Pen

REFERENCES:

Serial Number Tracking Spreadsheet
Airflow Tracking Spreadsheet

NOTE
The CDRA requires the use of the Fan Dampener Assembly (FDA) for proper operation. The assembly prevents particulate matter from interfering with the infrared sensor and damaging the sampling pump. If the filter becomes clogged, the assembly must be replaced.

1. DEACTIVATE MAIN CABIN FANS (IF ACTIVATED)

   1.1 Deactivate Main Cabin Fan 1 and Main Cabin 2 by pressing the corresponding buttons on the circuit breaker panel.

   1.2 Verify the fans are deactivated by checking the CDRA HSS display for orange immobile fan icons. See Figure 1.

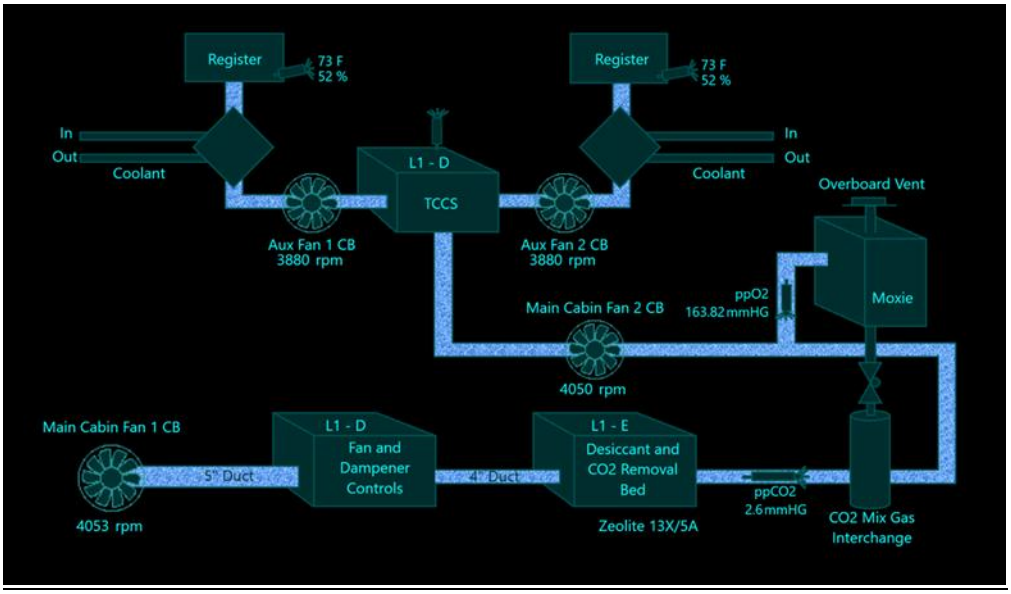

Figure 1: CDRA Assembly: Main Cabin Fan Power Switches

GMWS 2. <u>DEACTIVATE AUX CABIN FANS (IF ACTIVATED)</u>

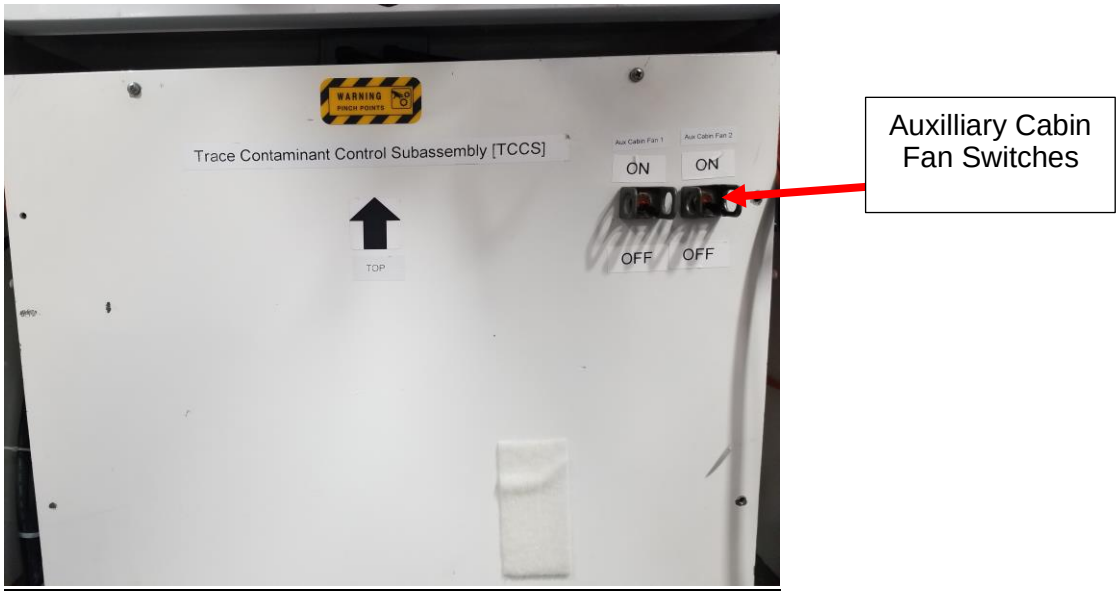

Figure 2: Trace Contaminant Control Subassembly (TCCS) Panel

<u>NOTE</u> Move stowage as necessary in order to access the TCCS Panel.

2.1 Turn power switches of Aux Cabin Fan 1 and Aux Cabin Fan 2 to OFF.

2.2 On circuit board panel, press buttons for Aux Cabin Fans 1 and 2 to deactivate.

2.3 Check on HSS CDRA display for the icons to be orange. See Figure 1.

3. DEACTIVATE FAN DAMPENER ASSEMBLY (FDA) PUMP (IF ACTIVATED)

3.1. Place orange caution cone next to open work area L1D subfloor to warn other crewmembers.

3.2 Remove by sliding floor panel 1D and temp stow.

3.3 Don gloves and safety glasses.

3.4 Don tether and attach to any unpainted metallic surface.

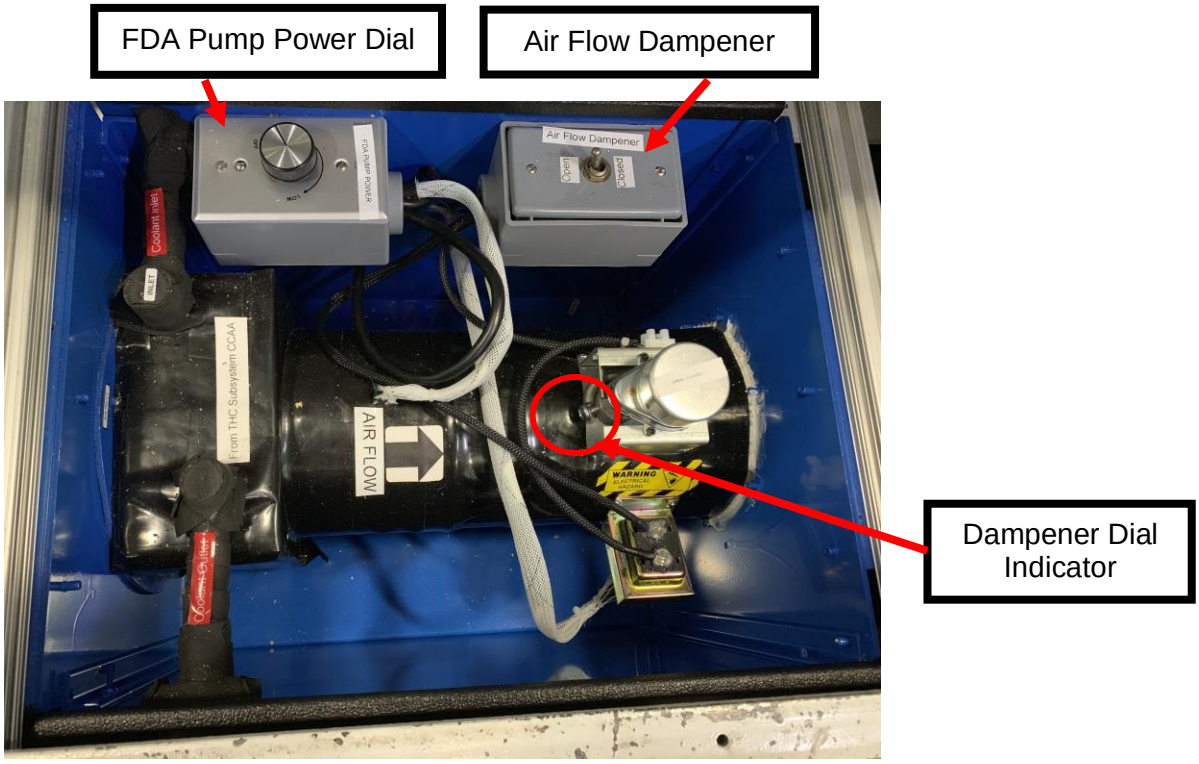

Figure 3: Fan Dampener Assembly (FDA) Pump

3.5 Turn FDA Pump Power Dial counterclockwise to “OFF”. (see Figure 3) Listen for a click.

NOTE
Read step 3.7 before executing 3.6. Step 3.7 is time dependent and can be missed if not actively watching the Dampener Dial.

3.6 Flip Air Flow Dampener switch to “Closed”.

3.7 Confirm Dampener Dial Indicator (metal Philips head screw with spring attached) rotates to fully closed. (see Figure 3)

3.8 Detach static wrist tether.

L1C Subf 4. REMOVE USED LiOH CANISTER

Figure 4. LiOH Canister a) Assembly cover b) LiOH canister

4.1 Go to LiOH in-floor receptacle near 1C subfloor.

4.2 Remove LiOH Canister Cover and temp stow. (see Figure 4)

4.3 Attach static wrist tether to unpainted metallic surface.

4.4 Remove LiOH Canister from filter assembly. (see Figure 4)

4.5 Inspect filter assembly with flashlight for debris and clean as necessary with shop vacuum.

4.6 Record used LiOH Canister Serial Number in Serial Number Tracking Spreadsheet.

4.7 Detach the static wrist tether from the surface and doff it.

4.8 Label used LiOH Canister with sticky note and stow in consumables drawer in ALC L01.

ALC 5. RETRIEVE CLEAN LiOH CANISTER

Figure 5: LiOH Canister

5.1 Remove clean LiOH Canister from ALC L01. (see Figure 5)

5.2 Inspect clean LiOH Canister with flashlight for debris and clean, as necessary.

L1C Subf 6. INSERT CLEAN LiOH CANISTER

6.1 Don static wrist tether and attach to unpainted surface.

6.2 Inspect interior of hose and filter assembly with flashlight for debris and clean as necessary with shop vacuum.

6.3 Insert clean LiOH Canister into filter assembly.

6.4 Detach static wrist tether from unpainted surface.

6.5 Record clean LiOH Canister Serial Number in the Serial Number Tracking Spreadsheet.

6.6 Replace LiOH Canister cover and safely latch.

L1D Subf 7. ACTIVATE FDA PUMP

NOTE
FDA Pump Power Dial can be set from Low to High. When on, always leave dial set to Midpoint.

7.1 Attach static wrist tether to any unpainted surface.

7.2 Flip Air Flow Dampener switch to “OPEN” (see Figure 4).

7.2.1 Check that the Dampener Dial Indicator (metal Philips head screw with spring attached) rotates to fully open (see Figure 4).

7.3 Turn FDA Pump Power Dial to “ON” by rotating clockwise. After hearing click, stop rotation. Verify dial is set to “Medium” position (see Figure 4).

7.4 Detach static wrist tether.

8. ACTIVATE MAIN CABIN FANS

8.1 On the circuit breaker panel, press the buttons for Main Cabin Fan 1 and 2 to activate fans.

9. ACTIVATE AUX CABIN FANS

9.1 On TCCS Panel, flip power switches of Aux Cabin Fan 1 and Aux Cabin Fan 2 to “ON”. (see Figure 3)

9.2 Move stowage as necessary in order to access the TCCS Panel.

9.3 On the circuit breaker panel, press buttons for Aux Cabin Fan 1 and 2 icon to activate fans.

9.3.1 Press finger to Aux Fan 2. The Aux Fan 2 display should start moving.

10. HSS VENT CHECK

Figure 6: Cabin Output Vent C/D

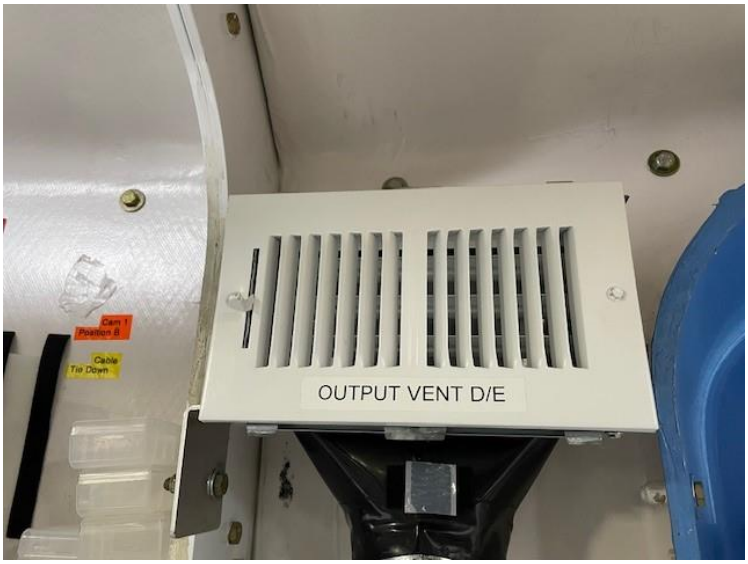

Figure 7: Cabin Output Vent D/E

Figure 8: Portable Anemometer

10.1 Gather portable anemometer and take readings in m/s of exhaust flow at cabin output vents C/D and D/E. (Figures 6&7) Hold anemometer (Figure 8) within an inch of the vent for 20 seconds to gather an accurate reading and record the average reading in Airflow Tracking Spreadsheet.

10.2 Doff PPE gloves, static wrist tether, and safety glasses.

10.3 Stow all equipment including orange caution cones.