

### **03.120 Charcoal Filter Saturation**

(03. HSS Procedure)

#### **OBJECTIVE:**

To replace the activated charcoal filter assembly on the Trace Contaminant Control Subassembly (TCCS).

#### **EQUIPMENT:**

Clean Activated charcoal filter (will be gathered during the procedure)

Phillips screwdriver

Shop vacuum

Flashlight

Portable anemometer

PPE safety glasses

PPE static wrist tether

Nitrile gloves

2x Orange caution cone

Sticky notes

Pen

Magnetic Dish

#### **REFERENCES:**

Airflow Tracking Spreadsheet

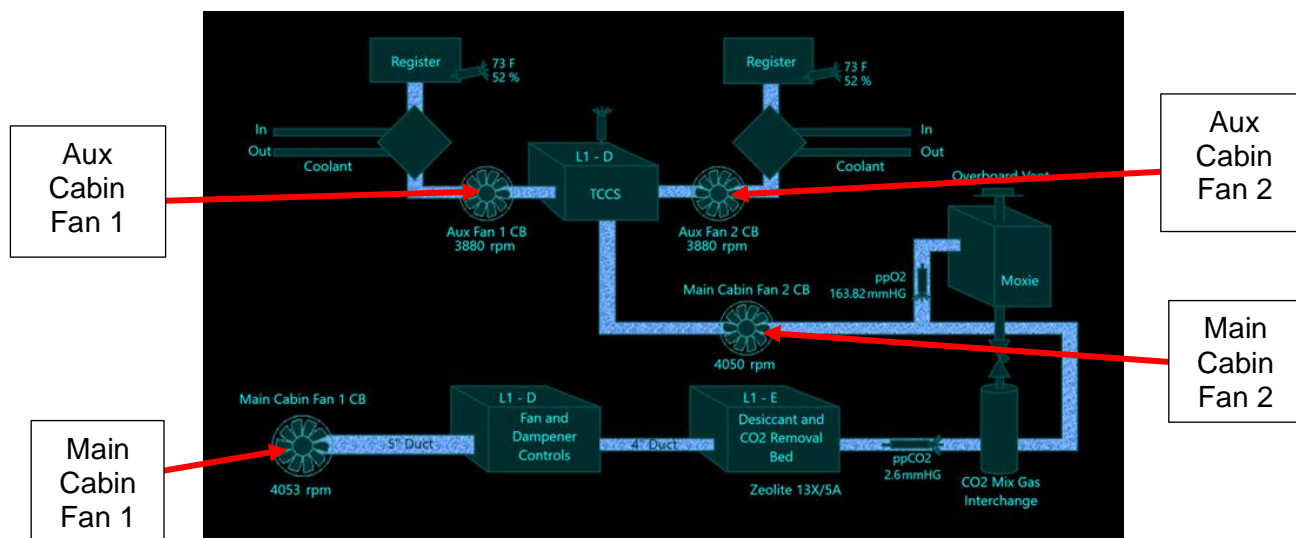
#### **NOTE**

The activated charcoal filter assembly removes trace contaminants from the cabin air. Over time, the charcoal becomes saturated and requires replacement. This is a nominal maintenance activity.

#### **1. DEACTIVATE MAIN CABIN FANS (IF ACTIVATED)**

- 1.1 On the circuit breaker panel, deactivate all Main Cabin Fans and Aux Cabin Fans by pressing the buttons associated with each.
- 1.2 Verify that the green lights have turned off.
- 1.3 Verify on the HSS CDRA display that fans have stopped turning and have turned orange. (See Figure 1)

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**Figure 1: HSS Main Cabin Fan and Aux Cabin Fan Locations**

- 1.4 On TCCS Panel, flip power switches of Aux Cabin Fan 1 and Aux Cabin Fan 2 to "OFF" (see Figure 2).

#### NOTE

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



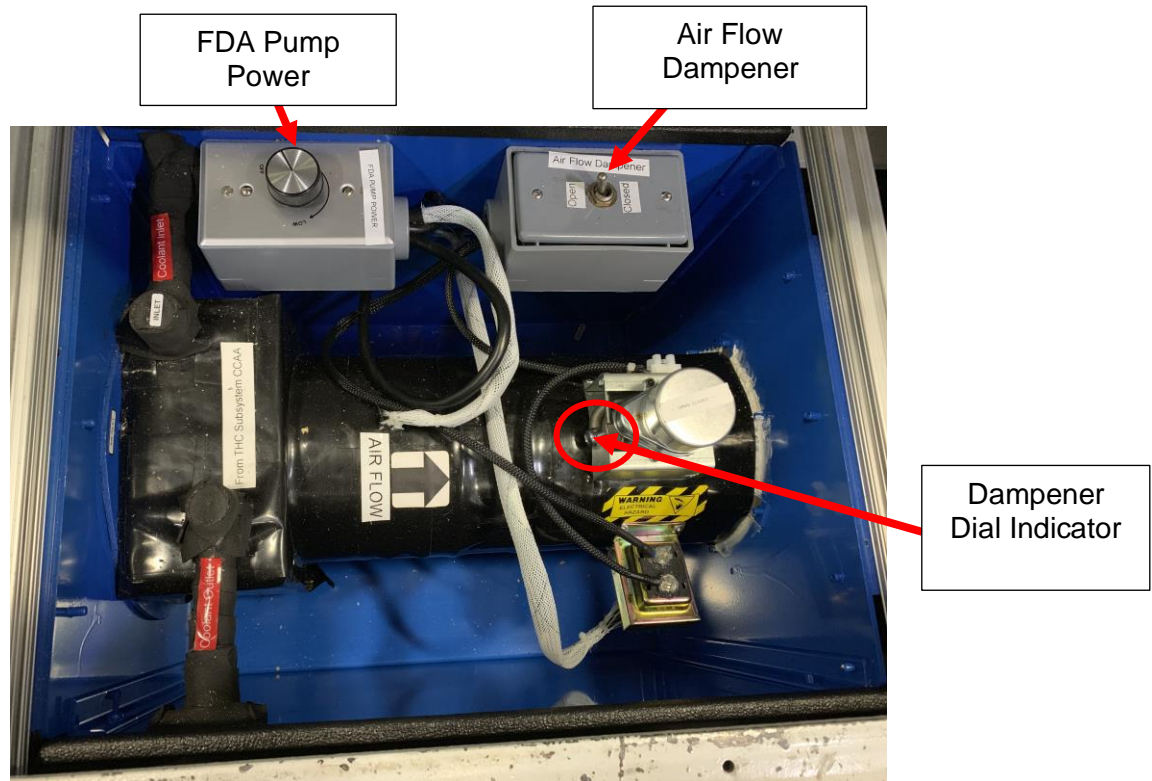
**Figure 2: Trace Contaminant Control Subassembly (TCCS) Panel**

2. DEACTIVATE FAN DAMPENER ASSEMBLY (FDA) PUMP (IF ACTIVATED)
  - 2.1 Remove sliding floor panel 1D and temp stow.

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- 2.2 Place orange caution cone next to open work area L1D subfloor to warn other crewmembers.
- 2.3 Don static wrist tether and attach to any unpainted metallic surface.
- 2.4 Turn FDA Pump Power Dial Counterclockwise to “OFF”. Listen for a click (See Figure 3).



**Figure 3: Fan Dampener Assembly (FDA) Pump**

#### NOTE

Read step 2.6 before executing 2.5. Step 2.6 is time dependent and can be missed if not actively watching the Dampener Dial Indicator.

- 2.5 Flip Air Flow Dampener switch to “CLOSED” (See Figure 3).
- 2.6 Confirm Dampener Dial Indicator (metal Philips head screw with spring attached) rotates to fully closed (See Figure 3).
- 2.7 Detach static wrist tether.

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#### GMWS 3. REMOVE USED ACTIVATED CHARCOAL FILTER

- 3.1 Move to TCCS Panel (see Figure 2) and attach static wrist tether to any unpainted metallic surface.
- 3.2 On TCCS Panel, use Phillips screwdriver to remove top two Phillips screws and temp stow in magnetic dish.
- 3.3 Remove TCCS Panel and temp stow by sliding it in front of Aux. Cabin Fan assembly (right or left).



**Figure 4:** Inside of TCCS with charcoal filter.

- 3.4 Inspect inside of TCCS with flashlight for debris and clean as necessary with shop vacuum.
- 3.5 Remove activated charcoal filter from TCCS filter assembly by pulling filter out. (See Figure 4).
- 3.6 Record used activated charcoal filter S/N in Serial Number Tracking Spreadsheet.
- 3.7 Detach static wrist tether.

#### ALC 4. RETRIEVE CLEAN ACTIVATED CHARCOAL FILTER

- 4.1 Remove one clean activated charcoal filter from consumables drawer in airlock.

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- 4.2 Inspect clean activated charcoal filter with flashlight for damage/debris.
- 4.3 Label used charcoal filter with sticky note and stow it to consumables drawer in airlock.

#### GMWS 5. INSERT CLEAN ACTIVATED CHARCOAL FILTER

- 5.1 Record clean activated charcoal filter S/N in Serial Number Tracking Spreadsheet.
- 5.2 Attach static wrist tether to unpainted metallic surface.
- 5.3 Insert clean activated charcoal filter into TCCS Filter Assembly.
  - 5.3.1 Ensure activated charcoal filter fits snug within the TCCS Filter Assembly housing.
- 5.4 Check that the air flow direction on the clean activated charcoal filter is pointing up. See Figure 4 to verify, if necessary.
- 5.5 Retrieve TCCS Panel and secure panel at top with Phillips screws and Phillips screwdriver.

#### L1D Subf 6. ACTIVATE FDA PUMP

##### NOTE

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

- 6.1 Flip Air Flow Dampener switch to “OPEN” (see Figure 3).
  - 6.1.1 Check that the Dampener Dial Indicator (metal Philips head screw with spring attached) rotates to half open.
- 6.2 Turn FDA Pump Power Dial to “ON” by rotating clockwise. After hearing click, rotate dial to Midpoint.
- 6.3 Detach static wrist tether.
- 6.4 Replace floor panel 1D and safely latch.

#### 7. ACTIVATE MAIN CABIN FANS

- 7.1 On the circuit breaker panel, reactivate the circuits for Main Cabin Fans and Aux Cabin Fans by pressing the associated buttons.
- 7.2 Verify the buttons have illuminated green.
- 7.3 Verify fans are moving on the HSS CDRA display.

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Vent

#### 8. CABIN FAN VENT CHECK



**Figure 5:** Cabin Output Vent C/D and Cabin Output Vent D/E

- 8.1 Gather portable anemometer and take reading in m/s of exhaust flow at cabin output vents C/D and D/E (Figure 5). Hold anemometer within an inch of the vent for 10 seconds to gather an accurate reading.
- 8.2 Notify MCC, via Mission Log, if air flow is not within expected range and record the flow in Airflow Tracking Spreadsheet. (Reading should be greater than 0.5 m/s.)
- 8.3 Return floor panel 1D and safely latch.
- 8.4 Doff gloves, static wrist tether, and safety glasses.
- 8.5 Stow all equipment including orange caution cones.