

03.120 TCCS Charcoal Filter Swapout

(03. ECLSS)

OBJECTIVE:

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

EQUIPMENT:

Activated charcoal filter (will be gathered during the procedure)
Phillips screwdriver
Shop vacuum
Flashlight
Portable anemometer
PPE safety glasses
PPE Kobalt work gloves
PPE static wrist tether
Orange caution cone 2x
Sticky notes and pen

REFERENCES:

03.101 CCAA Main Cabin Fan Activation

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.

L1F Subf

1. DEACTIVATE MAIN CABIN FANS (IF ACTIVATED)

- 1.1 Don PPE gloves and safety glasses.
- 1.2 Remove floor panel 1F and temp stow.
- 1.3 Place orange caution cone next to open work area L1F subfloor to warn other crewmembers.

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Figure 1: Cabin Fan Power Switches

- 1.4 On Main Cabin Fan, pull switch out and push toward “OFF” to deactivate fan (see Figure 1).

Verify fan has audibly shutoff.

- 1.5 On Secondary Cabin Fan, pull switch out and push toward “OFF” to deactivate fan (see Figure 1).

Verify fan has audibly shutoff.

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GMWS 2. DEACTIVATE AUX CABIN FANS (IF ACTIVATED)



Figure 2: Trace Contaminant Control Subassembly (TCCS) Panel

- 2.1 On TCCS Panel, check power switches of Aux Cabin Fan 1 and Aux Cabin Fan 2 are “OFF” (see Figure 2).
 - 2.1.1 Move stowage as necessary in order to access the TCCS Panel.
 - 2.1.2 If power switches of Aux Cabin Fan 1 and Aux Cabin Fan 2 are **NOT** “OFF”, flip each switch to “OFF”.

L1D Subf 3. DEACTIVATE FAN DAMPENER ASSEMBLY (FDA) PUMP (IF ACTIVATED)

- 3.1 Remove floor panel 1D and temp stow.
- 3.2 Don static wrist tether and attach to any unpainted metallic surface.
- 3.3 Place orange caution cone next to open work area L1D subfloor to warn other crewmembers.

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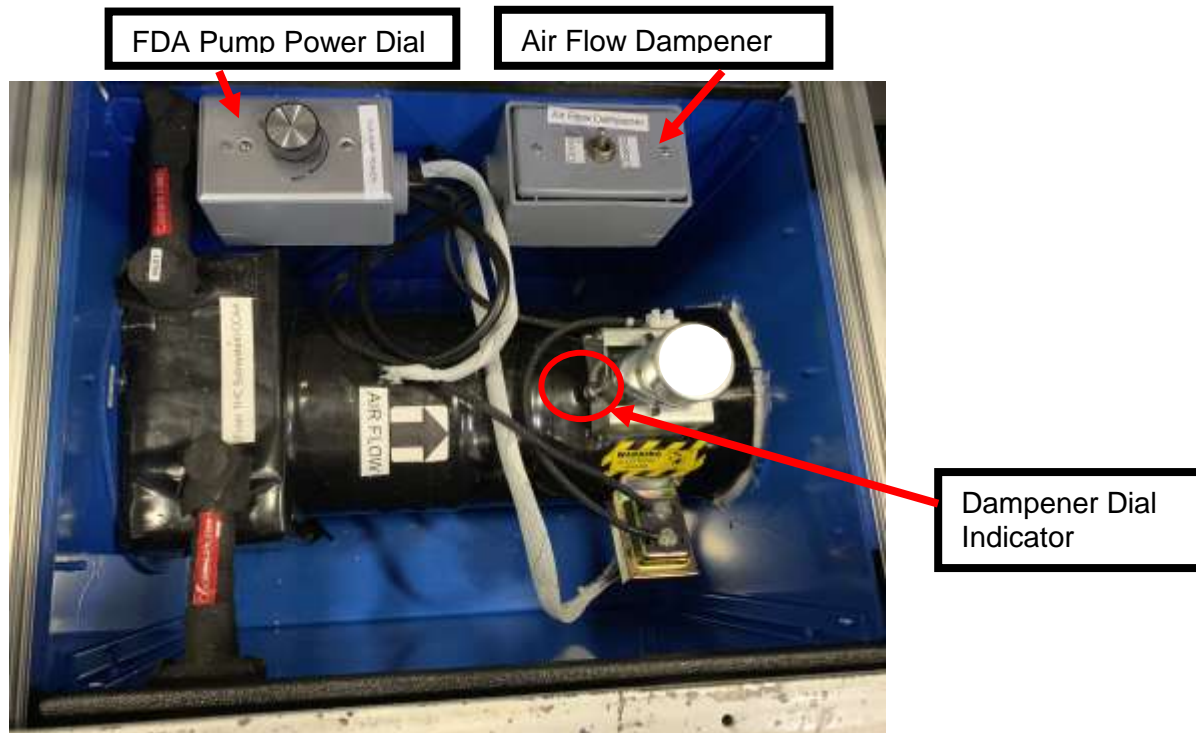


Figure 3: Fan Dampener Assembly (FDA) Pump

3.4 Turn FDA Pump Power Dial counterclockwise to “OFF”. Listen for a click.

NOTE

Read step 3.5 before executing 3.4. Step 3.5 is time dependent and can be missed if not actively watching the Dampener Dial Indicator.

3.5 Flip Air Flow Dampener switch to “CLOSED”.

3.6 Confirm Dampener Dial Indicator (metal Philips head screw with spring attached) rotates to fully closed.

3.7 Detach static wrist tether.

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4 REMOVE USED ACTIVATED CHARCOAL FILTER

4.1 Move to TCCS Panel (see Figure 2) and attach static wrist tether to any unpainted metallic surface.

4.2 On TCCS Panel, use Phillips screwdriver to remove top two Phillips screws and temp stow.

4.3 Remove TCCS Panel and temp stow.

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Figure 4: Inside of TCCS with charcoal filter.

- 4.4 Inspect inside of TCCS with flashlight for debris and clean as necessary with shop vacuum.
- 4.5 Remove activated charcoal filter from TCCS filter assembly by pulling filter out.
- 4.6 Detach static wrist tether.
- 4.7 Notify MCC of used activated charcoal filter S/N.

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5. RETRIEVE CLEAN ACTIVATED CHARCOAL FILTER

- 5.1 Remove one clean activated charcoal filter from consumables drawer in airlock.
- 5.2 Inspect clean activated charcoal filter with flashlight for damage/debris.
- 5.3 Label used charcoal filter with sticky note and dispose of it to consumables drawer in airlock.

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6. INSERT CLEAN ACTIVATED CHARCOAL FILTER

- 6.1 Notify MCC of clean activated charcoal filter S/N.
- 6.2 Attach static wrist tether to unpainted metallic surface.

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- 6.3 Insert clean activated charcoal filter into TCCS Filter Assembly.
 - 6.3.1 Ensure activated charcoal filter fits snug within the TCCS Filter Assembly housing.
- 6.4 Check that the air flow direction on the clean activated charcoal filter is pointing up. See Figure 4 to verify, if necessary.
- 6.5 Detach static wrist tether.
- 6.6 Retrieve TCCS Panel and secure panel at top with Phillips screws and Phillips screwdriver.

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 high.

- 7.1 Flip Air Flow Dampener switch to “OPEN” (see Figure 3).
 - 7.1.1 Check that the Dampener Dial Indicator (metal Philips head screw with spring attached) rotates to fully open.
- 7.2 Turn FDA Pump Power Dial to “ON” by rotating clockwise. After hearing click, stop rotation.

L1F Subf 8. ACTIVATE MAIN CABIN FANS

- 8.1 On Main Cabin Fan, pull switch out and push toward “ON” to activate fan (see Figure 1).

Verify fan has audibly turned on.
- 8.2 On Secondary Cabin Fan, pull switch out and push toward “ON” to activate fan (see Figure 1).

Verify fan has audibly turned on.
- 8.3 Replace floor panel 1F and safely latch.

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9. ECLSS Vent Check



Figure 5: Cabin Output Vent C/D

Figure 6: Cabin Output Vent D/E

- 9.1 Gather portable anemometer and take reading in m/s of exhaust flow at cabin output vents C/D and D/E (Figures 5 and 6). Hold anemometer within an inch of the vent for 10 seconds to gather an accurate reading and report the highest reading to MCC.
- 9.2 Call MCC to confirm air flow is within expected range by reporting the flow. (Reading should be greater than 0.5 m/s.)
- 9.3 **On MCC GO**, relocate floor panel 1D and safely latch.
- 9.4 Doff PPE Kobalt work gloves, static wrist tether, and safety glasses.
- 9.5 Stow all equipment including orange caution cones.