STAR ONLINE PUBLICATION

Case Number: S2108000241 REV. B

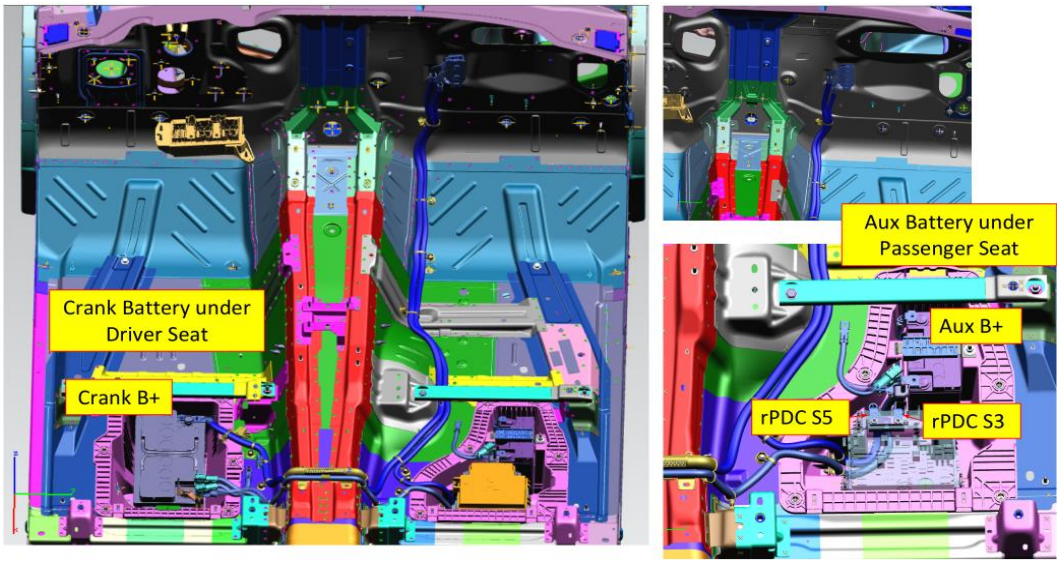
Release Date: April 2025

Symptom/Vehicle Issue: No Crank, No Start, Start Stop Inoperative

Customer Complaint/Technician Observation: Owner complaint is the vehicle does not start or that the stop start does not operate. Condition may have appeared after the vehicle was recently serviced and or jump started. Technician observed the vehicle is setting any of these associated Diagnostic Trouble Codes (DTCs) P00FD-00-Battery B State of Charge Performance, P2AF5-Starter Relay 3 Stuck On, P2AF6-Starter Relay 3 Stuck Off.

Repair Procedure: If the above DTCs are set, review the main and aux battery and their circuit connections. Review the B+ connection at Crank Battery and Aux Battery for any loose connections; clean and secure as needed.
Inspect the front under hood PDC 150-amp fuse for an open and connections at Under Hood Power Distribution Center (uPDC1) and (uPDC6) connection locations. Inspect and test the fuse array at the Rear Power Distribution Center (rPDC3) – C6 and (rPDC5) - C7 connection locations, clean and secure all locations as required, Pgs 1 - 4.

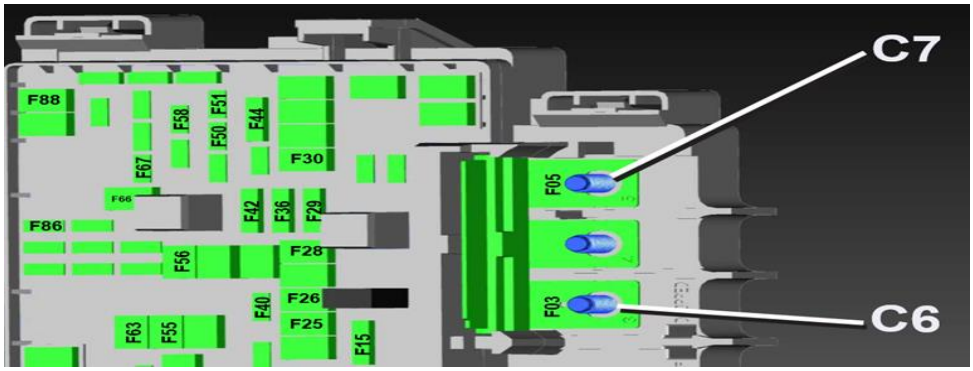
In Vehicle Locations



Pg 1

Contact STAR Center, or your Technical Assistance Center Via TechCONNECT or eCONTACT ticket if no solution is found

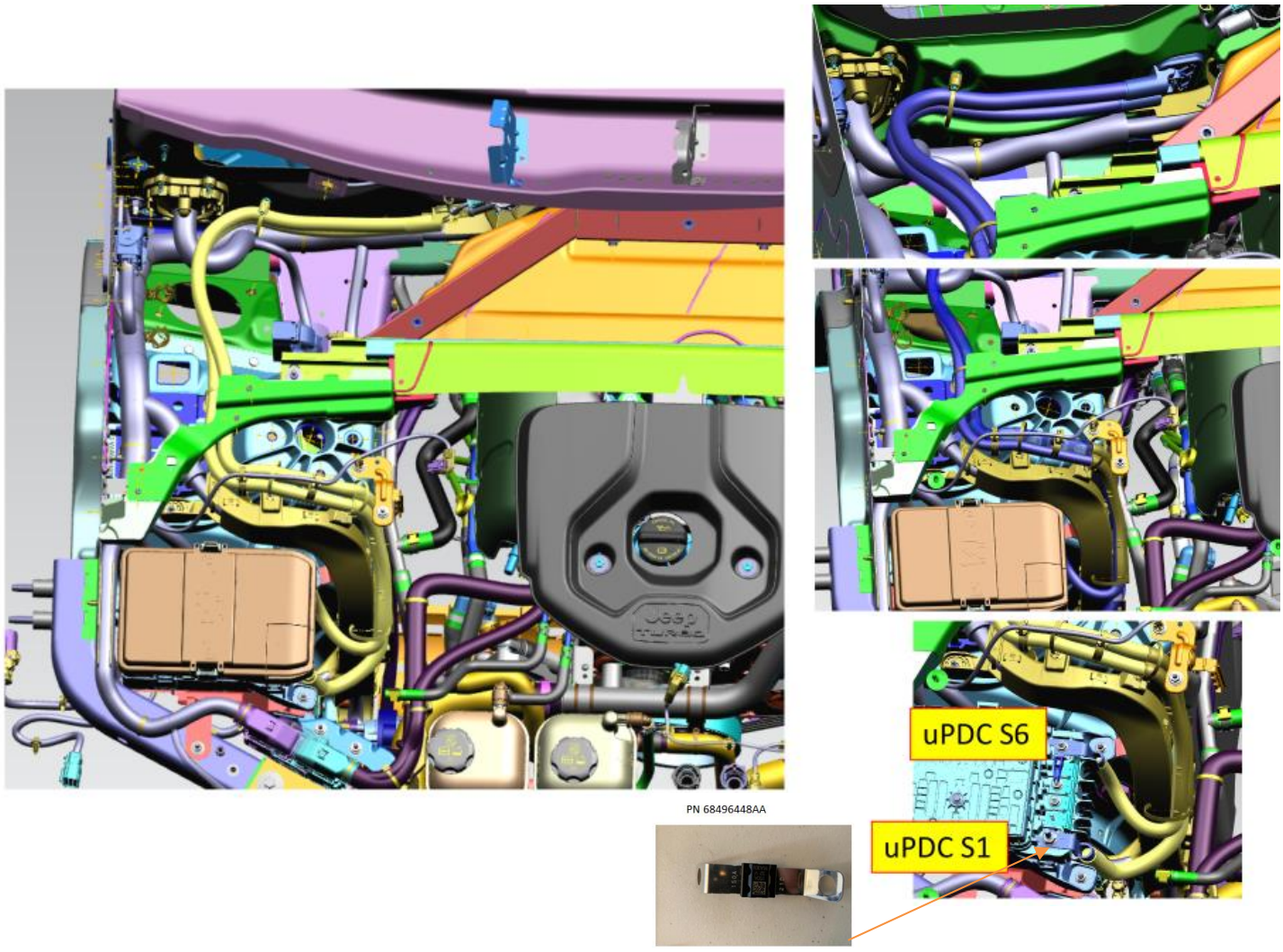
Rear Battery PDC Connections



PN 68498509AA

Rear PDC fuse array: **68498509AA** Note: The 150A fuse of this array is post #5 at the rPDC and is marked on the fuse array housing.

Under Hood Battery Connections



150A under hood PDC F11: **68496448AA** Note: This is the 150A fuse that is beneath the under hood PDC and attached within the lower cover/bracket.

Diagnostic 1 - Auxiliary Battery Disconnected: During an initial key start, the Power Control Relay is commanded on **(open)** and the Auxiliary Battery State of Charge (SOC) is evaluated. If the Fused B+ voltage to the Powertrain Control Module (PCM) is so low that the PCM experiences a reset during the initial key-on or engine crank event, the **PCM will set P00FD and ESS will be disabled.**

NOTE: This will cause a no crank condition. On the next key cycle, the DTC will be active. The PCM will de-energize the Power Control Relay with an active DTC which will connect the Main Battery to the Auxiliary Battery, allowing the PCM to power up and allow engine cranking.

Diagnostic 2 - Auxiliary Battery Depleted: During an ESS Auto-start event, the Power Control Relay is temporarily commanded on (open) disconnecting the Main and Auxiliary Batteries from each other. This allows the Auxiliary Battery SOC to be separately monitored by the PCM. If the Auxiliary Battery voltage drops below a calibrated threshold (approximately 8.0 volts) during the ESS Auto-start event, the **PCM will set P00FD and ESS will be disabled.**

Diagnostic 3 - Auxiliary Battery is Depleting: During the ESS Auto-start event, if the Auxiliary Battery voltage drops below a calibrated threshold the PCM will increment a counter by 1. ESS will be disabled for a short period to allow the Auxiliary Battery to charge before being re-enabled and tested again. If the voltage returns above a calibrated threshold on the next Auto-start event, the counter will decrement by 1. If the voltage is still below the calibrated threshold on the next Auto-start event, the counter will increment by 1 again. If the counter reaches 10 counts, the **PCM will set P00FD and ESS will be disabled.**

Diagnostic 4 - Power Control Relay Stuck Off: During the ESS Auto-start event, if the PCM detects little or no difference (delta) between the Auxiliary Battery voltage and Main Battery voltage, the **PCM will set P2AF6 and ESS will be disabled.**

Diagnostic 5 - Auxiliary Battery Disconnected from Main Battery: During normal engine operation, when the vehicle is not in an ESS Auto-start event, the Power Control Relay is commanded off (closed), connecting the Main and Auxiliary Batteries together to allow the Main Battery to charge. If the difference (delta) between Auxiliary Battery voltage and Main Battery voltage is more than a calibrated threshold, the **PCM will set P2AF5 and ESS will be disabled.**