

CERTAIN 2005 THROUGH 2007 MODEL YEAR ESCAPE HYBRID AND 2006 THROUGH 2007 MODEL YEAR MARINER HYBRID VEHICLES — SERVICE HARNESS INSTALLATION

OVERVIEW

This program involves installing a service harness in the High-Voltage Traction Battery (HVTB) and reprogramming the Battery Control Module (BCM).

Verify that the caution light is not ON before performing this repair. If caution light is ON, correct the condition before performing this program. Correcting a caution light resulting from any DTC other than P0A27 is **NOT** covered under this program.

NOTE: While it is not required, we recommend that this service procedure be performed by a technician that has completed the Hybrid Escape / Mariner New Model Classroom Training (course code 30N10T0).

SERVICE PROCEDURE

- WARNING: WHEN SERVICING THE HIGH-VOLTAGE SYSTEM, ESTABLISH A BUFFER ZONE PER THE SPECIFIED PROCEDURE IN THE WORKSHOP MANUAL. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**
- WARNING: DEPOWER THE HIGH-VOLTAGE TRACTION BATTERY (HVTB) BEFORE CARRYING OUT ANY REMOVAL OR INSTALLATION PROCEDURES AFFECTING THE HIGH-VOLTAGE BATTERY SYSTEM. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**
- WARNING: WEAR HIGH-VOLTAGE INSULATED SAFETY GLOVES AND A FACE SHIELD WHEN WORKING WITH HIGH-VOLTAGE BATTERIES OR CABLES. THE HIGH-VOLTAGE INSULATED SAFETY GLOVES SHOULD BE OF APPROPRIATE SAFETY AND PROTECTION RATING. INSPECT THE GLOVES BEFORE USE AND ALWAYS WEAR THEM WITH THE LEATHER OUTER GLOVE. ANY HOLE IN THE RUBBER INSULATING GLOVE IS A POTENTIAL ENTRY POINT FOR HIGH-VOLTAGE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**
- WARNING: DO NOT PUT WATER ON THE BATTERY BOX AND AVOID CONTACT OF THE BATTERY BOX WITH WATER WHILE WORKING ON THE HIGH VOLTAGE TRACTION BATTERY (HVTB). REMOVE ALL JEWELRY FROM FINGERS AND WRISTS PRIOR TO STARTING WORK ON THE HVTB. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**



WARNING: TURN OFF THE IGNITION SWITCH FOR A MINIMUM OF 5 MINUTES BEFORE REMOVING HIGH-VOLTAGE CABLES. HIGH-VOLTAGE CABLES, CONNECTORS AND WIRING ARE ORANGE IN COLOR. DO NOT TOUCH ORANGE-COLORED CABLES, CONNECTORS OR WIRING ONCE THE BATTERY BOX IS REMOVED. THE NOMINAL HIGH-VOLTAGE TRACTION BATTERY (HVTB) VOLTAGE IS 330 VOLTS DC. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH. SEE FIGURE 1 FOR LOCATIONS OF ORANGE HIGH-VOLTAGE CONNECTORS AND WIRES THAT SHOULD NOT BE TOUCHED.

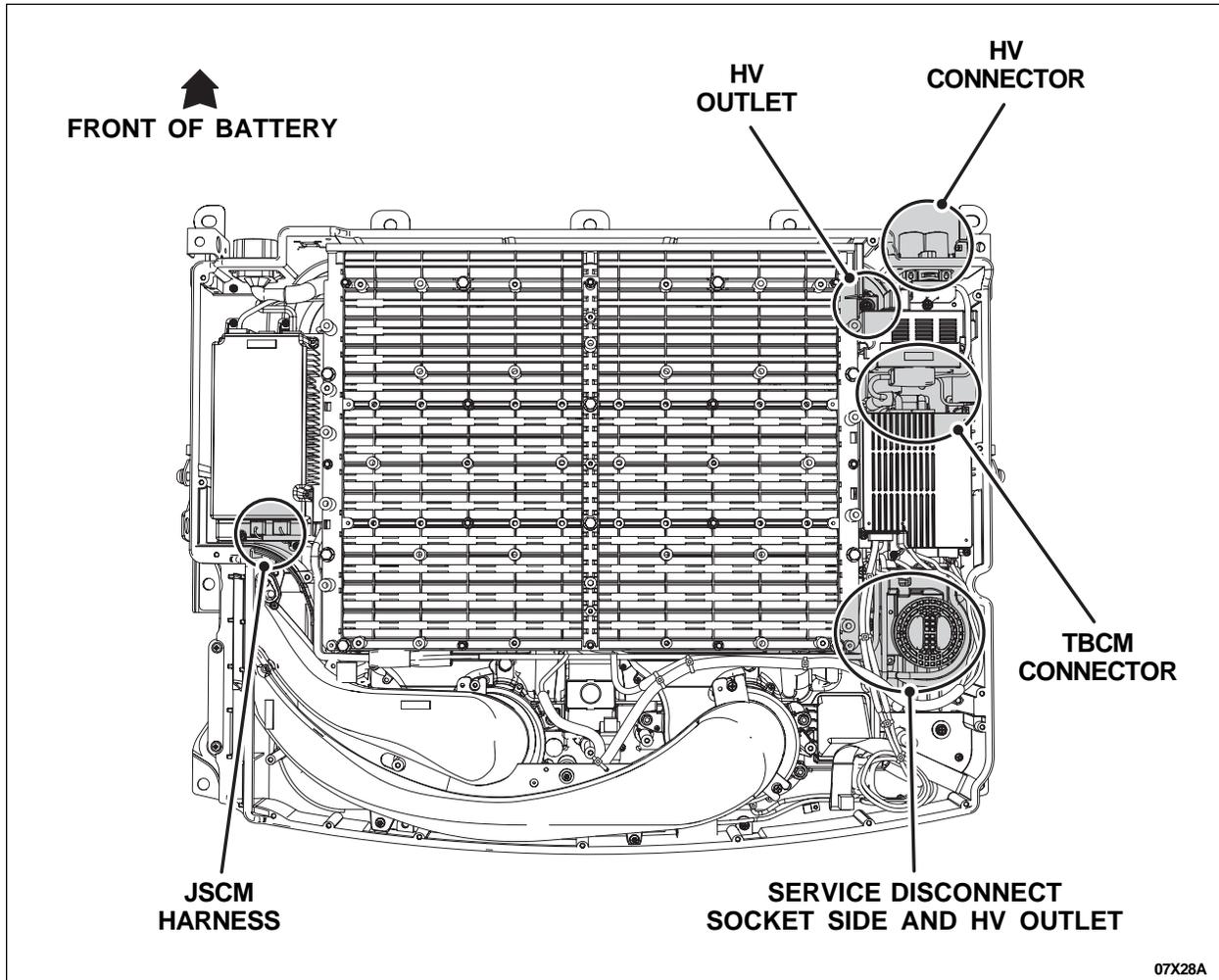


FIGURE 1



1. NOTE: There is a possibility of the isolator frames coming off from the battery box, do not swing or displace the battery box in any direction.

Remove the High-Voltage Traction Battery (HVTB) and place on a suitable work table that can support at least 100 kg (220 lb). Refer to the applicable model year Workshop Manual Section 414-03 for the removal procedure and warnings.

CAUTION: Do not use power tools to remove the screws from the battery box. The screws thread into plastic bosses in the battery box. The use of power tools may damage the battery box bosses. Damage to the battery box bosses requires replacement of the battery, which is not covered by this program.

2. Remove the Allen-head bolt and Torx-head bolt from both sides of the front battery cover. See Figure 2.

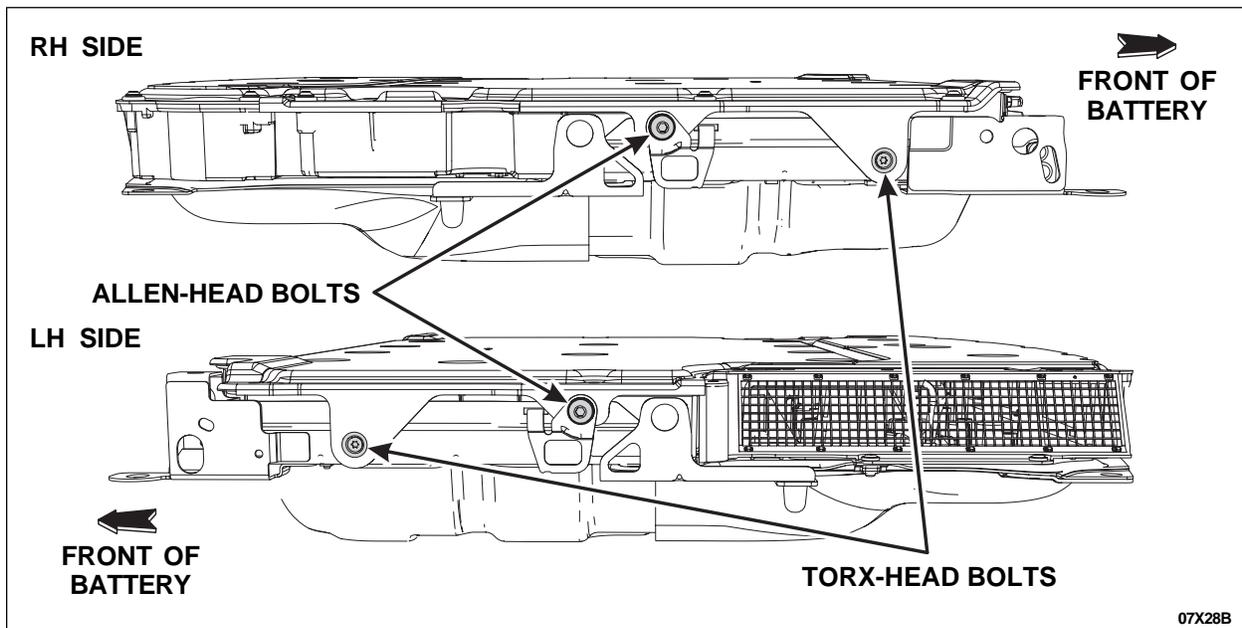


FIGURE 2



3. Remove the 2 Hex-head bolts securing the front side of the front battery cover. See Figure 3.

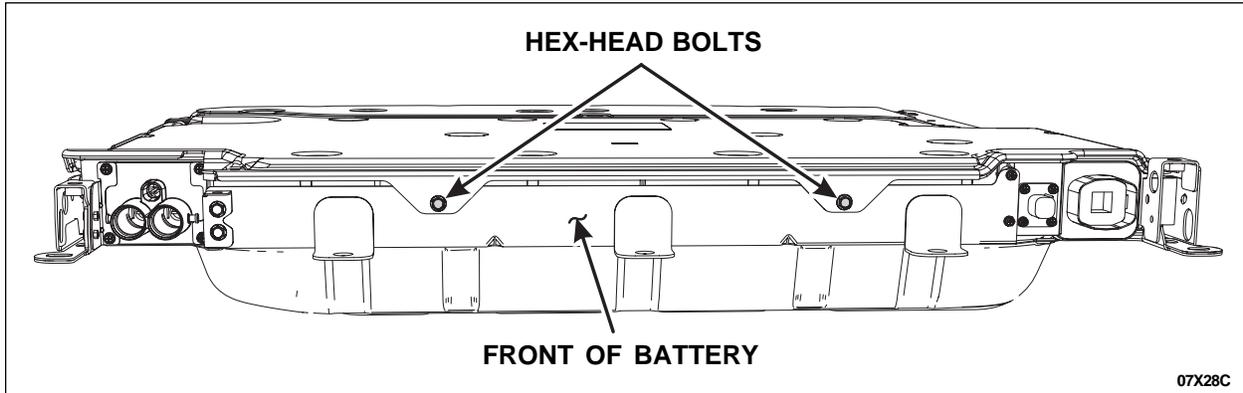


FIGURE 3

4. Remove the 18 Torx screws from the front battery cover. See Figure 4.

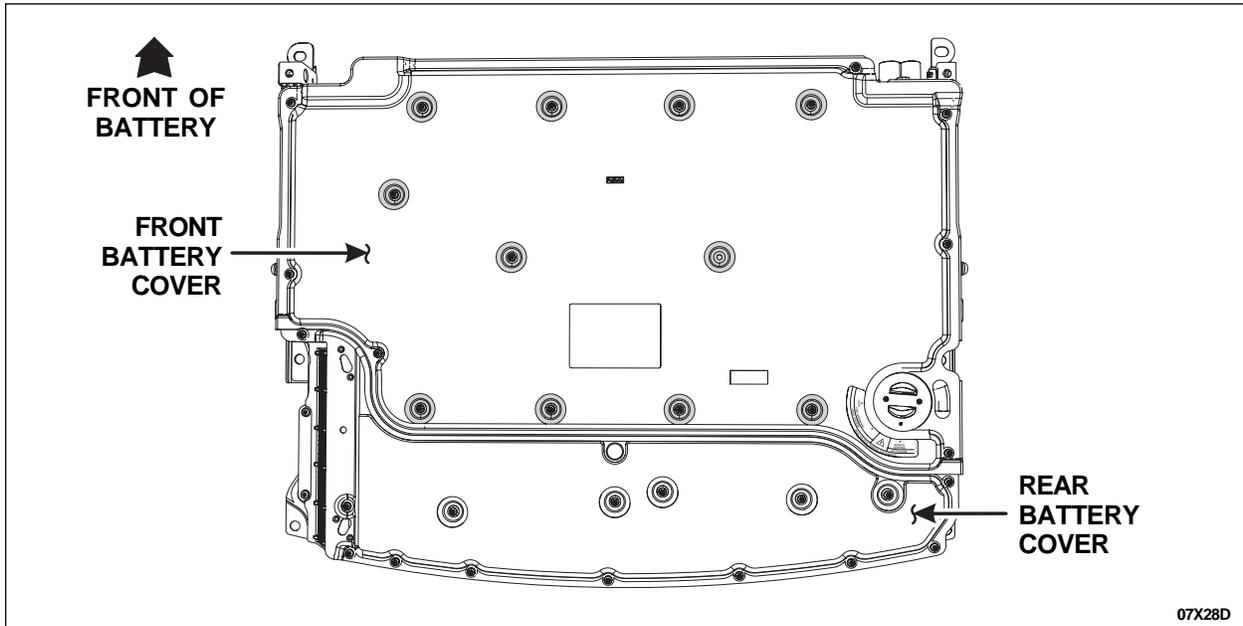


FIGURE 4



5. Remove the 15 Torx screws from the rear battery cover. See Figure 5.

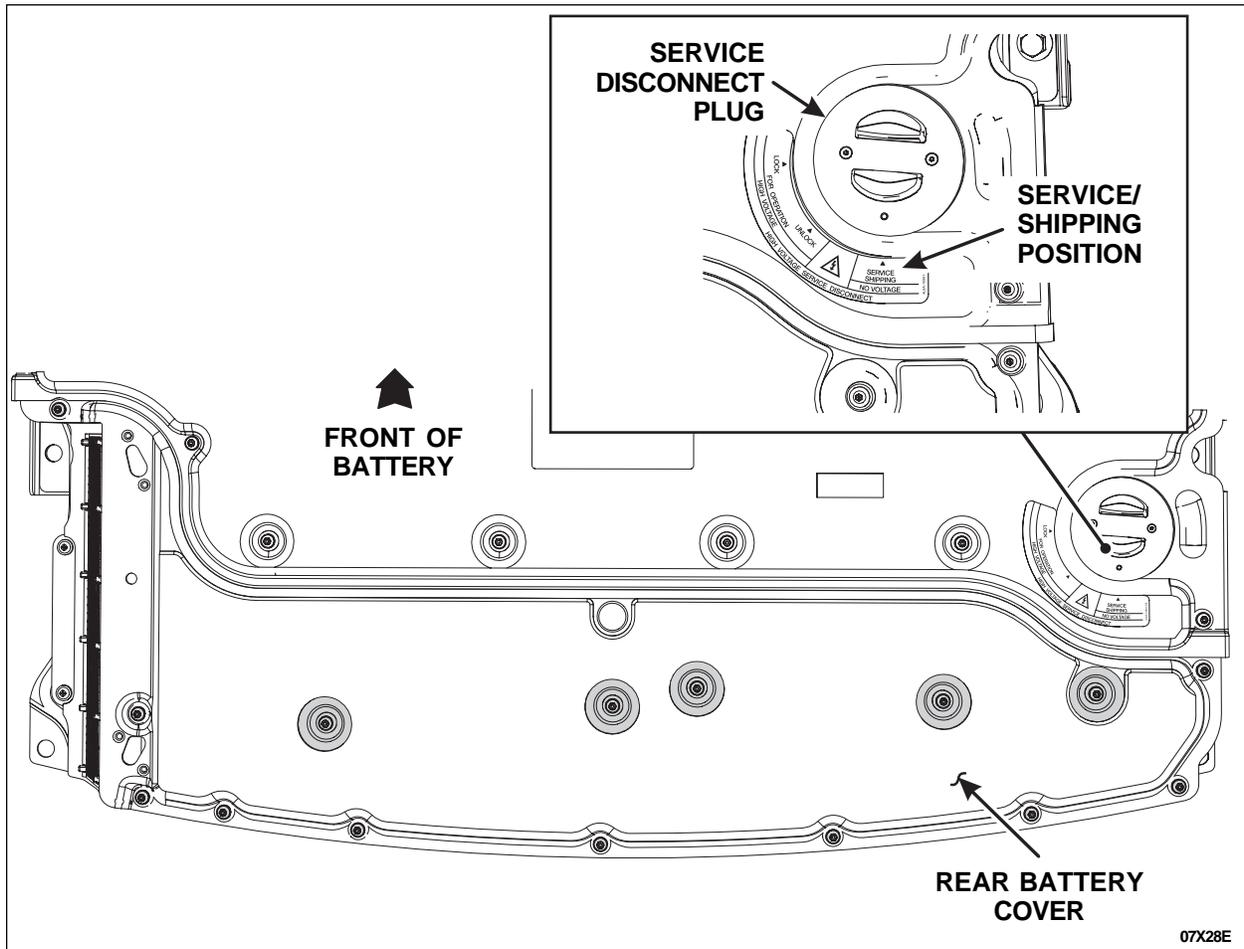
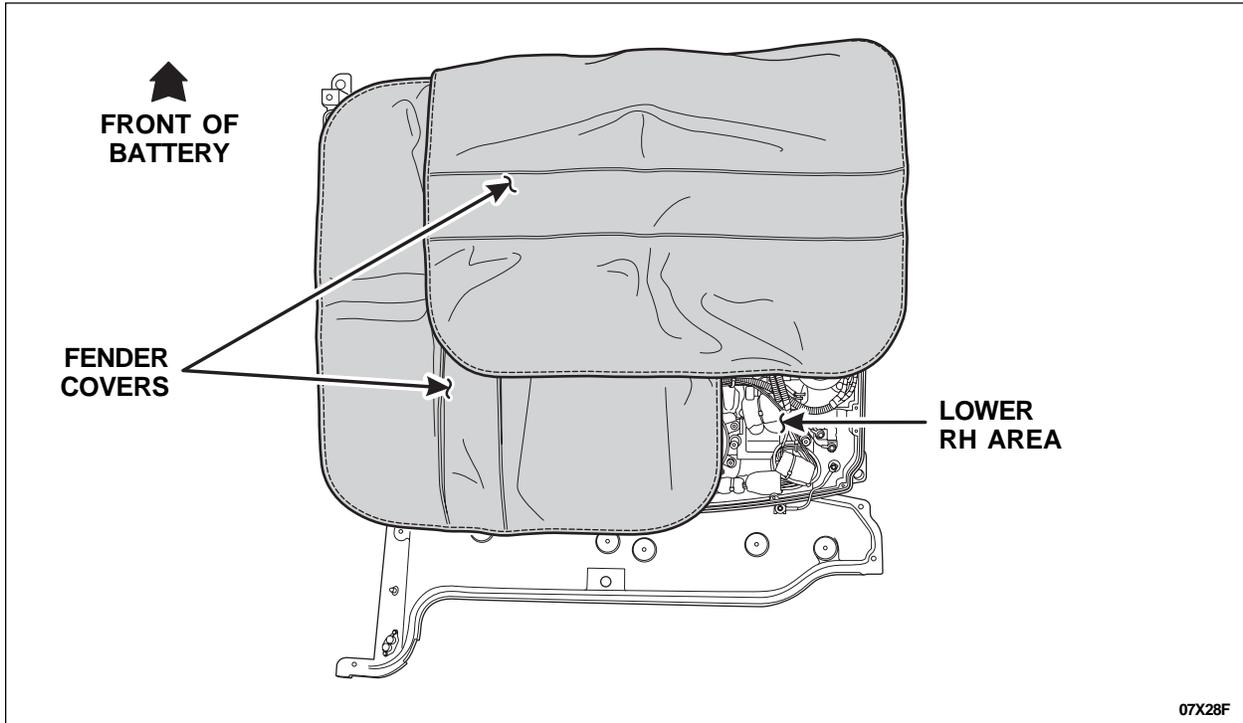


FIGURE 5

6. Remove the service disconnect plug and remove the front battery cover.
7. Reinstall the service disconnect plug in the SERVICE/SHIPPING position. See Figure 5.
8. Open the rear battery cover. The rear battery cover is connected to the battery box with 2 metal tethers, do not disconnect the tethers.



9. Cover the battery box using fender covers to make sure no debris falls into the battery box, leaving the lower RH area exposed. See Figure 6.



07X28F

FIGURE 6



10. Pull the connector, which is located near the service disconnect plug, out of the battery box and remove the insulation from the connector. Do not use any solvent to remove the insulation. See Figure 7.

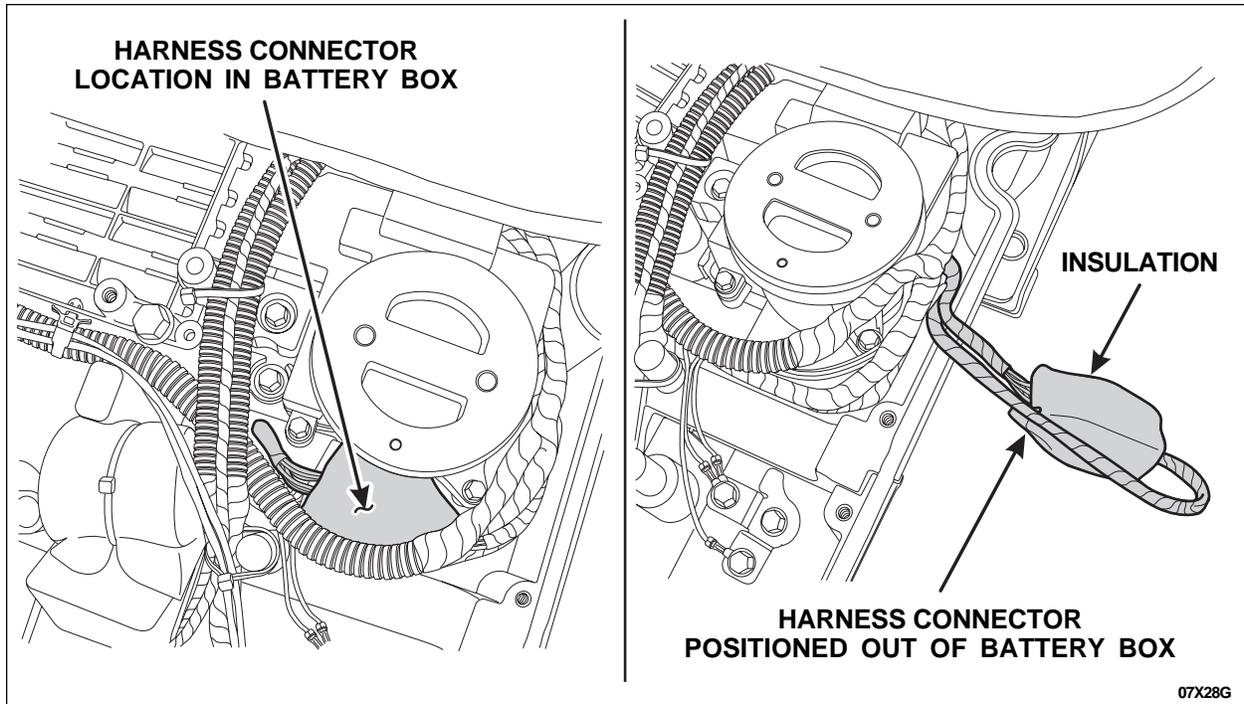


FIGURE 7

11. Slide out the lock cover (dark red part) and depress the release mechanism to unlock and disconnect the connector. Attach the service harness between the male and female parts of the original connectors. See Figure 8.

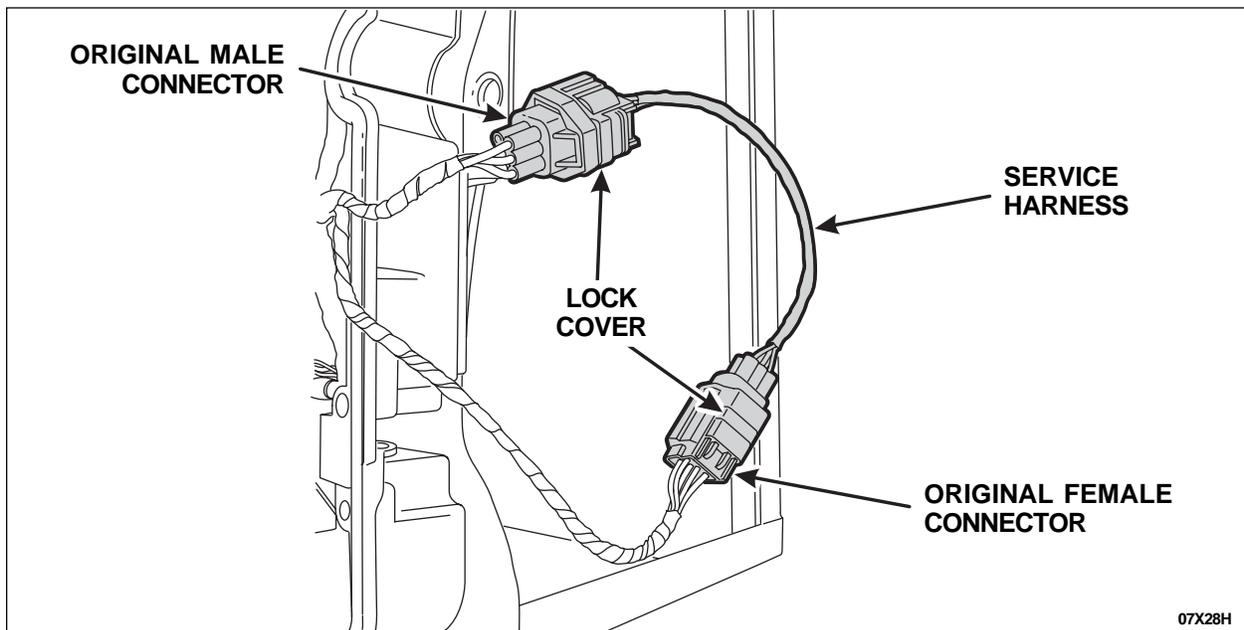


FIGURE 8



12. Wrap the thin insulation provided around the original male side of the connector. See Figure 9.

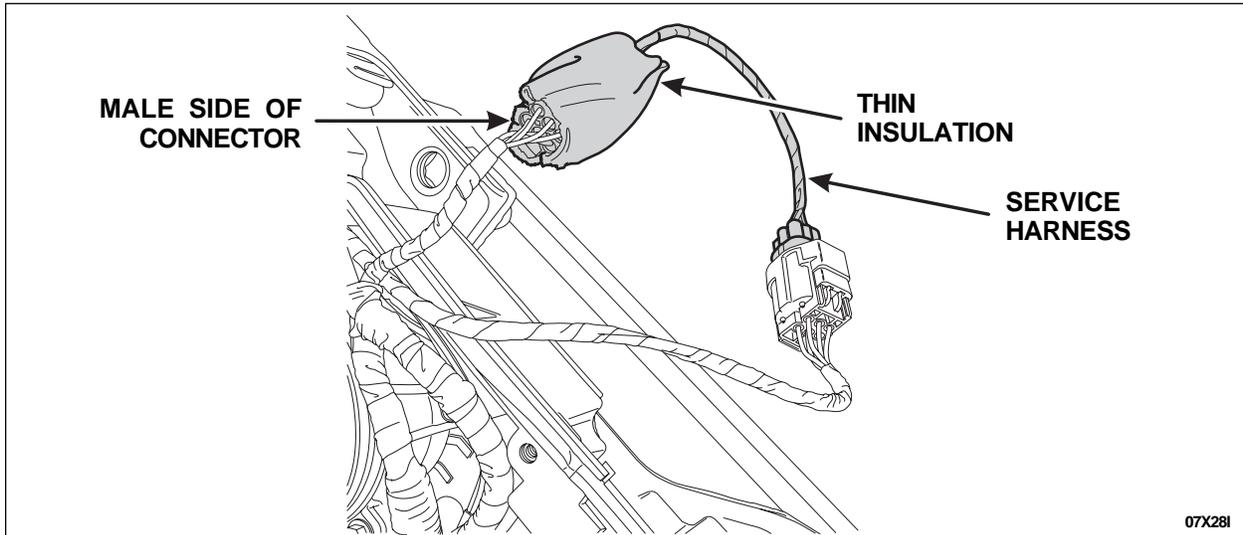


FIGURE 9

13. Run the service harness between the 2 bosses and guide the original female connector to the cavity next to the fan motor assembly. Attach the service harness to the boss using the provided tie strap and cut and remove the unused part of the strap. See Figure 10.

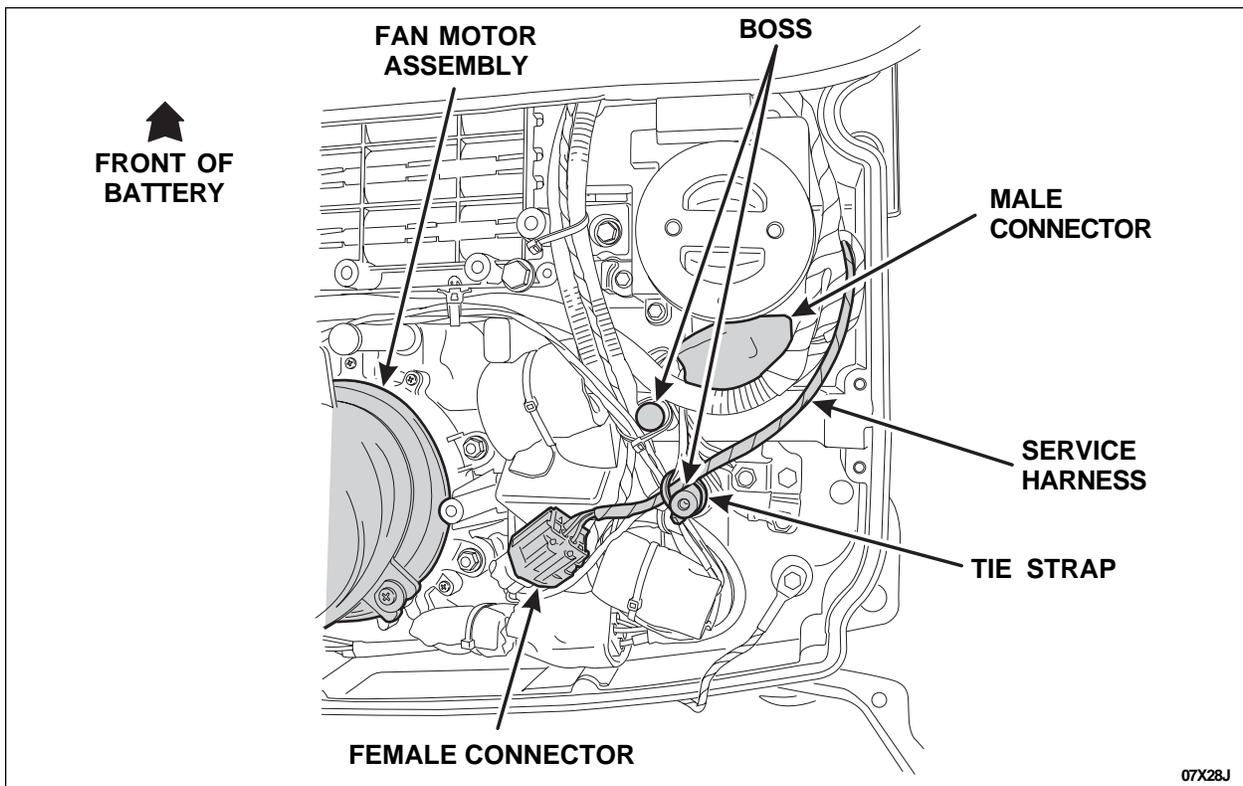


FIGURE 10



14. Wrap the female side of the original connector and service harness together with the provided thicker insulation. Attach the tie strap provided around the insulation. Make sure that the connector is completely covered. See Figure 11.

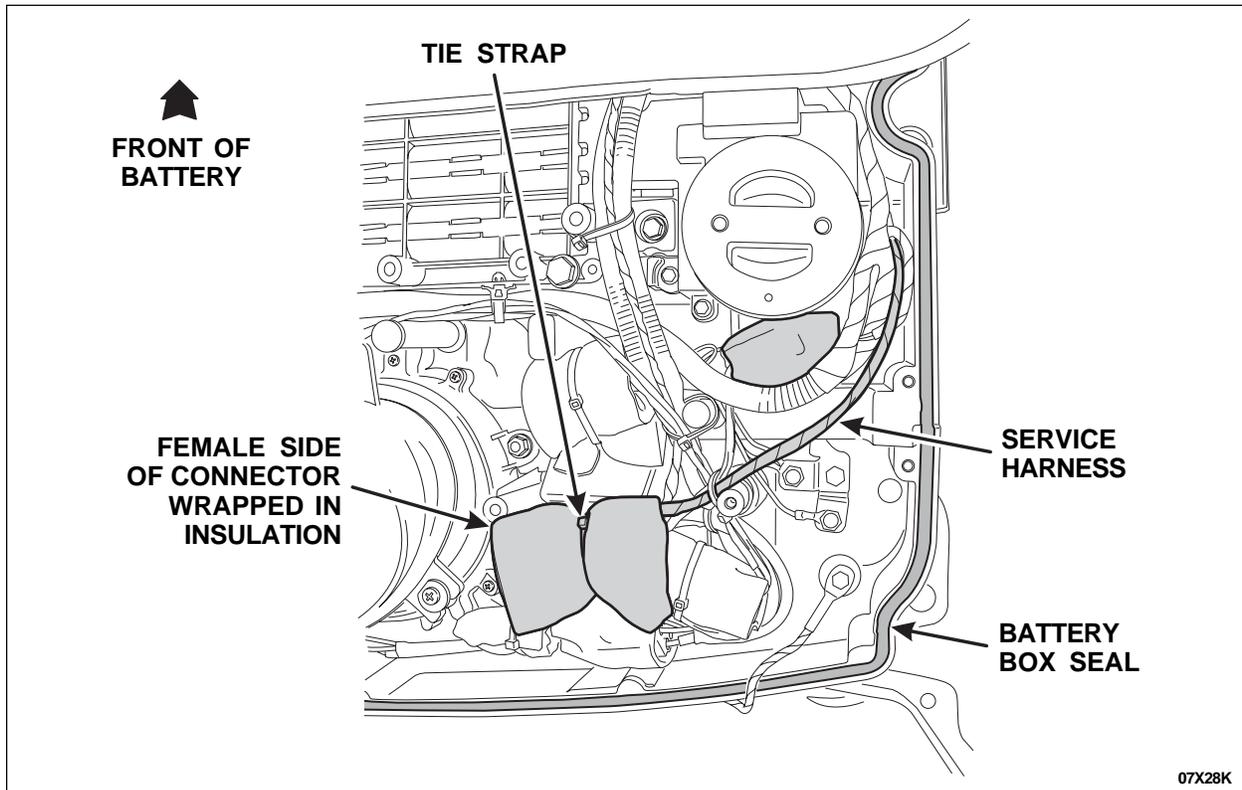


FIGURE 11

15. Remove the fender covers.
16. Before installing the front and rear battery covers:
 - check for and remove any unused material in the battery box.
 - check that the harness does not protrude out of the battery box.
 - check that the seal is in the groove of the battery box.
17. Install the rear battery cover assembly but do not install the screws at this time.
18. Remove the service disconnect plug and install the front cover assembly, but do not install the screws at this time.



19. Reinstall the service disconnect plug in the SERVICE/SHIPPING position. See Figure 12.

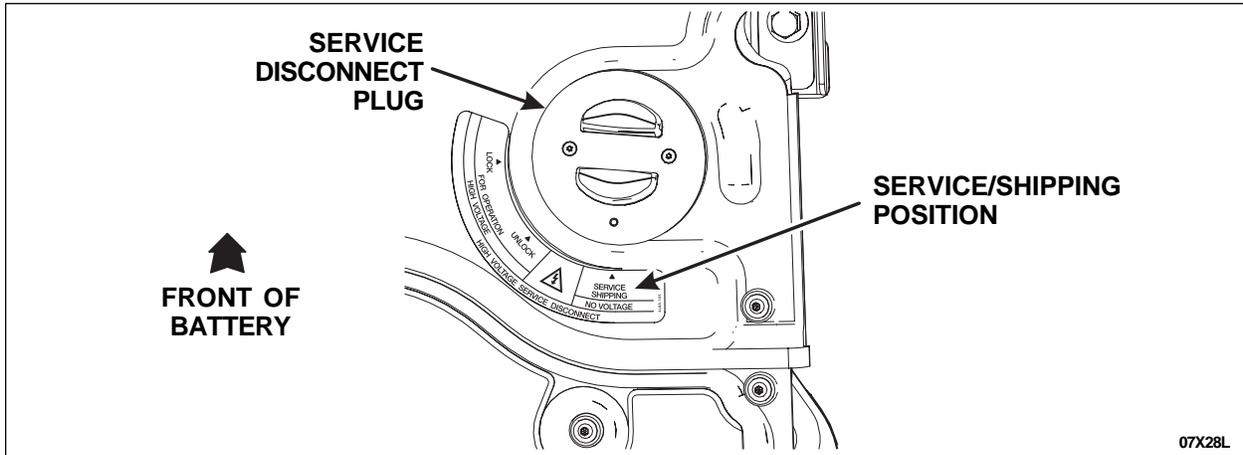


FIGURE 12

20. Before installing the screws, make sure that the battery seal is in the correct location and there is nothing protruding from the battery box.

CAUTION: Do not use power tools to tighten the battery box screws. The screws thread into plastic bosses. The use of power tools may over-tighten the screws and damage the battery box bosses. Damage to the battery box bosses requires replacement of the battery, which is not covered by this program.

CAUTION: For the finger tightening, manually align screw and tighten 2 threads or more to prevent crossthreading and then run them down until they just touch the battery cover.

21. Install the 15 Torx screws finger-tight in the rear battery cover, then tighten to 3 Nm (26 lb-in) in the sequence shown in Figure 13.

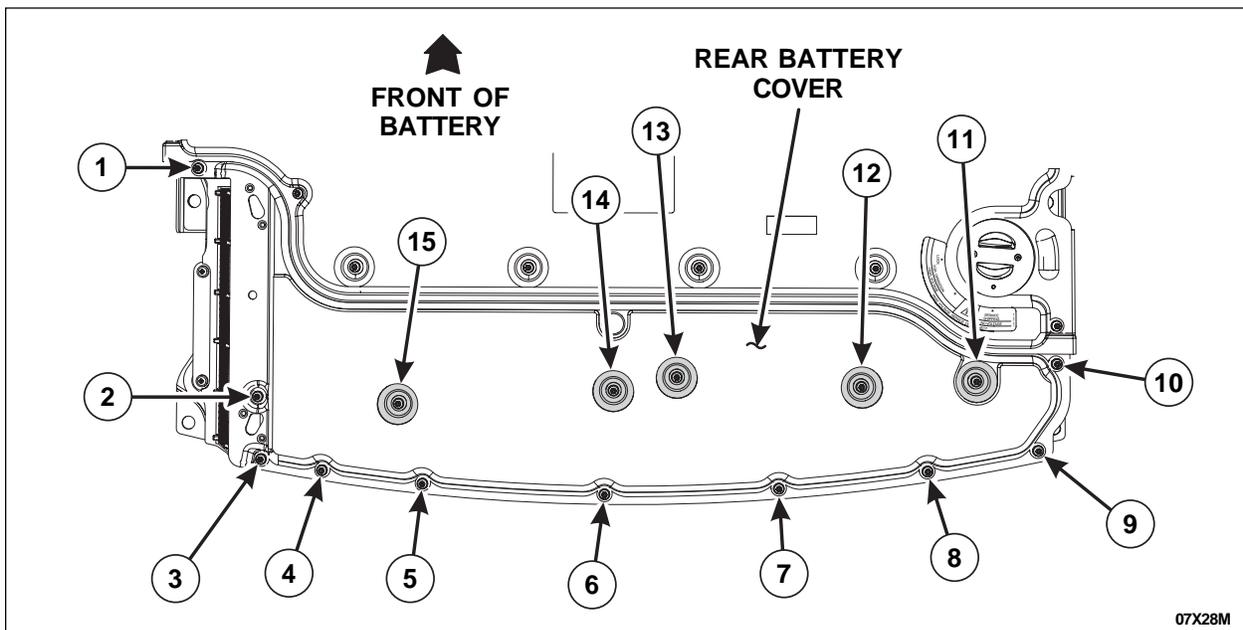


FIGURE 13



22. Install and finger-tighten the 2 Torx-head bolts and 2 Allen-head bolts (2 each side) in the side of the battery box. Make sure that the tether bracket is correctly installed. Do not tighten the bolts at this time. See Figure 14.

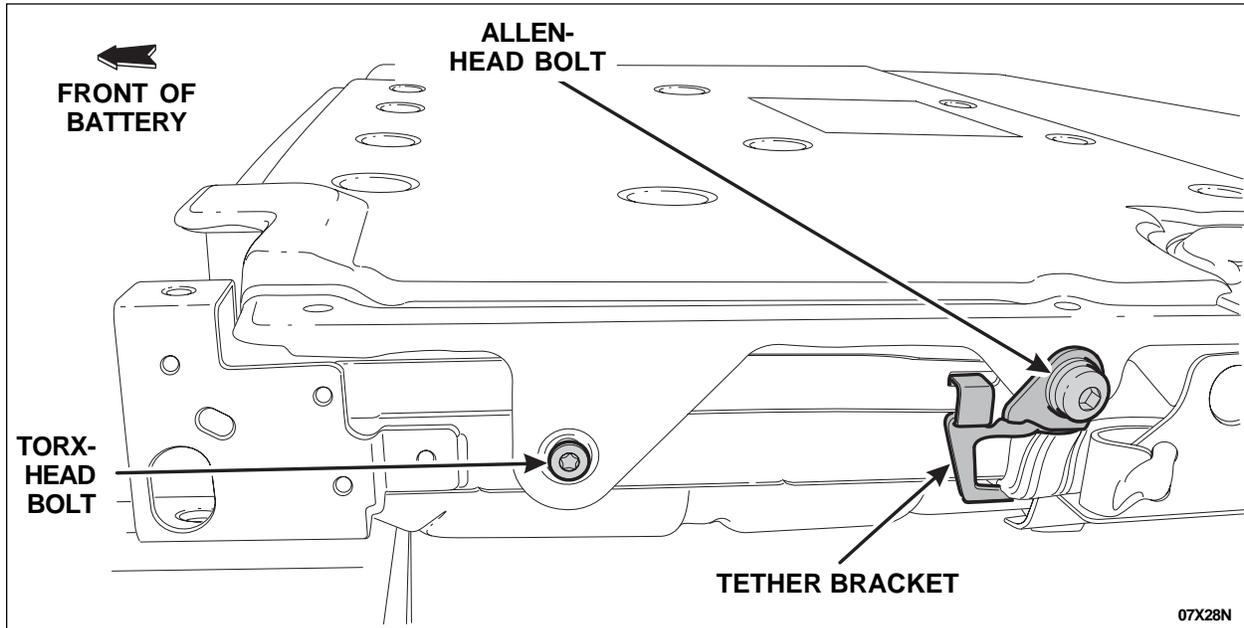


FIGURE 14

23. Install and finger-tighten the 2 Hex-head bolts securing the front side of the front battery cover. Do not tighten the bolts at this time. See Figure 15.

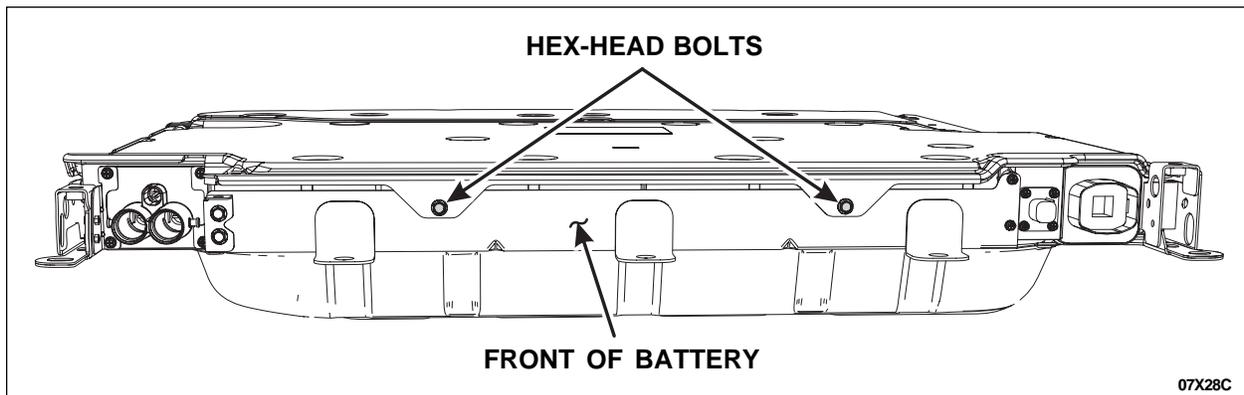


FIGURE 15



24. Install the 18 Torx screws finger-tight in the front battery cover. Do not tighten the screws at this time. See Figure 16.

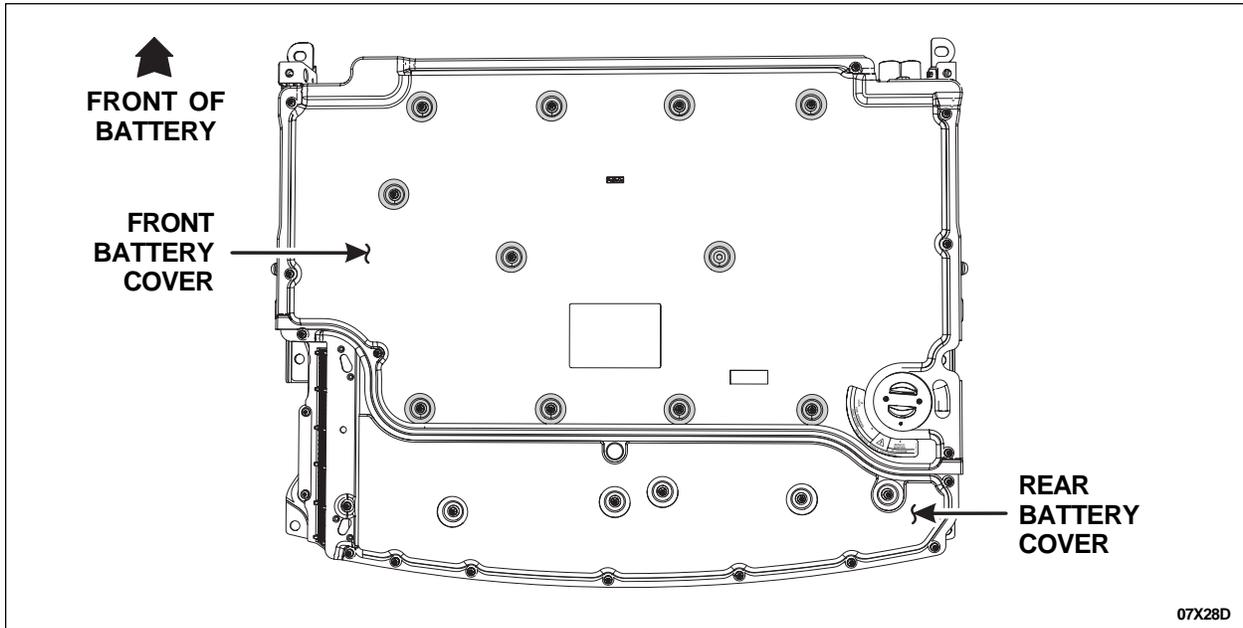


FIGURE 16

25. Tighten 11 of the 18 Torx screws in the front battery cover to 5.2 Nm (46 lb-in) in the sequence shown in Figure 17.

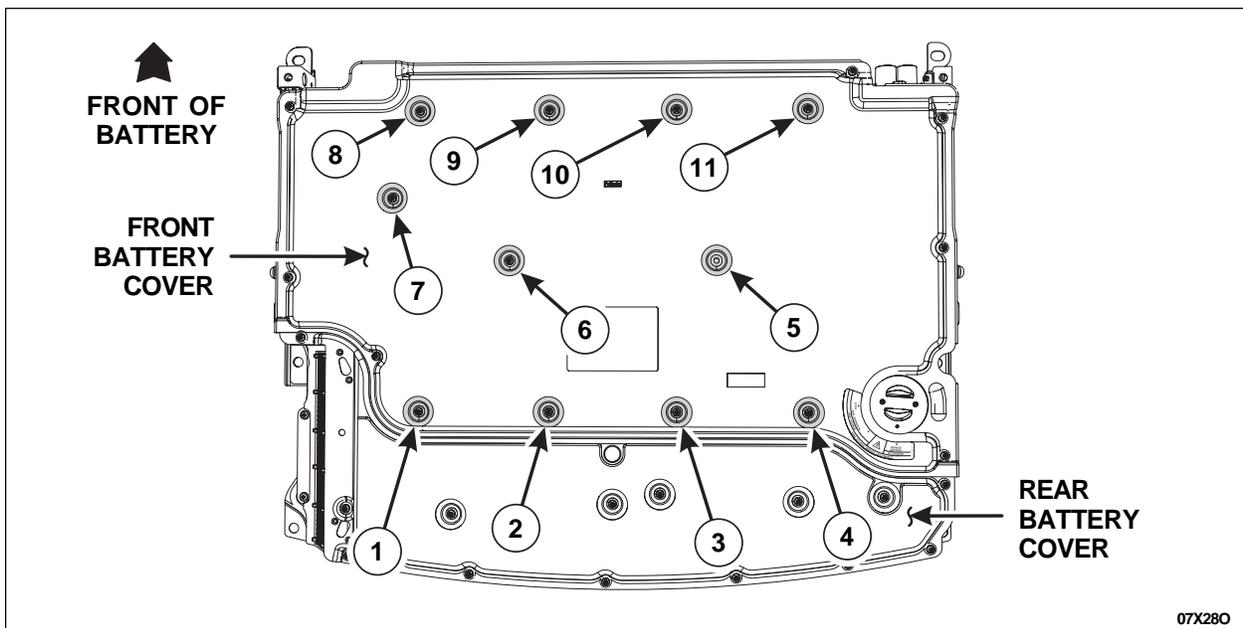


FIGURE 17



26. Tighten the remaining 7 Torx screws in the front battery cover to 3 Nm (26 lb-in) in the sequence shown in Figure 18.

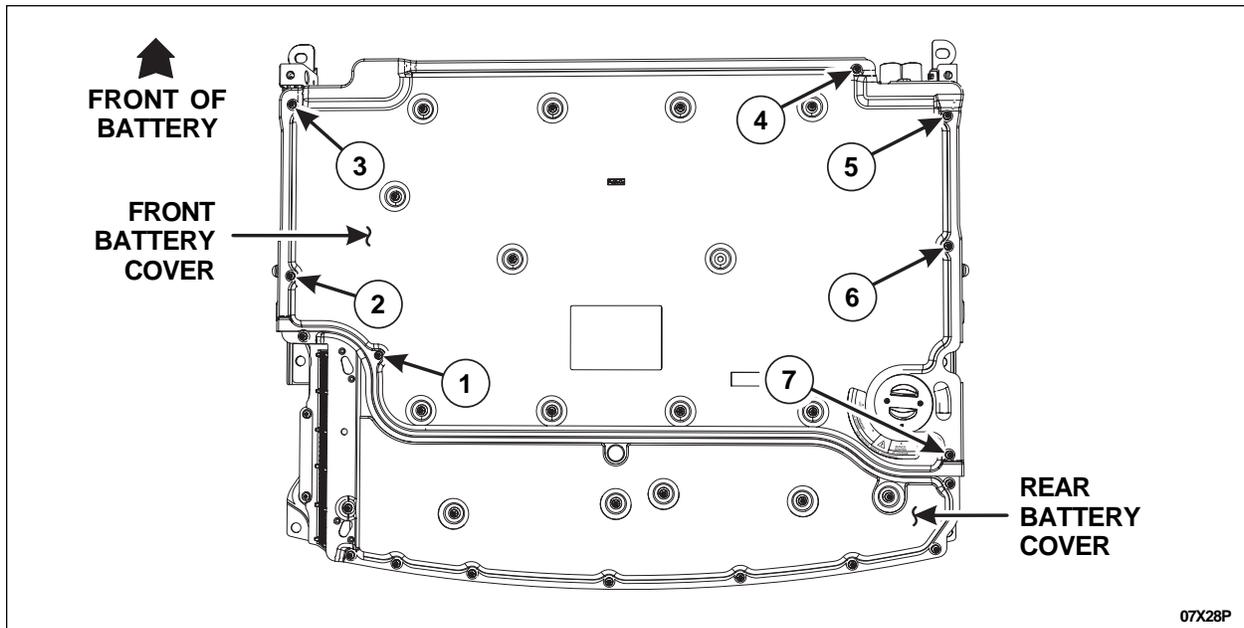


FIGURE 18

27. Tighten the Allen-head bolt on each side of the front battery cover to 20 Nm (15 lb-ft). See Figure 19.
28. Tighten the Torx screw on each side of the front battery cover to 14 Nm (10 lb-ft). See Figure 19.

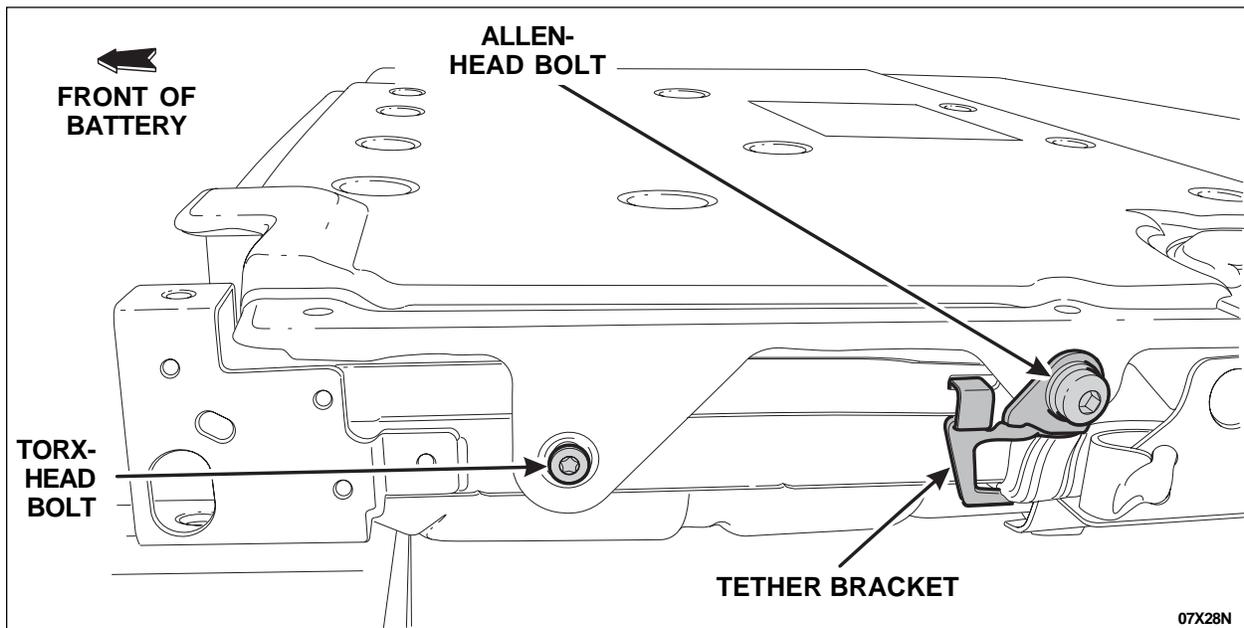


FIGURE 19



29. Tighten the 2 Hex-head bolts securing the front side of the front battery cover to 12 Nm (9 lb-ft). See Figure 20.

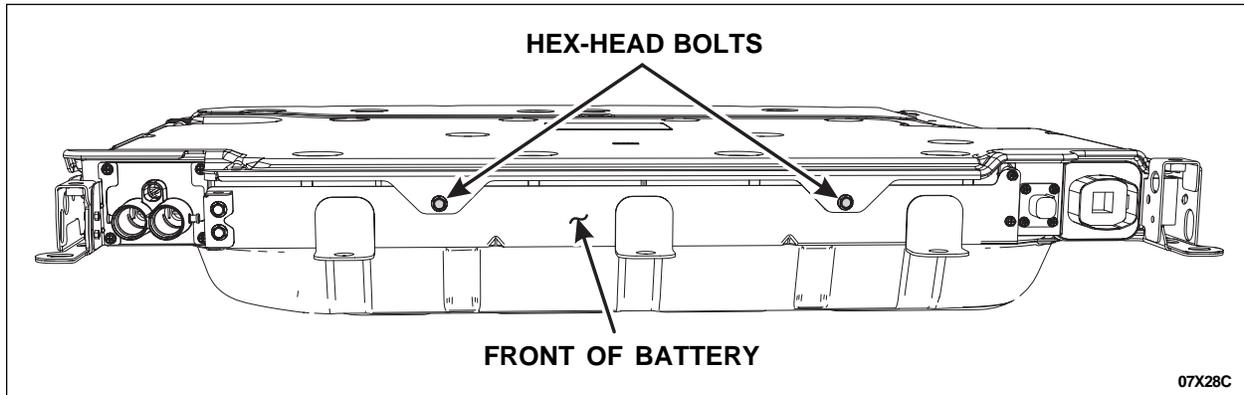


FIGURE 20

30. Install the HVTB. Refer to the applicable model year workshop manual Section 414-03 for the installation procedure.
31. Reprogram the BCM using version B50 or higher on Integrated Diagnostic System (IDS).

