

11. Inverter

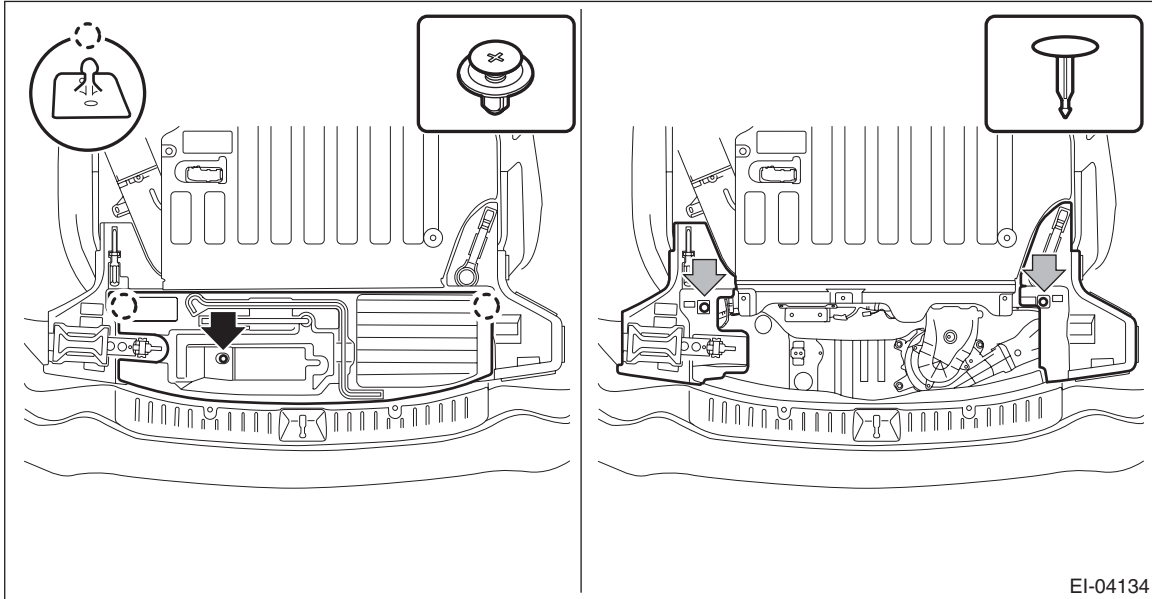
A: REMOVAL

1. DRIVE MOTOR INVERTER

WARNING:

The hybrid system includes a high voltage circuit. Mishandling could cause accidents such as electric shock or leak. Always check “CAUTION (HYBRID SYSTEM)” and perform the proper operation. <Ref. to PC-7, CAUTION (HYBRID SYSTEM), Precaution.>

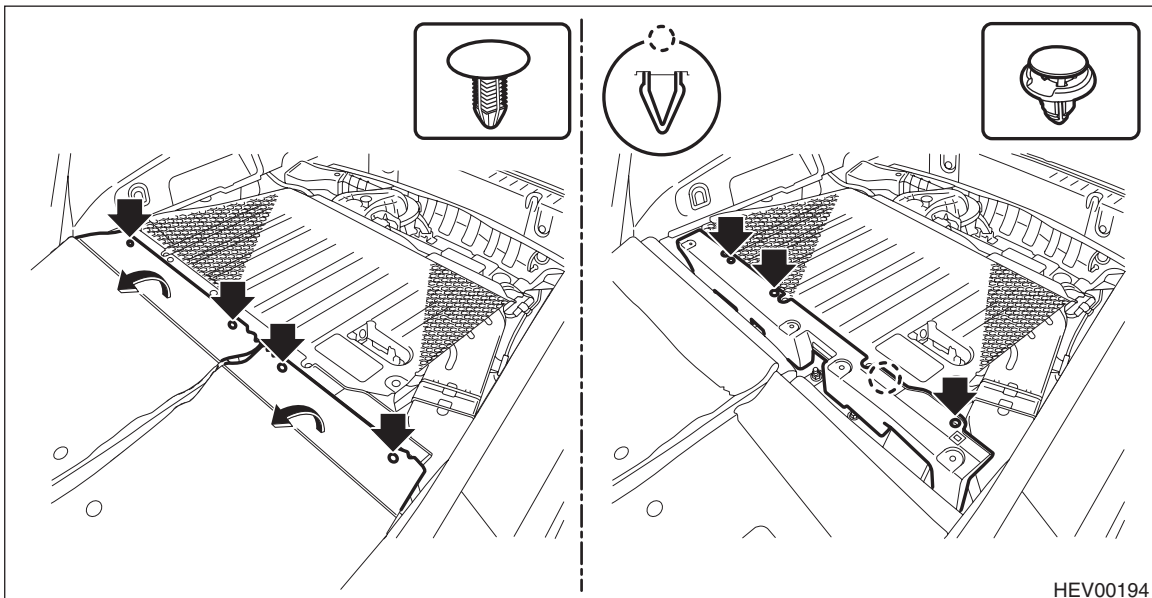
- 1) Remove the service disconnect plug. <Ref. to HEV-15, REMOVAL, Service Plug.>
- 2) Release the clips and claws, then detach the sub-trunk assembly and the spacer - rear floor side.



- 3) Remove the rear seat cushion and fold the backrest assemblies LH and RH. <Ref. to SE-23, REMOVAL, Rear Seat.>

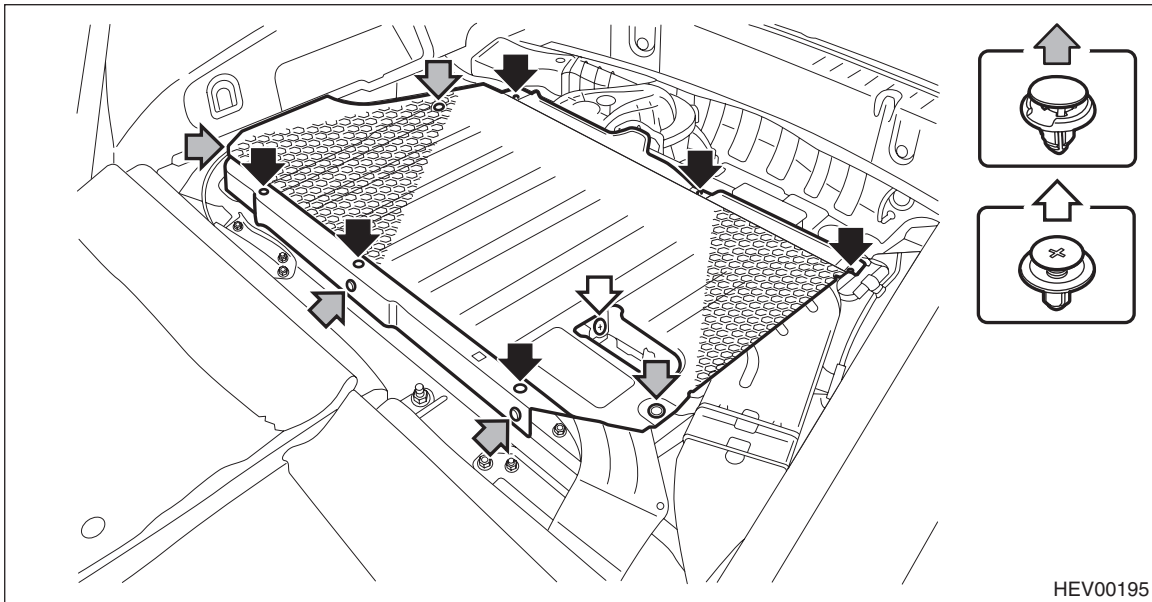
- 4) Remove the spacer - rear floor front.

- (1) Release the clips, and fold back the bottom of the cover COMPL - rear backrest LH and RH of the rear seat back.
- (2) Release the clips and claws, then detach the spacer - rear floor front.

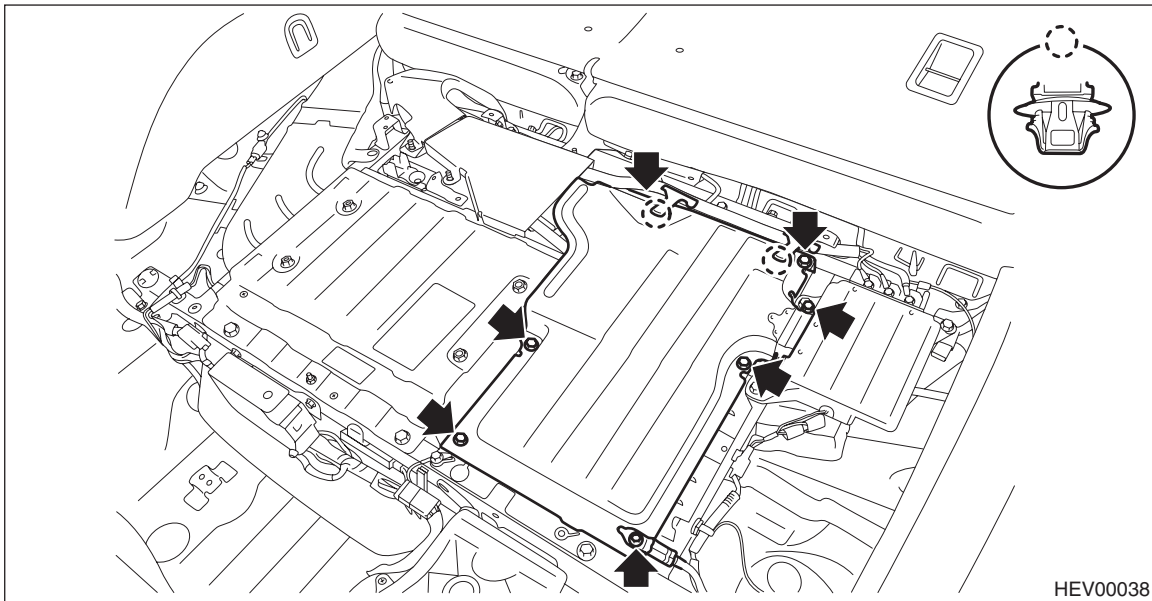


5) Remove the TORX® bolts, release the clips, and then remove the battery cover.

Preparation tool:
TORX® T30



- 6) Remove the inverter cover.
- (1) Remove the bolts and ground terminal.
 - (2) Release the cable clips, and remove the inverter cover.



Inverter

HYBRID ELECTRIC VEHICLE

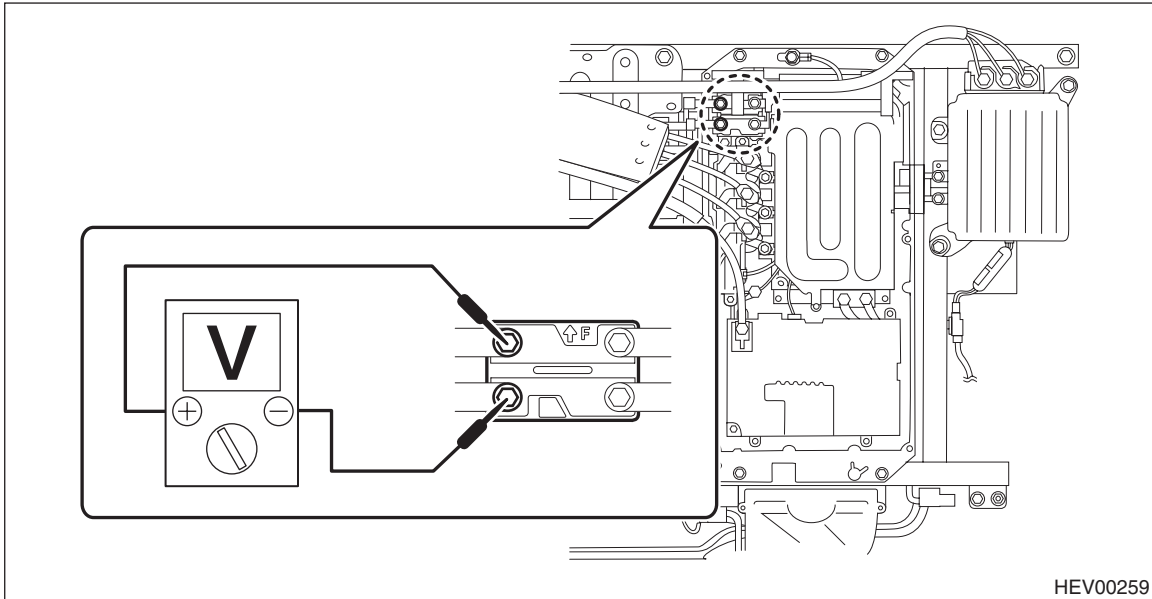
7) Perform zero-voltage test.

- (1) Measure the voltage of the high voltage DC line at the high voltage battery side of the electric noise filter.

Preparation tool:

Insulation multimeter

Standard: 0 V

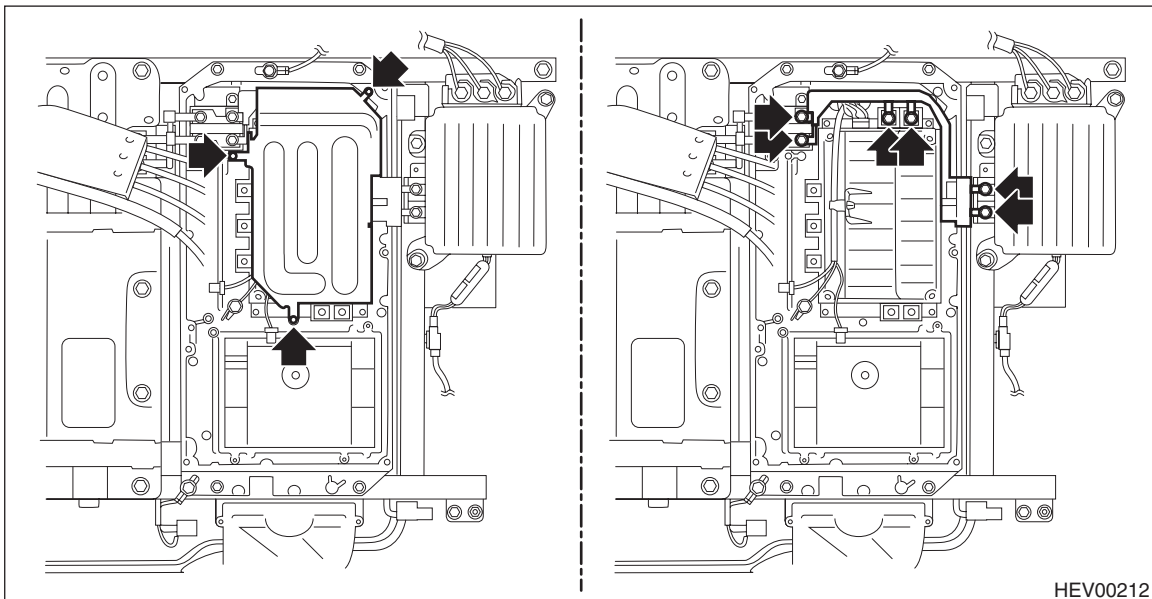


8) Remove the DC/DC converter. <Ref. to HEV-38, REMOVAL, DC/DC Converter.>

9) Remove the drive motor inverter amperage sensor. <Ref. to HEV-27, REMOVAL, Drive Motor Inverter Current Sensor.>

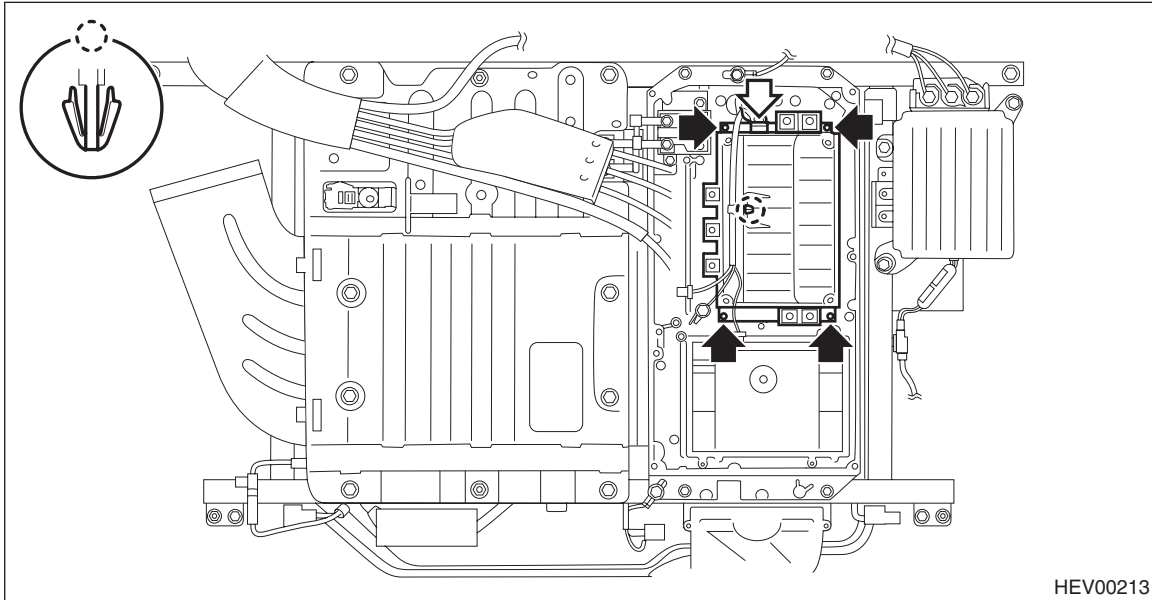
10) Remove the drive motor inverter.

- (1) Remove the bolts to remove the inverter shield.
- (2) Remove the bolts, then disconnect the bus bar between the electric noise filter and the electric oil pump inverter.



- (3) Release the connector and the harness clip.

- (4) Remove the bolts, and then remove the drive motor inverter.

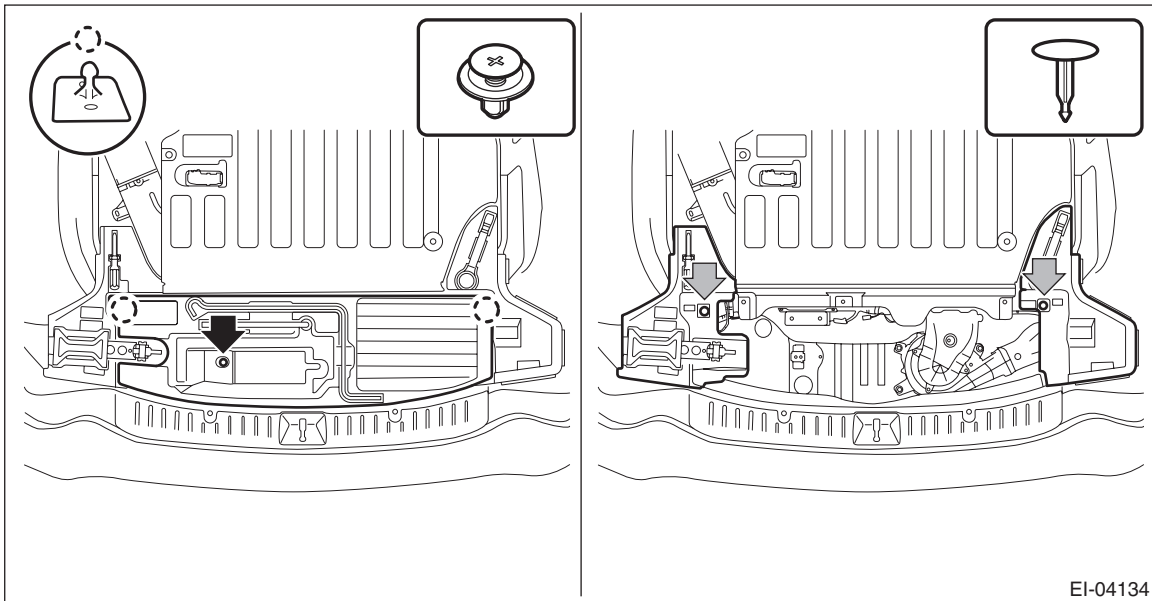


2. ELECTRIC OIL PUMP INVERTER

WARNING:

The hybrid system includes a high voltage circuit. Mishandling could cause accidents such as electric shock or leak. Always check “CAUTION (HYBRID SYSTEM)” and perform the proper operation. <Ref. to PC-7, CAUTION (HYBRID SYSTEM), Precaution.>

- 1) Remove the service disconnect plug. <Ref. to HEV-15, REMOVAL, Service Plug.>
- 2) Release the clips and claws, then detach the sub-trunk assembly and the spacer - rear floor side.



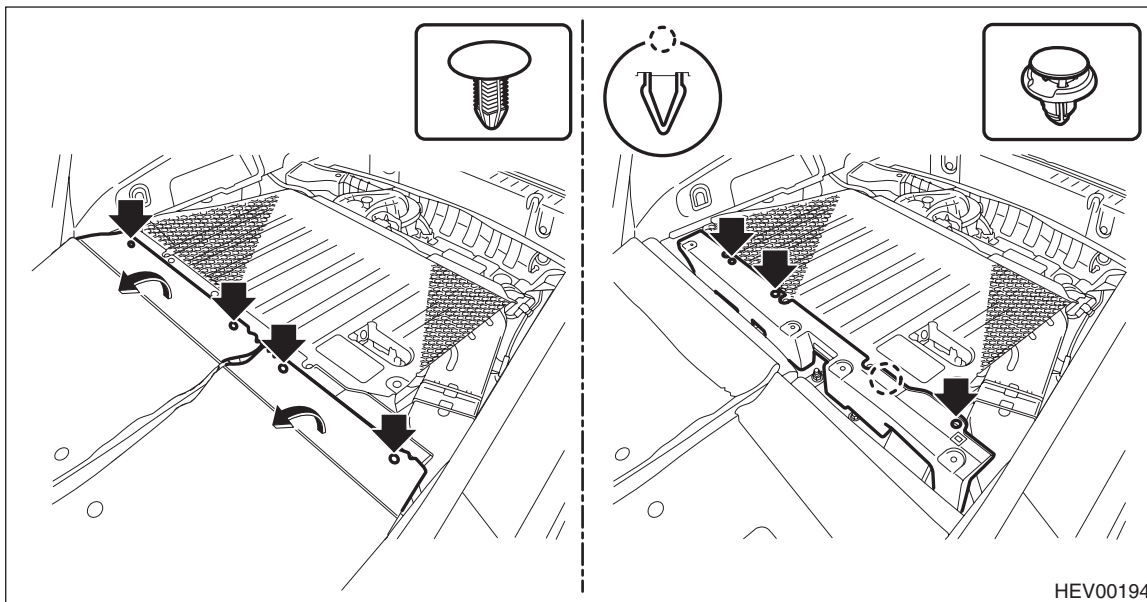
- 3) Remove the rear seat cushion and fold the backrest assemblies LH and RH. <Ref. to SE-23, REMOVAL, Rear Seat.>

Inverter

HYBRID ELECTRIC VEHICLE

4) Remove the spacer - rear floor front.

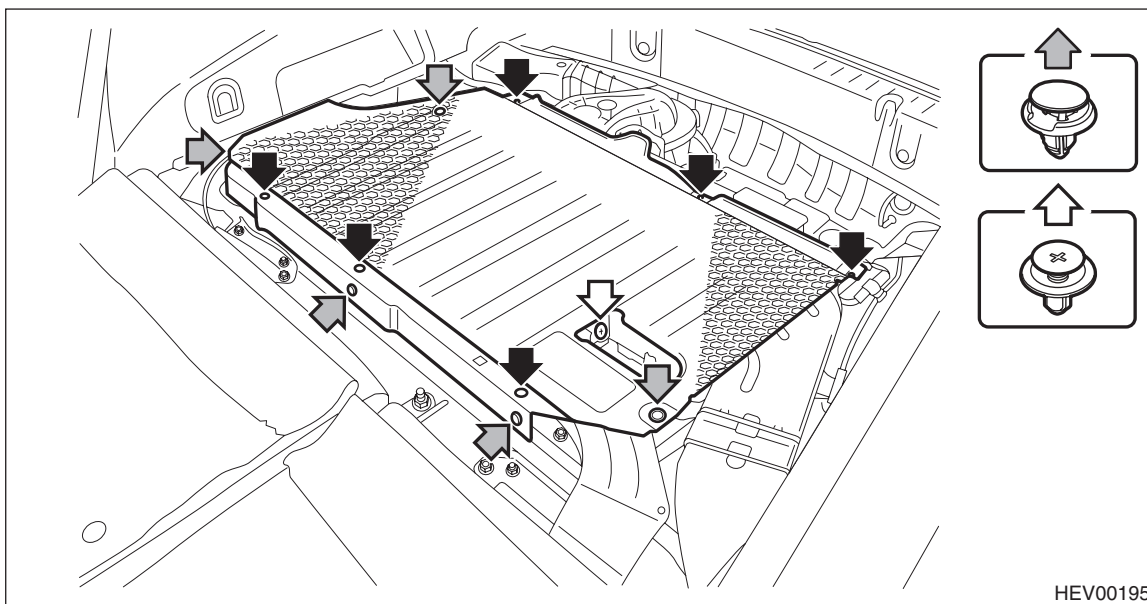
- (1) Release the clips, and fold back the bottom of the cover COMPL - rear backrest LH and RH of the rear seat back.
- (2) Release the clips and claws, then detach the spacer - rear floor front.



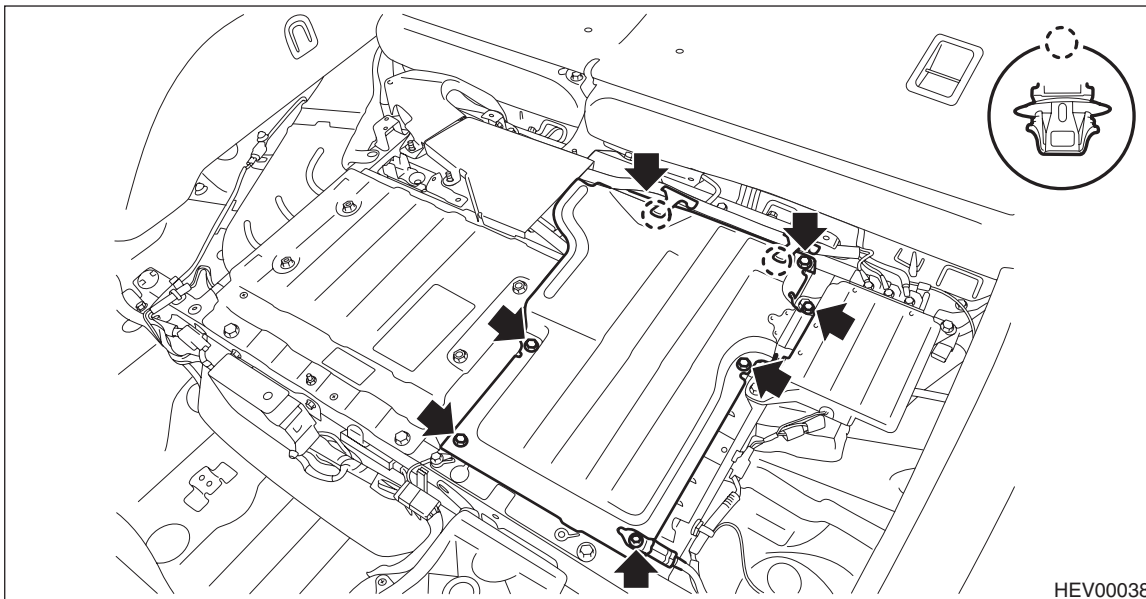
5) Remove the TORX® bolts, release the clips, and then remove the battery cover.

Preparation tool:

TORX® T30



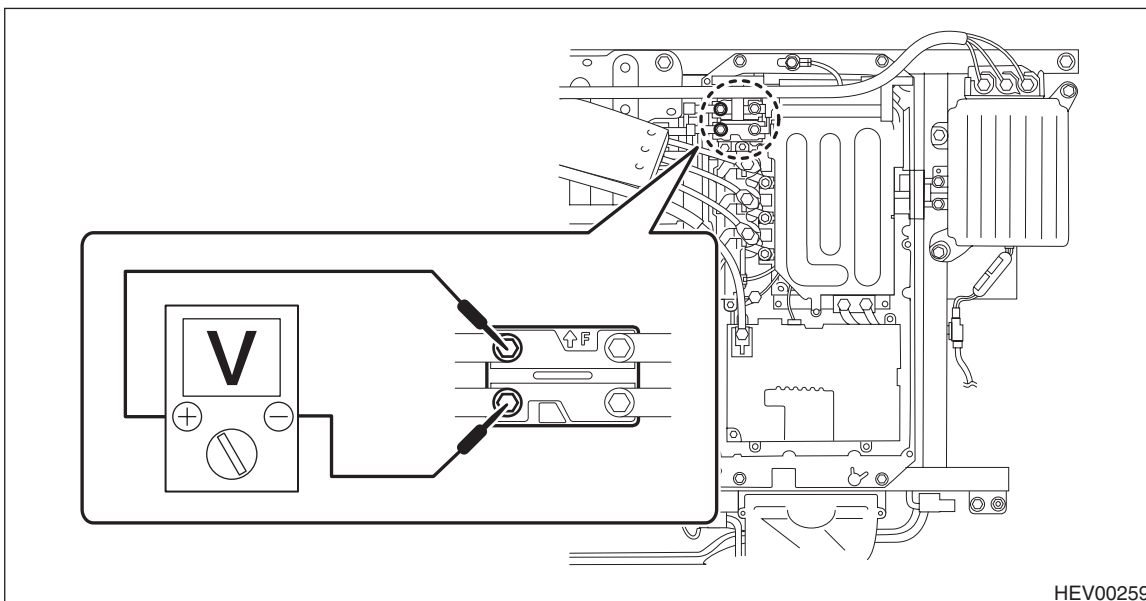
- 6) Remove the inverter cover.
 - (1) Remove the bolts and ground terminal.
 - (2) Release the cable clips, and remove the inverter cover.



- 7) Perform zero-voltage test.
 - (1) Measure the voltage of the high voltage DC line at the high voltage battery side of the electric noise filter.

Preparation tool:
Insulation multimeter

Standard: 0 V



Inverter

HYBRID ELECTRIC VEHICLE

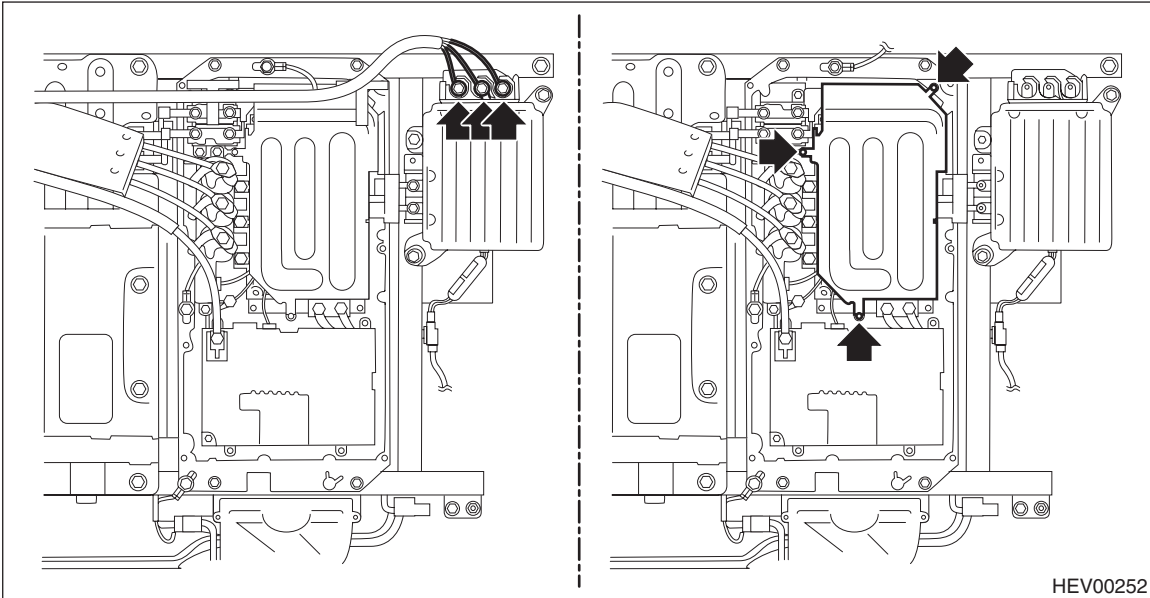
8) Remove the electric oil pump inverter.

(1) Remove the bolt and disconnect the power cable (100 V).

CAUTION:

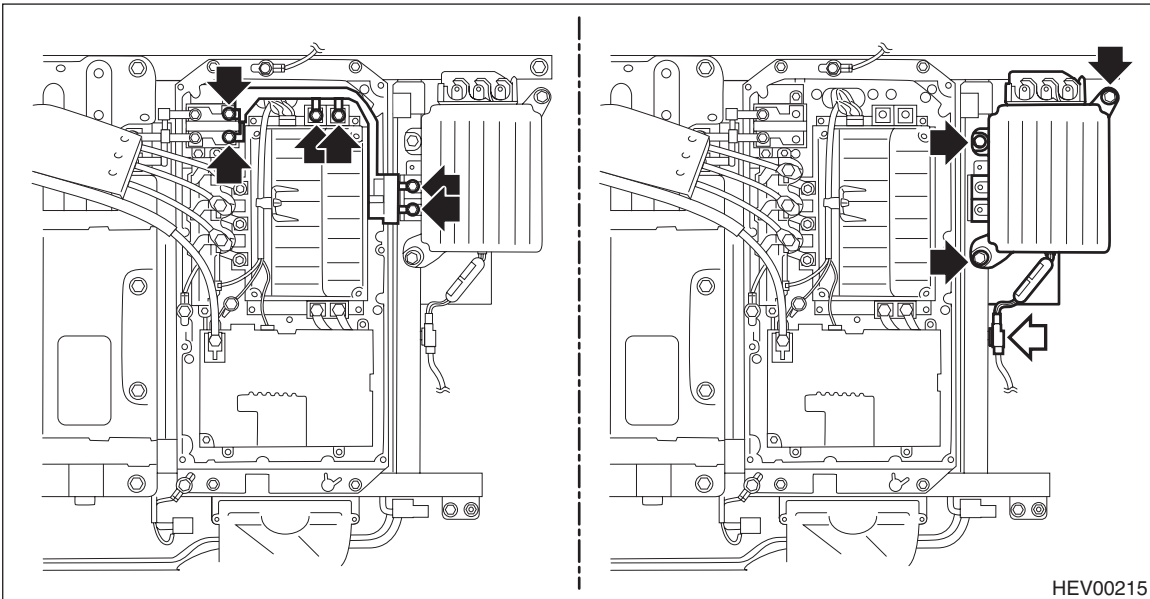
- Be careful not to use excessive force when disconnecting the power cable to avoid any damage.
- Always wrap the disconnected power cable terminals with insulating tape.

(2) Remove the bolts to remove the inverter shield.



(3) Remove the bolts, then disconnect the bus bar between the electric noise filter and the electric oil pump inverter.

(4) Remove the connectors and bolts, and remove the electric oil pump inverter.



(5) Remove the inverter spacer from the electric oil pump inverter as necessary.

B: INSTALLATION

1. DRIVE MOTOR INVERTER

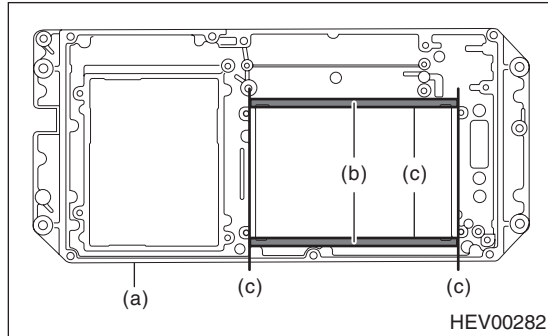
WARNING:

The hybrid system includes a high voltage circuit. Mishandling could cause accidents such as electric shock or leak. Always check “CAUTION (HYBRID SYSTEM)” and perform the proper operation.
<Ref. to PC-7, CAUTION (HYBRID SYSTEM), Precaution.>

1) Install the drive motor inverter.

CAUTION:

Replace the EPT sealer attached to the inverter frame assembly with a new part.



- (a) Inverter frame ASSY
- (b) EPT sealer
- (c) Reference line for attachment

Tightening torque:

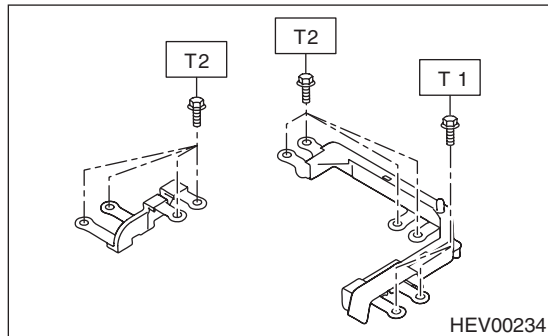
6.5 N·m (0.7 kgf-m, 4.8 ft-lb)

2) Connect the bus bar.

Tightening torque:

T1: 6.5 N·m (0.7 kgf-m, 4.8 ft-lb)

T2: 7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



3) Install the inverter shield.

Tightening torque:

6.5 N·m (0.7 kgf-m, 4.8 ft-lb)

4) Install the drive motor inverter amperage sensor. <Ref. to HEV-30, INSTALLATION, Drive Motor Inverter Current Sensor.>

5) Install the DC/DC converter. <Ref. to HEV-41, INSTALLATION, DC/DC Converter.>

Inverter

HYBRID ELECTRIC VEHICLE

6) Install the ground terminal and inverter cover.

CAUTION:

Check that the sound proofing material on the inverter cover is not detached or damaged before installing the inverter cover.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

7) Install the battery cover.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

8) Install the spacer - rear floor front.

9) Install the rear seat cushion. <Ref. to SE-27, INSTALLATION, Rear Seat.>

10) Install the sub-trunk assembly and the spacer - rear floor side.

11) Install the service disconnect plug. <Ref. to HEV-16, INSTALLATION, Service Plug.>

2. ELECTRIC OIL PUMP INVERTER

WARNING:

The hybrid system includes a high voltage circuit. Mishandling could cause accidents such as electric shock or leak. Always check “CAUTION (HYBRID SYSTEM)” and perform the proper operation. <Ref. to PC-7, CAUTION (HYBRID SYSTEM), Precaution.>

1) Install the electric oil pump inverter.

NOTE:

If the inverter spacer has been removed, install it to the electric oil pump inverter.

Tightening torque:

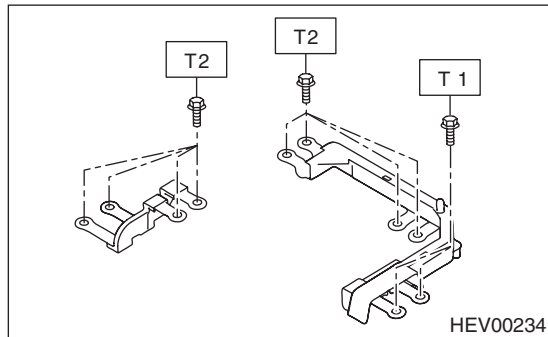
22 N·m (2.2 kgf-m, 16.2 ft-lb)

2) Connect the bus bar.

Tightening torque:

T1: 6.5 N·m (0.7 kgf-m, 4.8 ft-lb)

T2: 7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



3) Install the inverter shield.

Tightening torque:

6.5 N·m (0.7 kgf-m, 4.8 ft-lb)

4) Connect the power cable (100 V).

CAUTION:

- Connect the power cable properly referring to the letters (U, V, and W) imprinted on the electric oil pump inverter body. The power cable with the identification tape is connected to (U) and the power cable with a claw is connected to (V).
- Do not apply excessive force to the terminals and watch to make sure the cable is not damaged or pinched.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

5) Install the ground terminal and inverter cover.

CAUTION:

Check that the sound proofing material on the inverter cover is not detached or damaged.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

6) Install the battery cover.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

7) Install the spacer - rear floor front.

8) Install the rear seat cushion. <Ref. to SE-27, INSTALLATION, Rear Seat.>

9) Install the sub-trunk assembly and the spacer - rear floor side.

10) Install the service disconnect plug. <Ref. to HEV-16, INSTALLATION, Service Plug.>