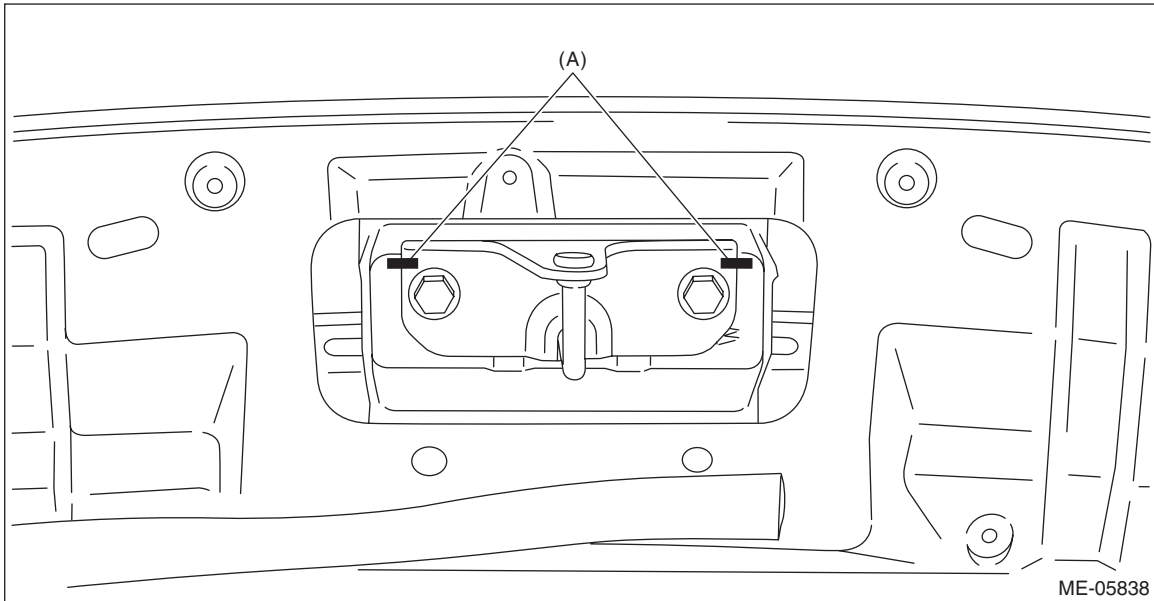


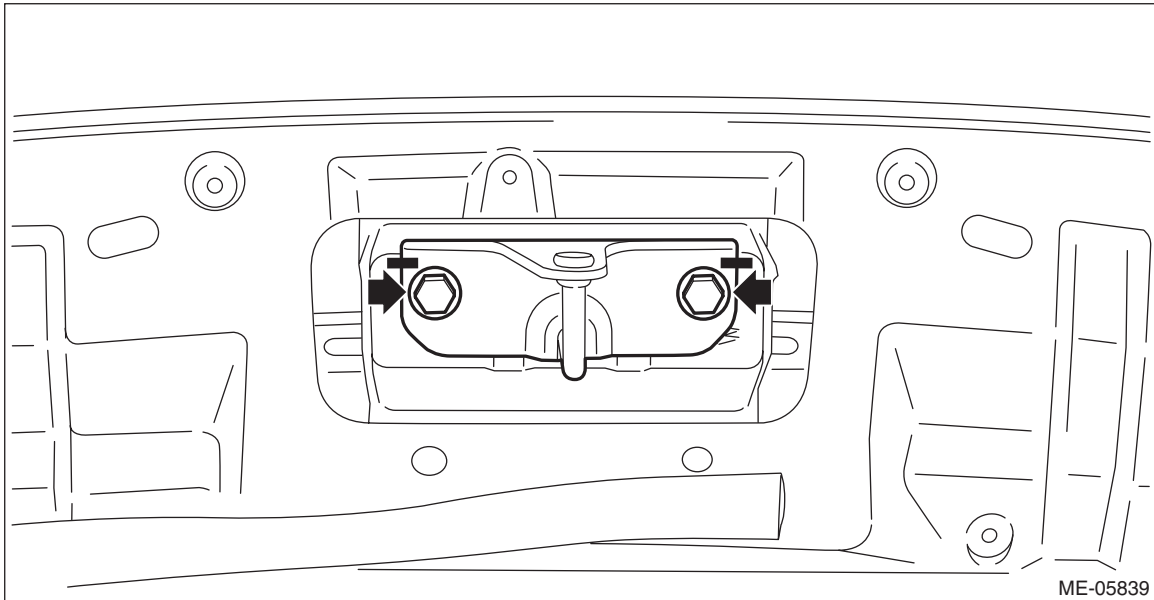
9. Engine Assembly

A: REMOVAL

1) Open the front hood, and make alignment marks (A) on both the front hood and the front hood striker by using a marker pen.



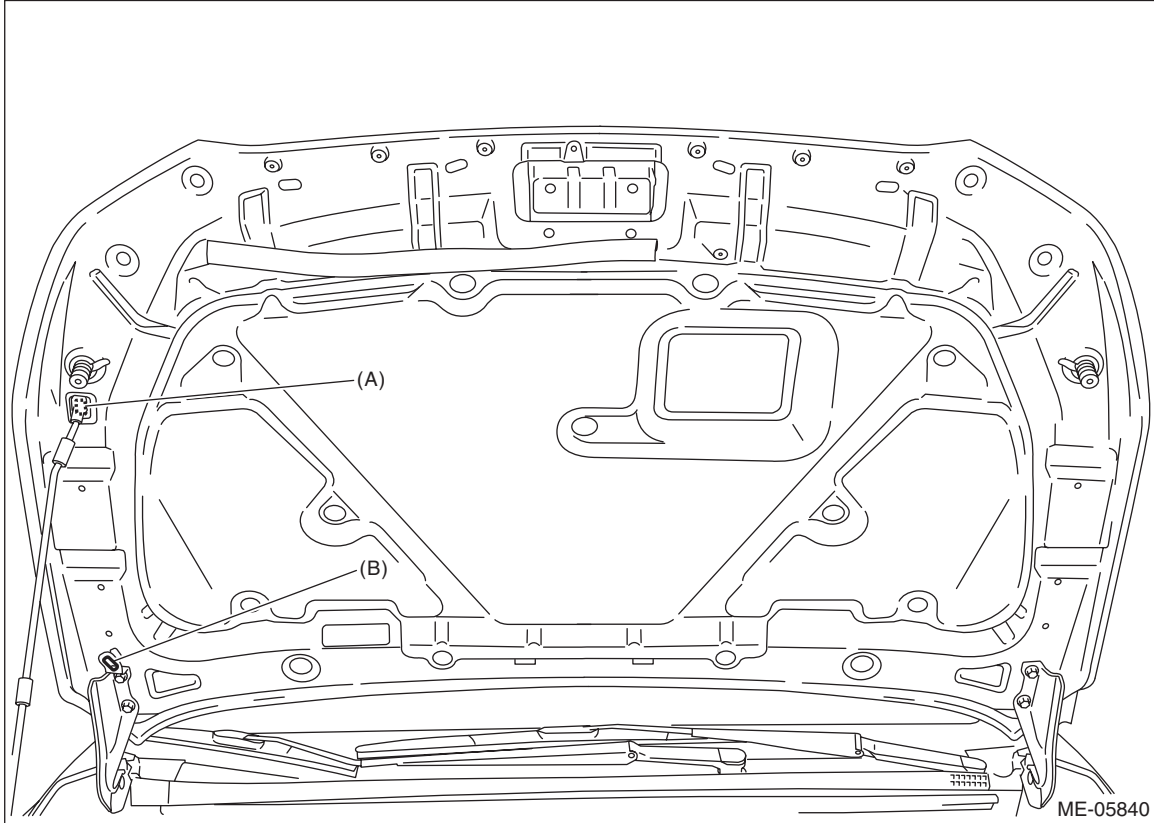
2) Remove the front hood striker from the front hood.



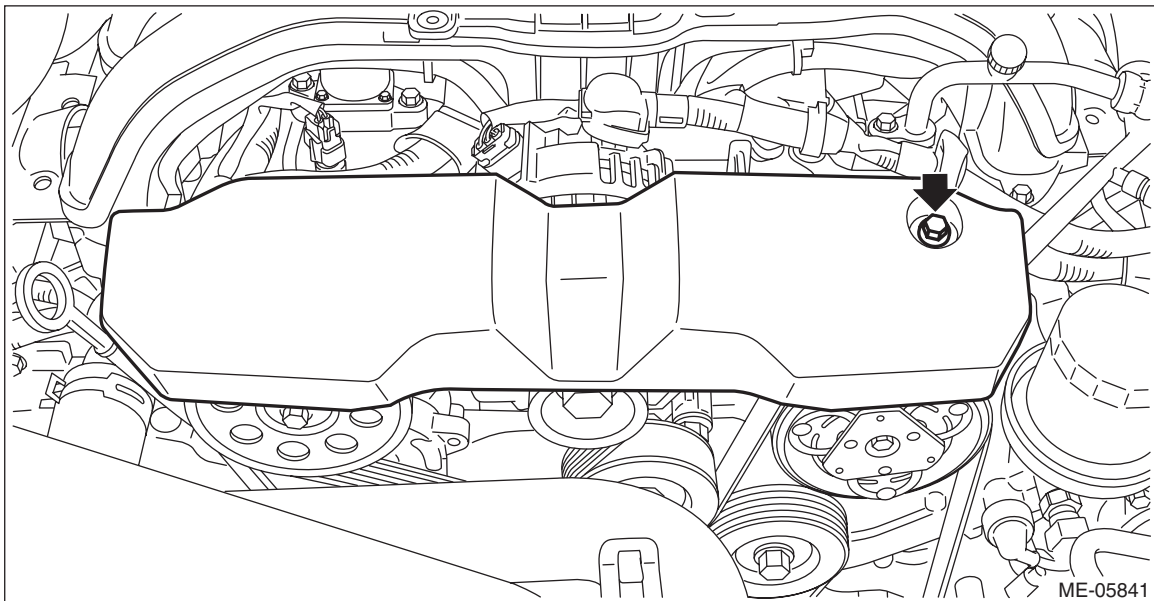
Engine Assembly

MECHANICAL

- 3) Change the front hood stay position from (A) to (B), and completely open the front hood.

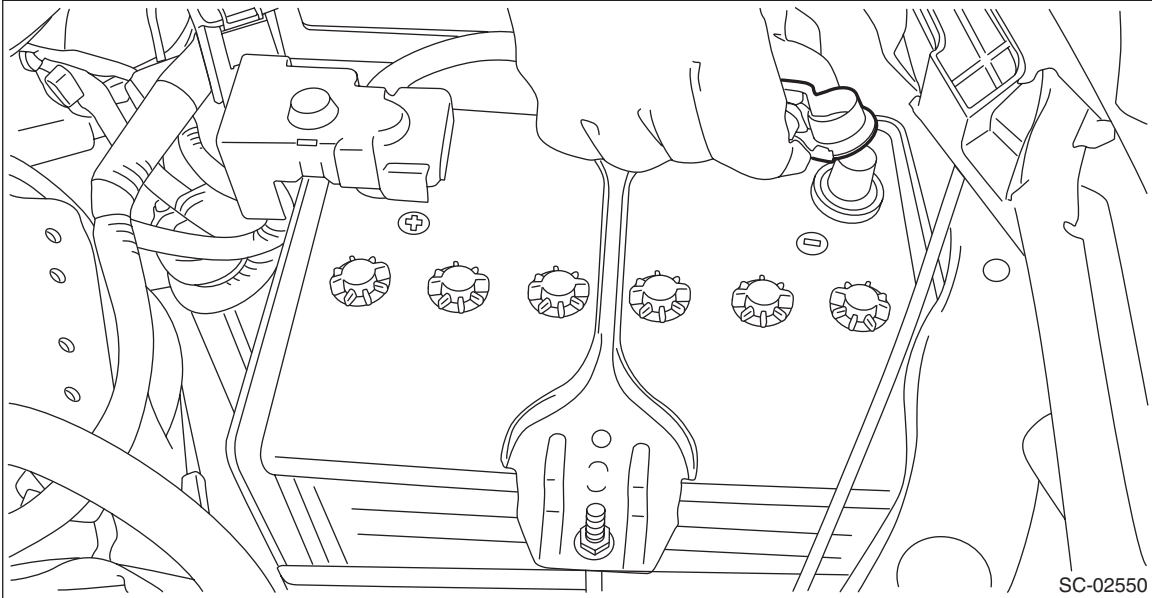


- 4) Remove the V-belt covers.



- 5) Collect the refrigerant from A/C system. <Ref. to AC-26, Refrigerant Recovery Procedure.>
6) Release the fuel pressure. <Ref. to FU(H4DO)-112, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>

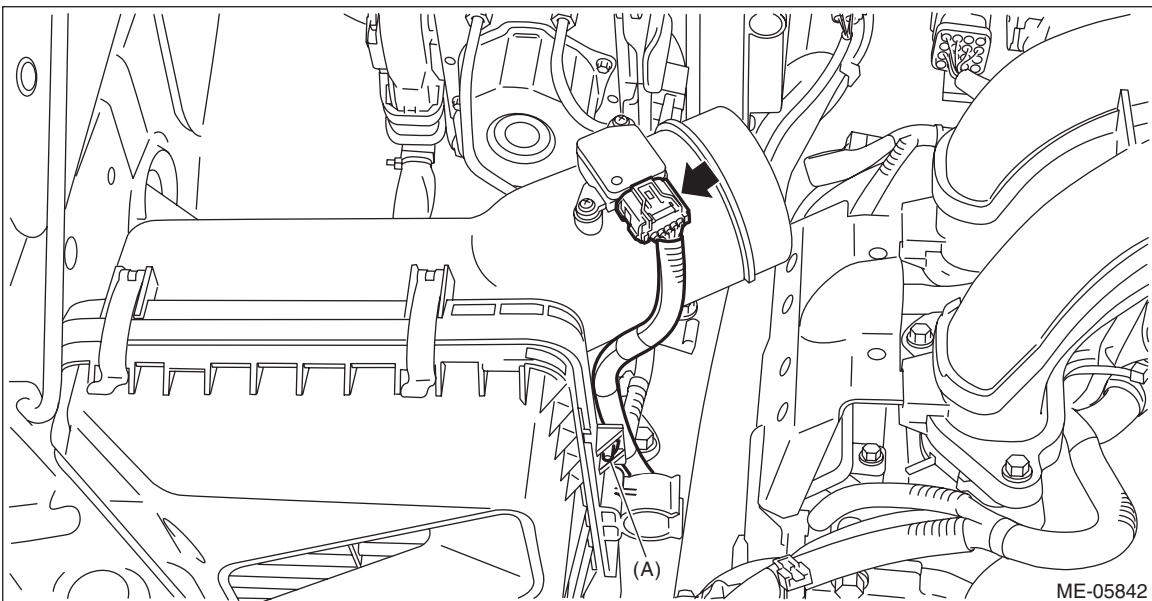
7) Disconnect the ground cable from battery.



8) Remove the air intake duct. <Ref. to IN(H4DO)-13, REMOVAL, Air Intake Duct.>

9) Remove the air intake boot. <Ref. to IN(H4DO)-12, REMOVAL, Air Intake Boot.>

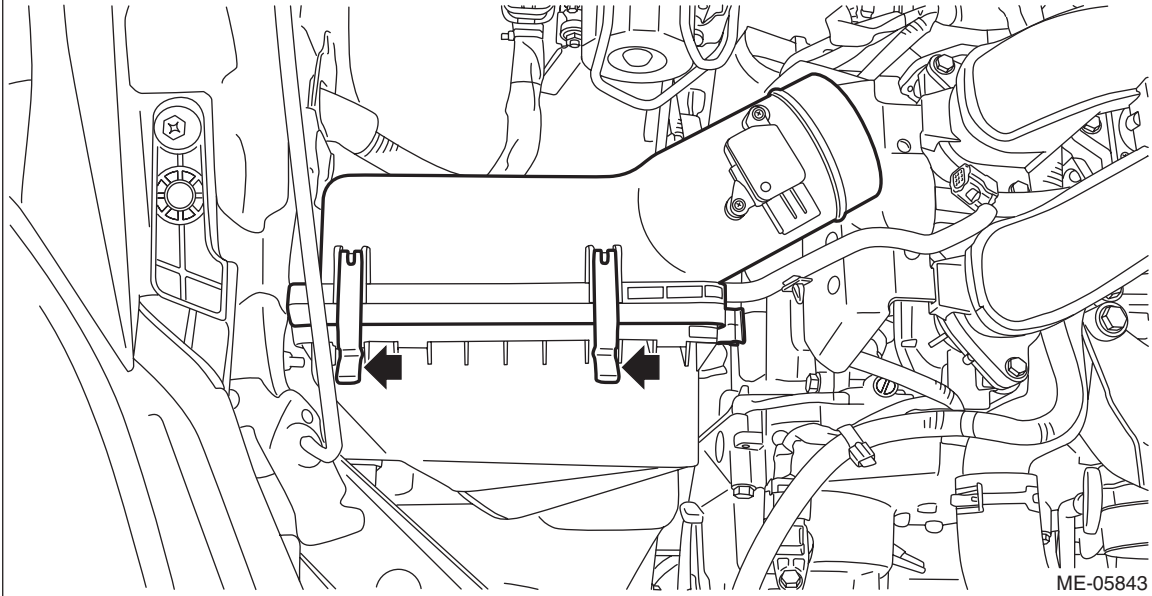
10) Disconnect the connector from the mass air flow and intake air temperature sensor, and remove the clip (A) which holds the mass air flow and intake air temperature sensor harness.



Engine Assembly

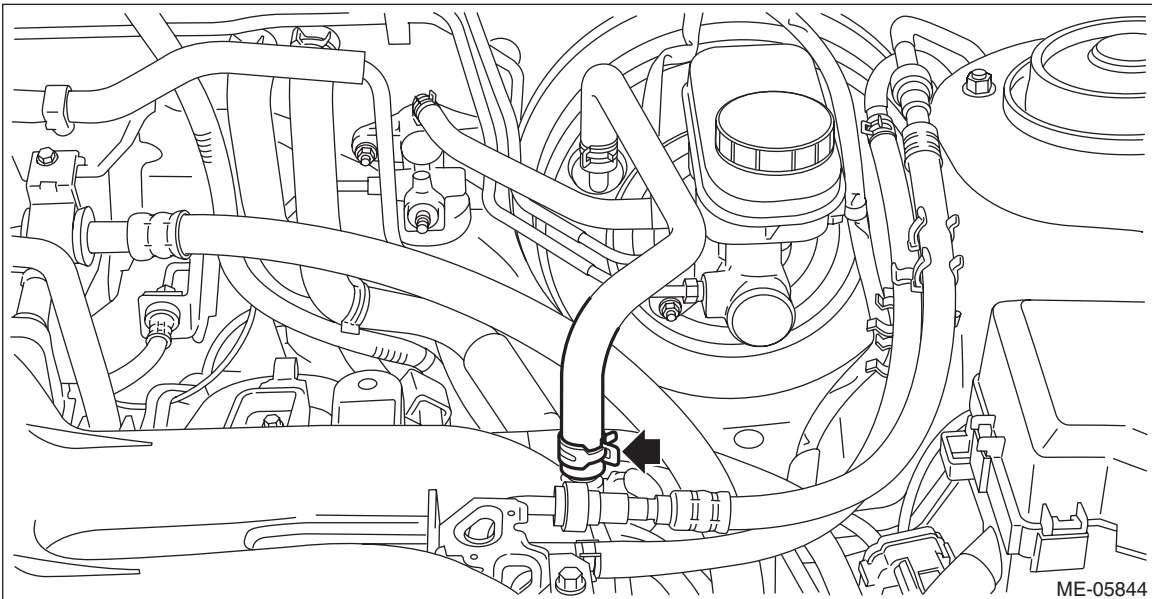
MECHANICAL

11) Remove the air cleaner case (rear).



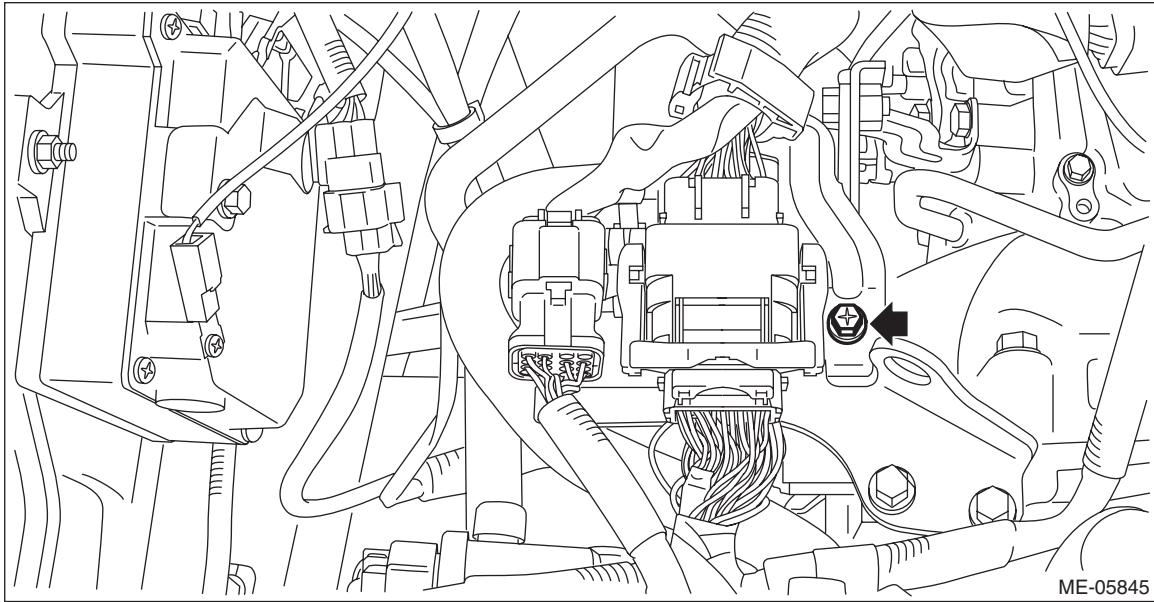
12) Remove the radiator. <Ref. to CO(H4DO)-32, REMOVAL, Radiator.>

13) Disconnect the brake booster vacuum hose from the intake manifold.

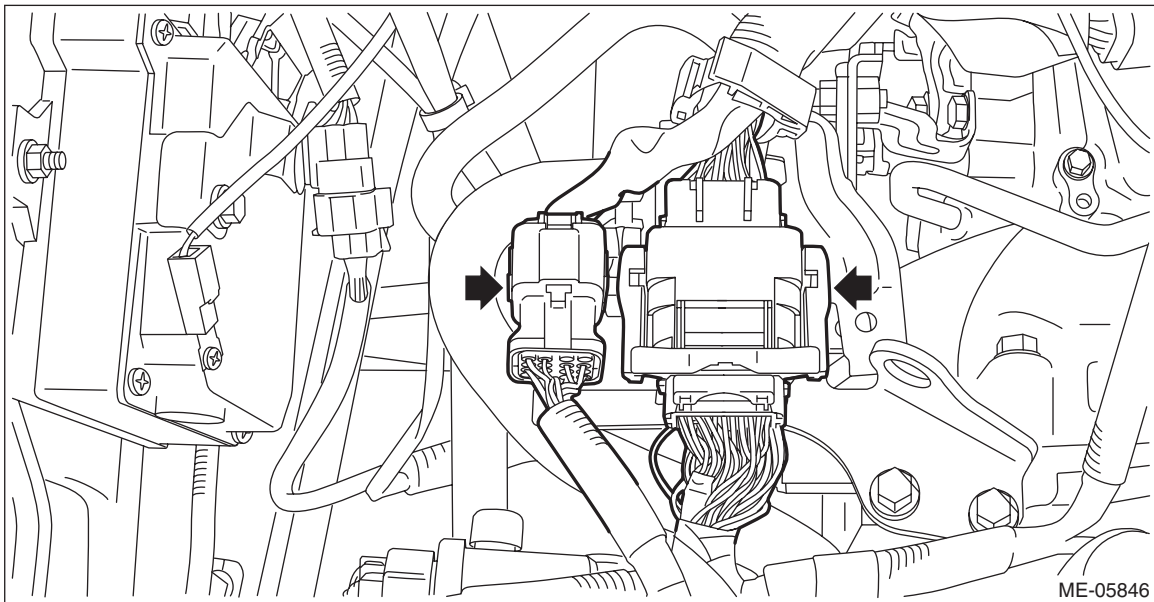


14) Disconnect the engine harness connector.

(1) Remove the bolt securing the bulkhead harness connector bracket.



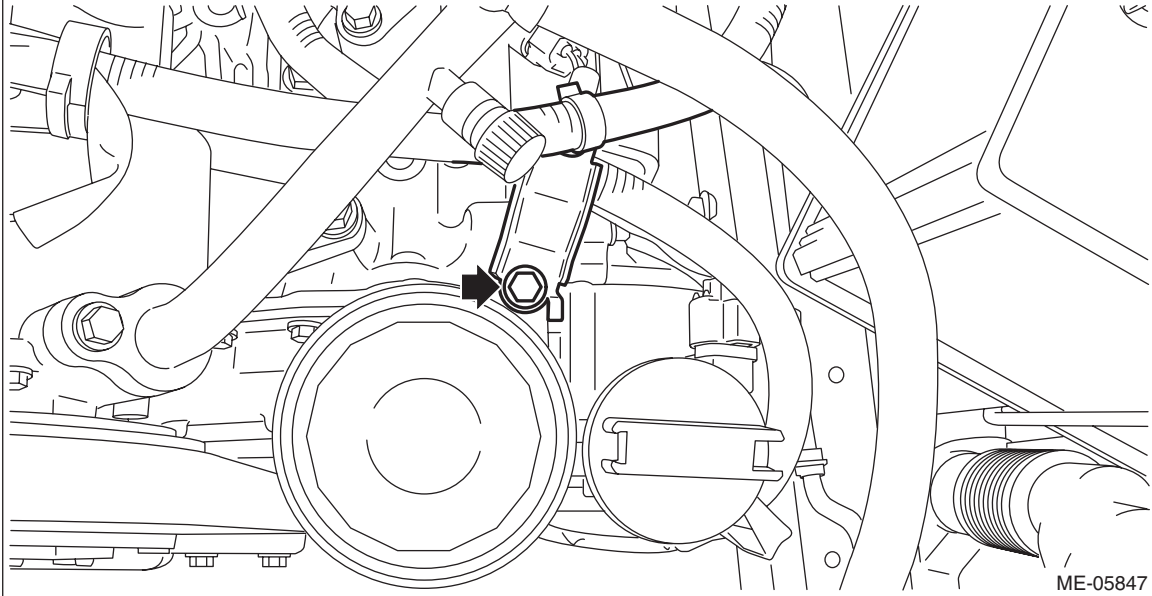
(2) Disconnect the bulkhead harness connector from the engine harness connector (black) and engine harness connector (brown).



Engine Assembly

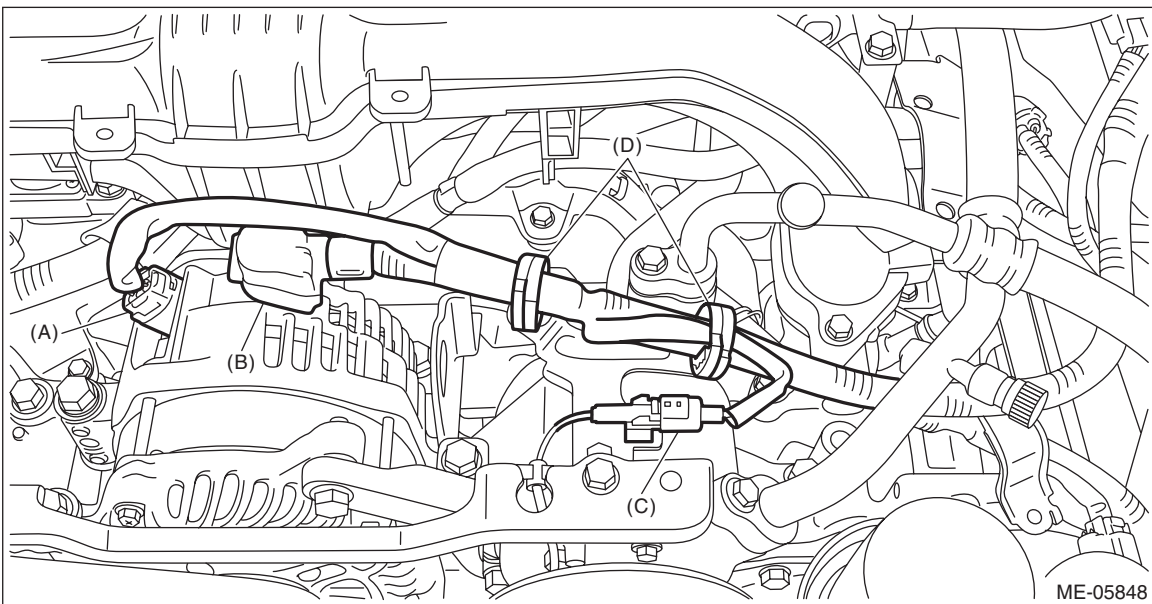
MECHANICAL

15) Remove the bolts which secure the generator cord stay to the chain cover.



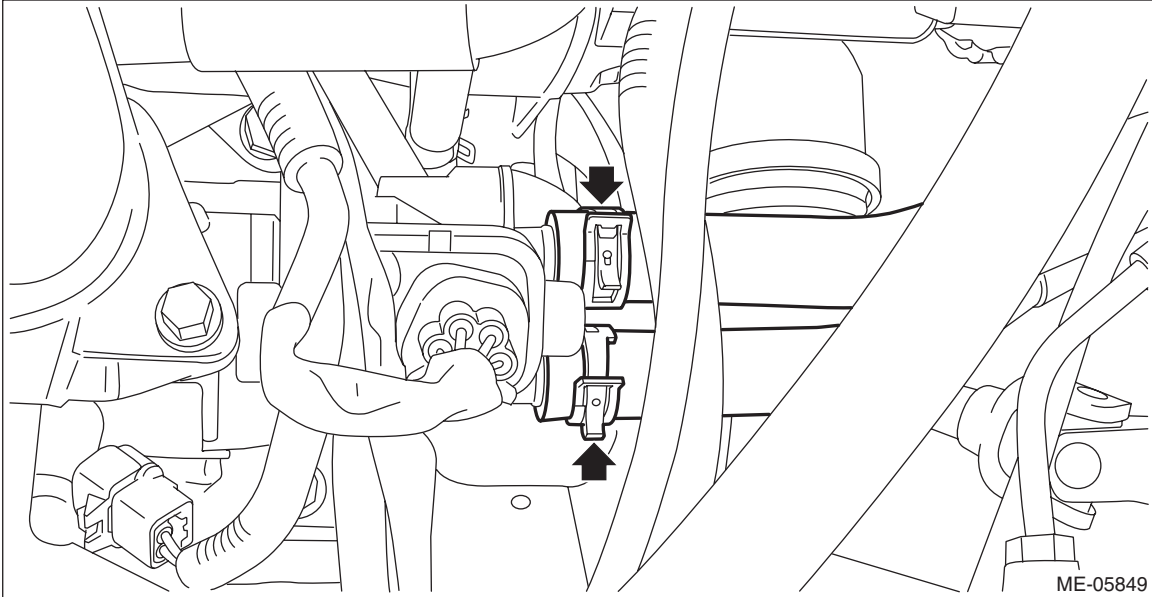
16) Disconnect connector (A) and terminal (B) from the generator, and disconnect connector (C) from A/C compressor.

17) Remove the generator cord from the clip (D) and move the generator cord to the left side wheel apron.

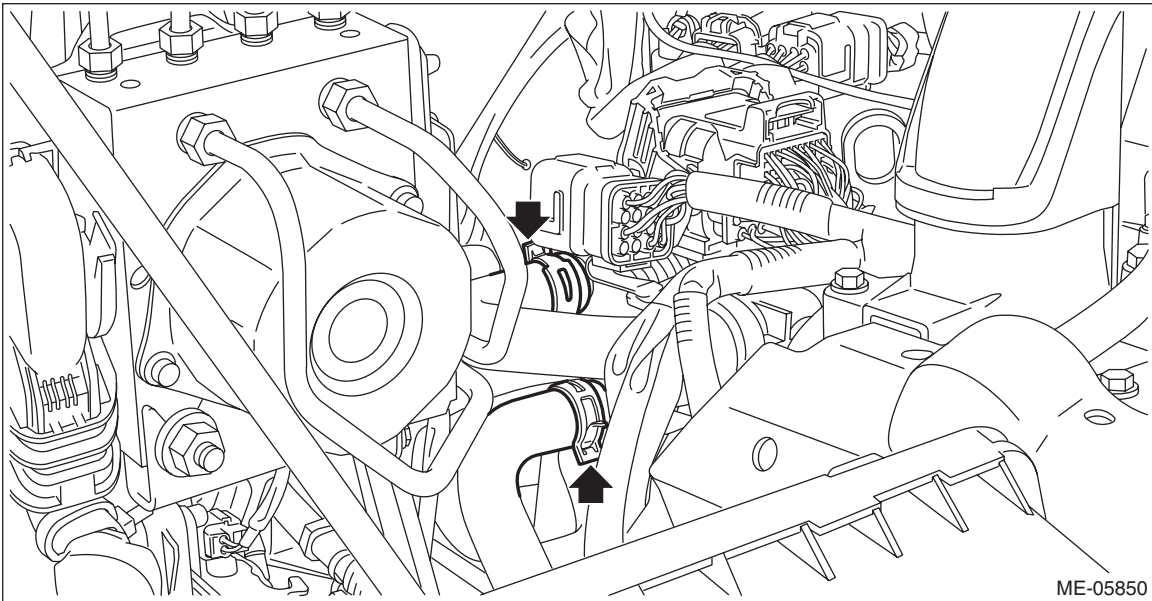


18) Disconnect the following hoses.

- (1) A/C pressure hose <Ref. to AC-71, REMOVAL, Hose and Pipe.>
- (2) Heater inlet hose and heater outlet hose



19) Disconnect the water hose from CVTF cooler (with warmer feature). (CVT model)



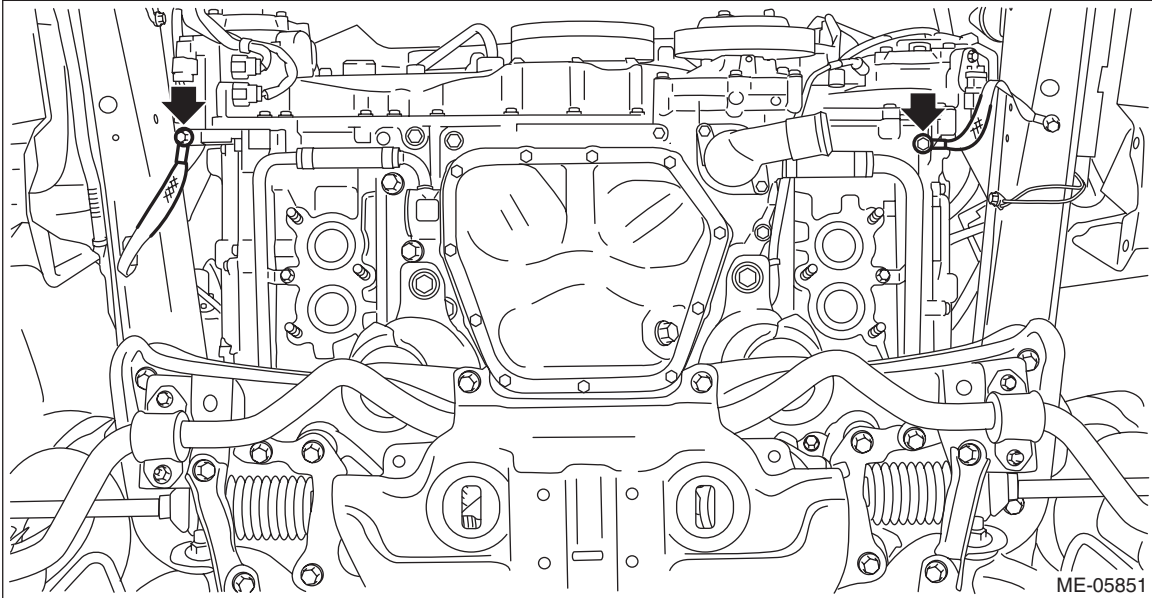
20) Lift up the vehicle.

21) Remove the front exhaust pipe. <Ref. to EX(H4DO)-7, REMOVAL, Front Exhaust Pipe.>

Engine Assembly

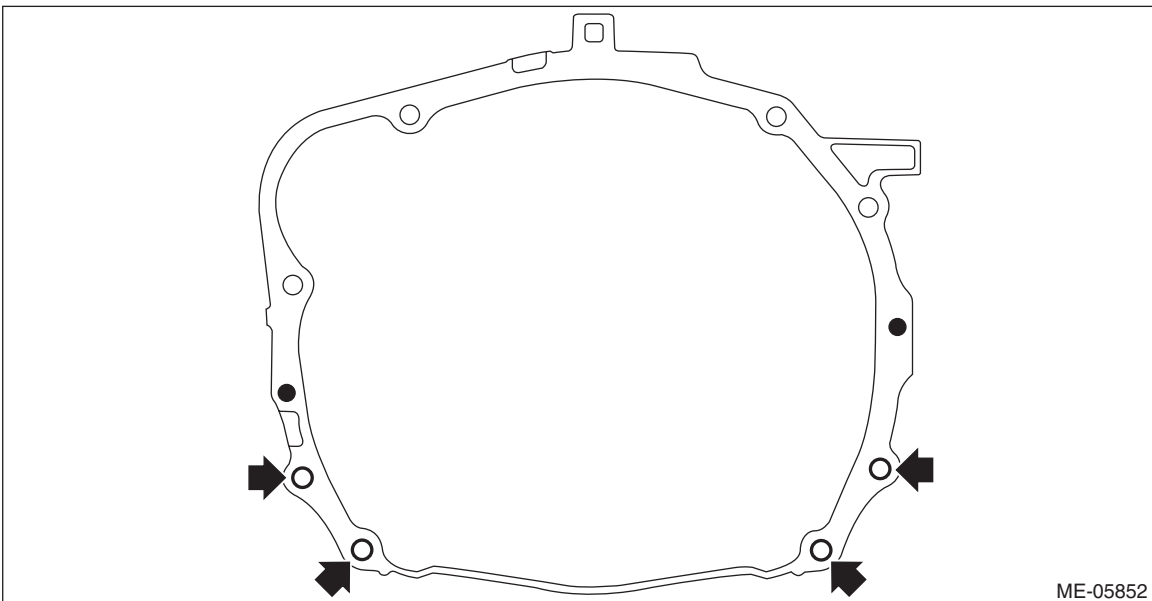
MECHANICAL

22) Disconnect the ground cable on the engine side.

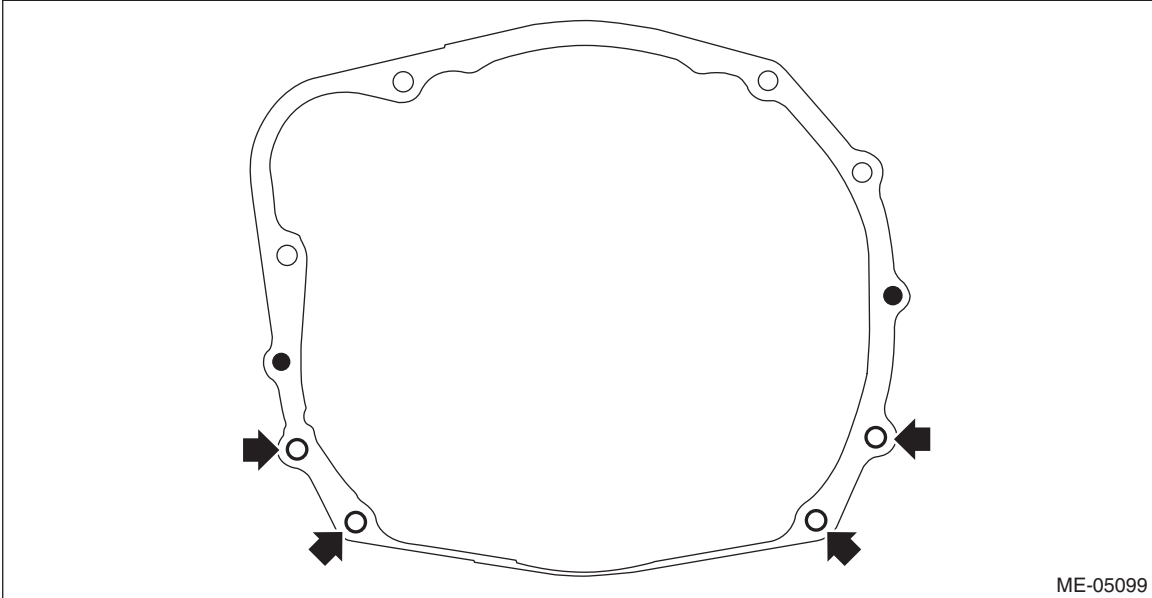


23) Remove the bolts and nuts which hold the lower side of transmission to the engine.

- CVT model

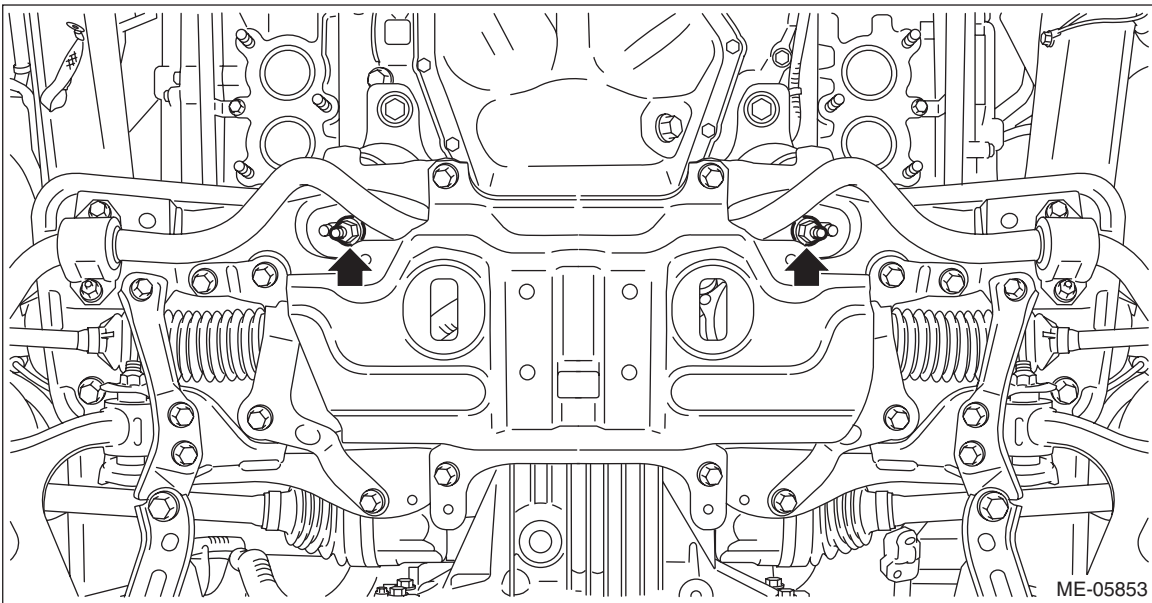


- MT model



ME-05099

- 24) Remove the nuts which secure the engine mounting to the front crossmember. (CVT model)

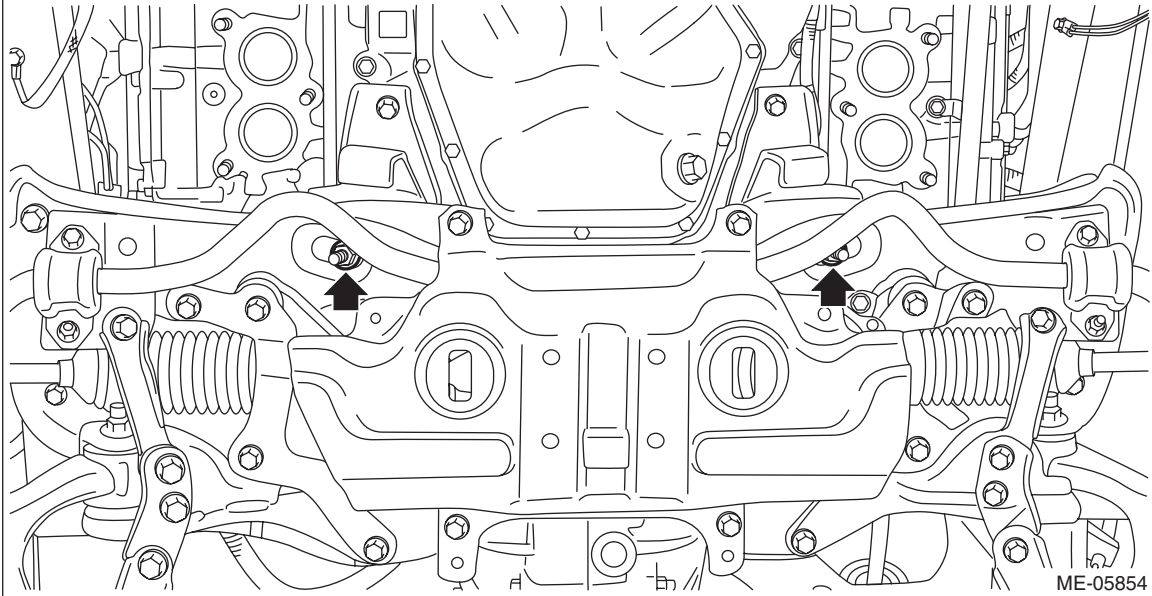


ME-05853

Engine Assembly

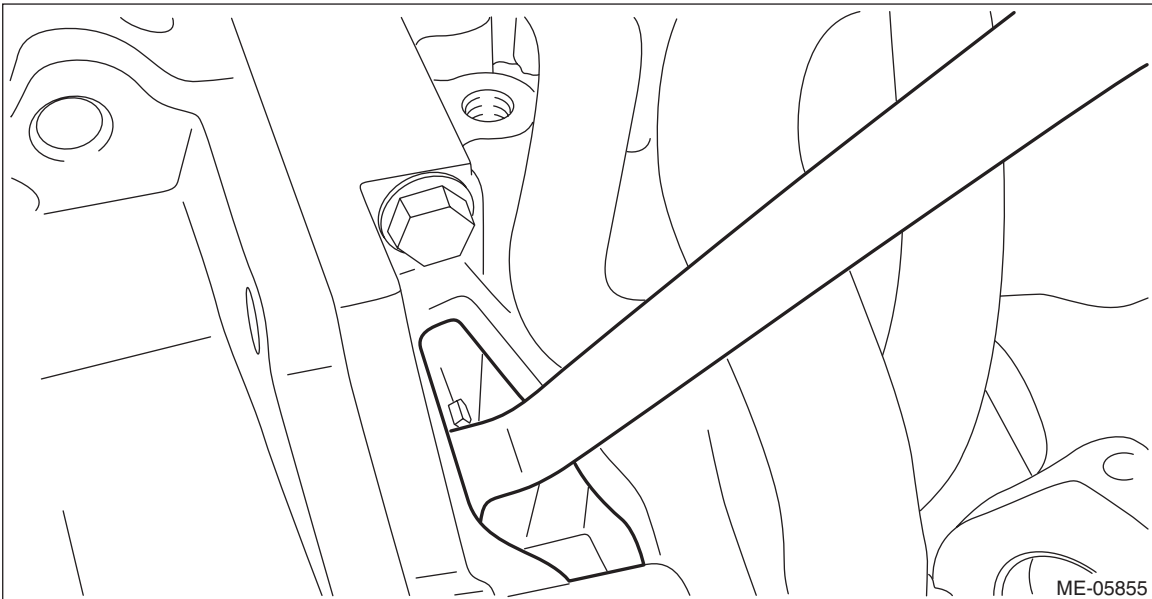
MECHANICAL

25) Remove the nuts which secure the engine mounting to the front crossmember. (MT model)

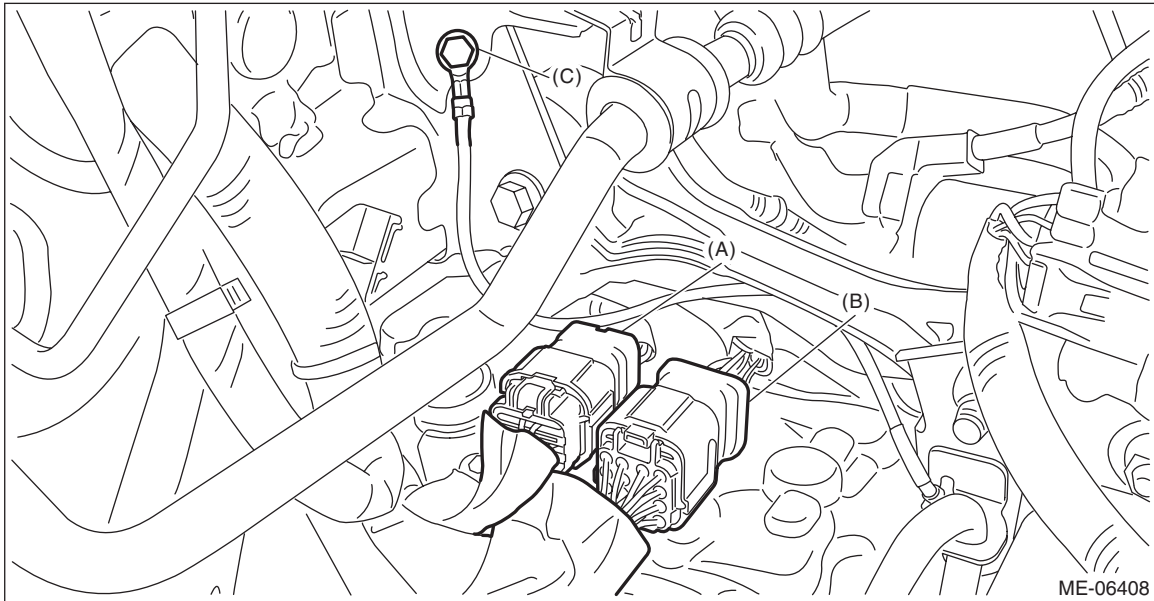


26) Separate the torque converter clutch from the drive plate. (CVT model)

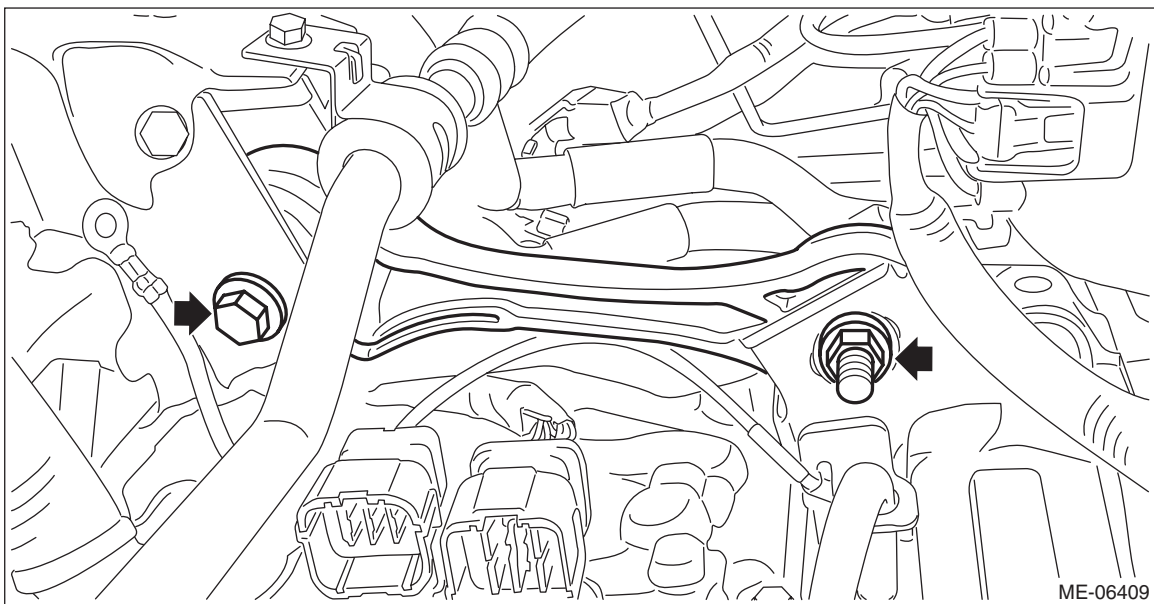
- (1) Lower the vehicle.
- (2) Remove the service hole plug.
- (3) Insert the wrench into the crank pulley bolt and rotate the crank pulley to remove the bolts which hold torque converter clutch to drive plate.



27) Disconnect the bulkhead harness connector from the transmission harness connector (A) and the inhibitor harness connector (B), and disconnect the transmission radio ground terminal (C) from the vehicle body. (CVT model)



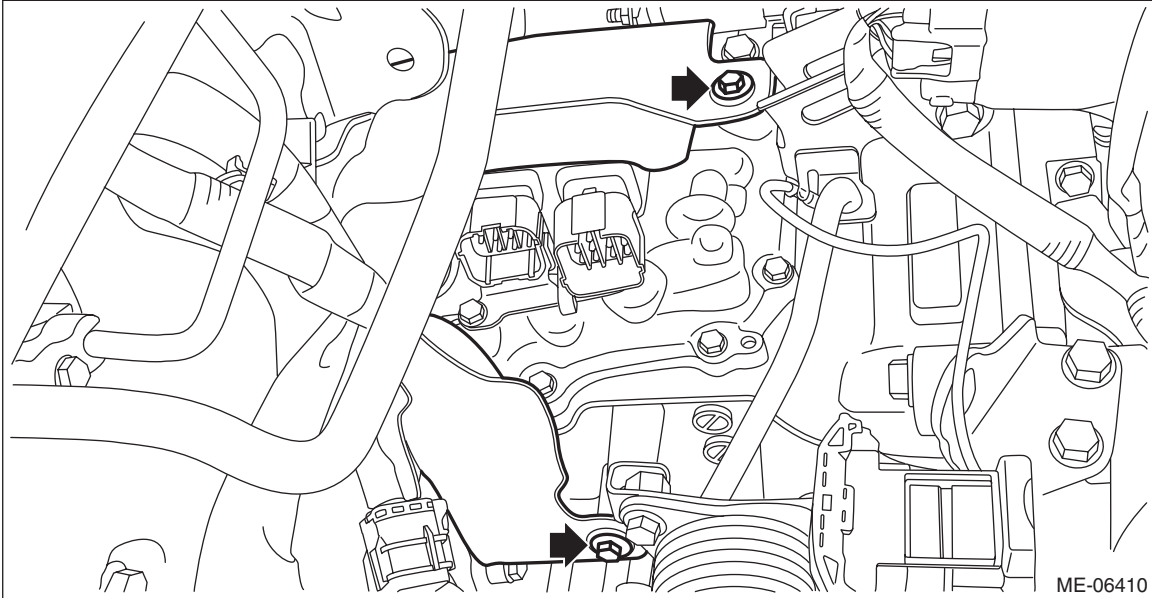
28) Remove the pitching stopper.



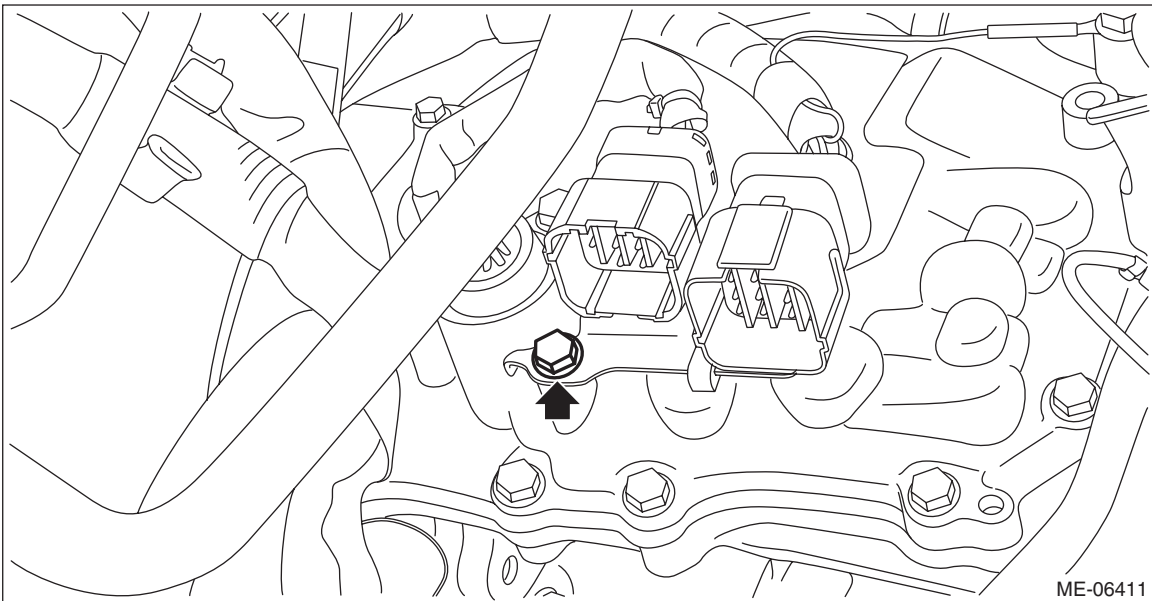
Engine Assembly

MECHANICAL

29) Remove the transmission case cover. (CVT model)



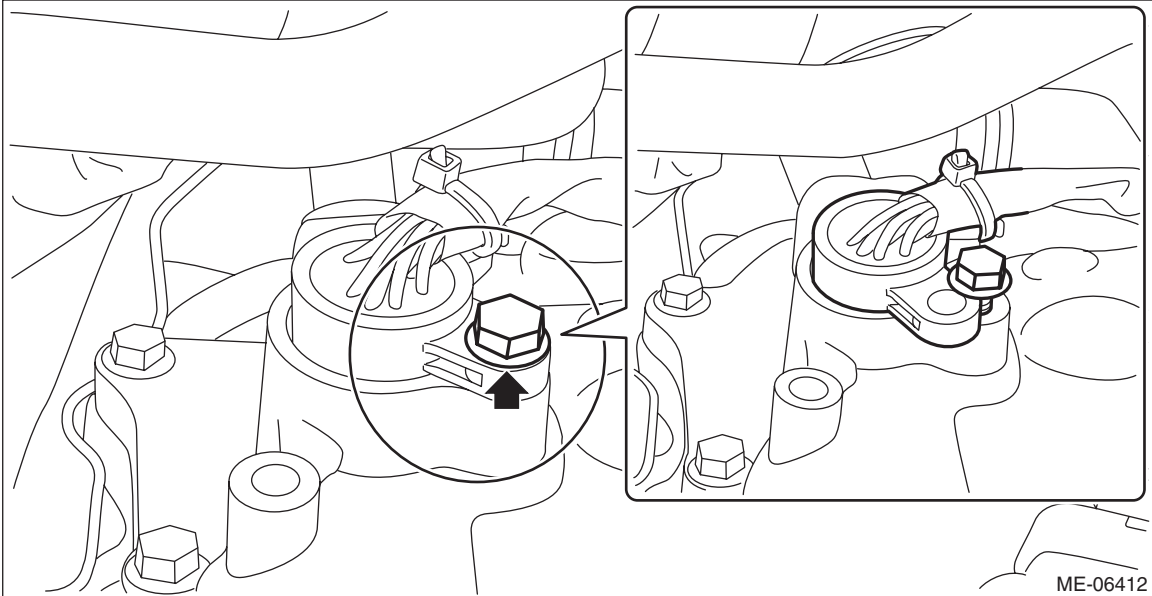
30) Remove the bolt which holds the transmission harness stay. (CVT model)



31) Remove the bolt which holds the transmission harness to the control valve body, and turn the transmission harness clockwise till the bolt hole can be seen as shown in the figure, and tighten the bolt to temporary lock the harness. (CVT model)

NOTE:

This procedure is required to prevent the transmission harness from touching the vehicle body during engine removal/installation.



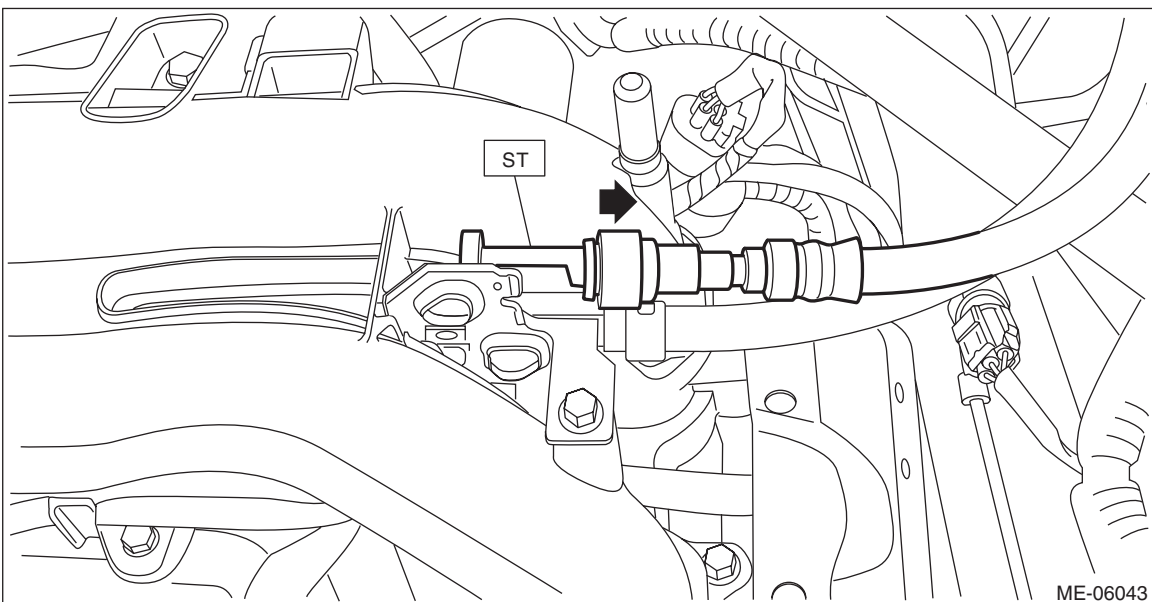
32) Disconnect the fuel delivery hose and evaporation hose.

CAUTION:

- **Be careful not to spill fuel.**
- **Catch the fuel from hoses using a container or cloth.**

(1) Attach ST to the fuel delivery pipe and push ST in the direction of arrow mark to disconnect the quick connector of the fuel delivery hose.

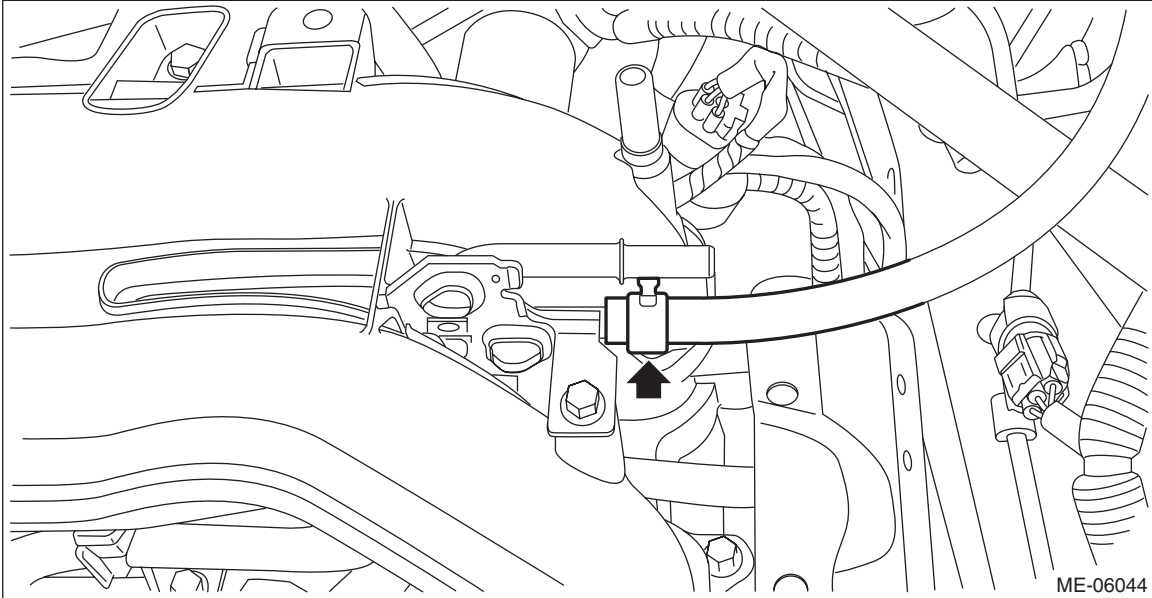
ST 42099AE000 QUICK CONNECTOR RELEASE



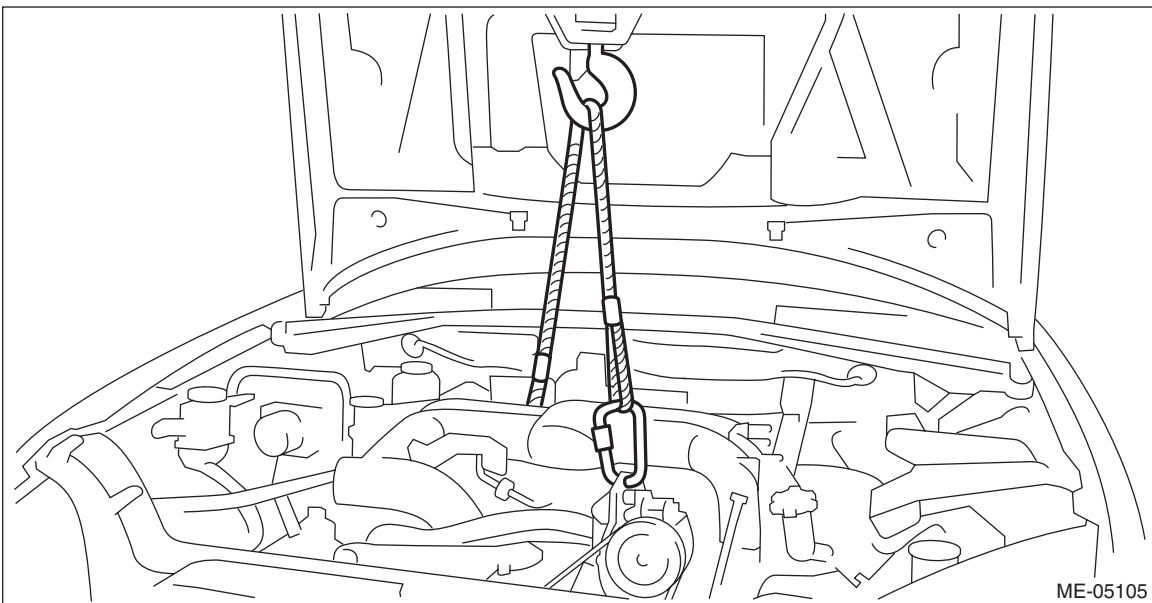
Engine Assembly

MECHANICAL

- (2) Remove the clip and disconnect the evaporation hose from the evaporation pipe.



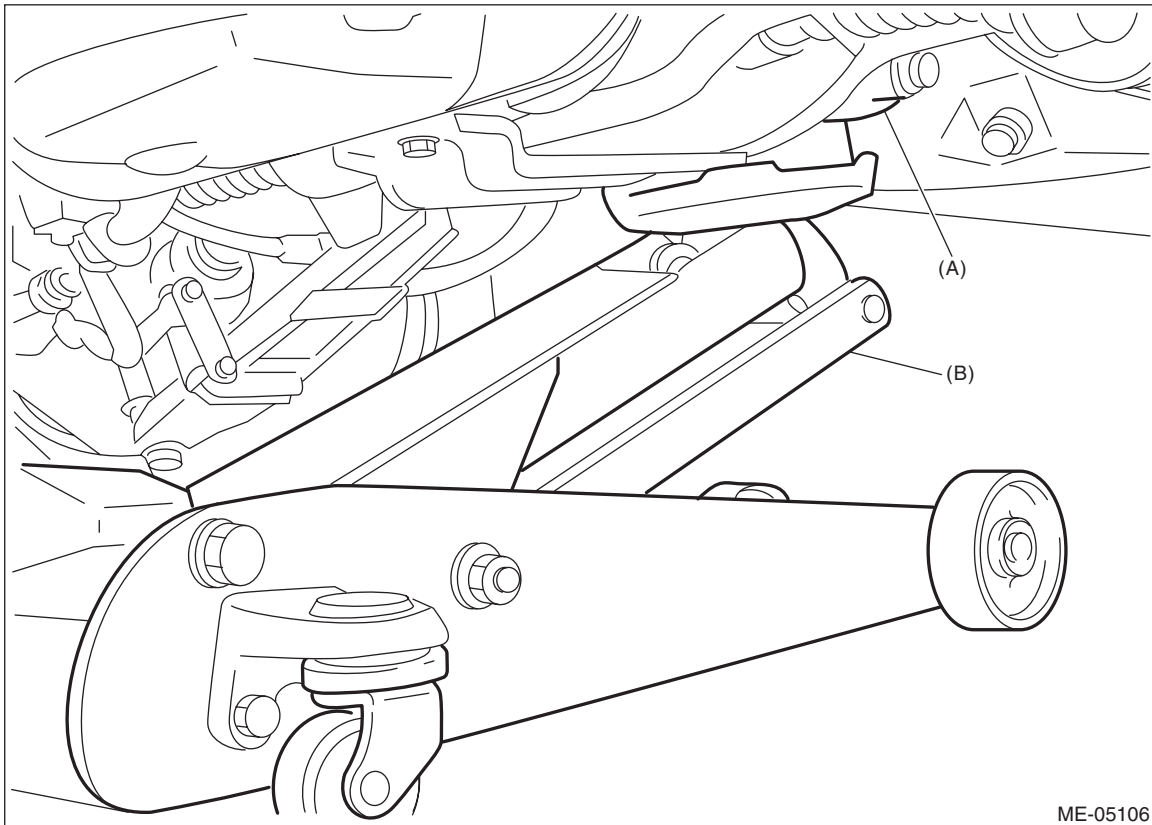
- 33) Support the engine with a lifting device and wire ropes.



- 34) Support the transmission with a garage jack.

CAUTION:

Be sure to perform this procedure to prevent the transmission from lowering by its own weight.



ME-05106

(A) Transmission

(B) Garage jack

35) Separate the engine and transmission.

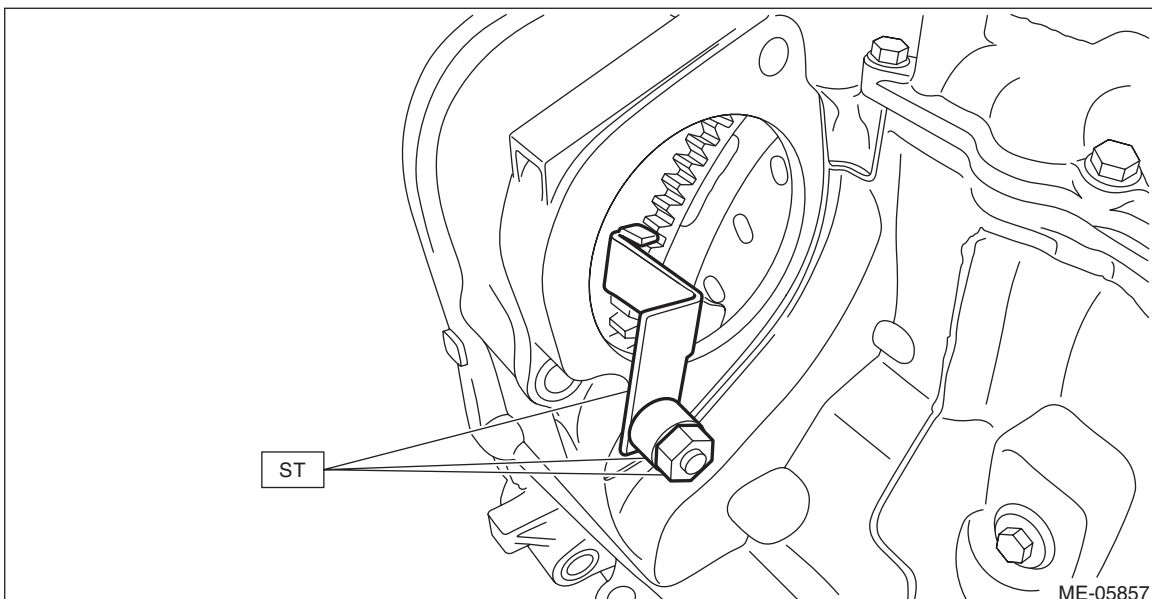
CAUTION:

Before removing the engine away from transmission, check to be sure no work has been overlooked.

(1) Remove the starter. <Ref. to SC(H4DO)-9, REMOVAL, Starter.>

(2) Attach the ST to the torque converter clutch case. (CVT model)

ST 498277200 STOPPER SET



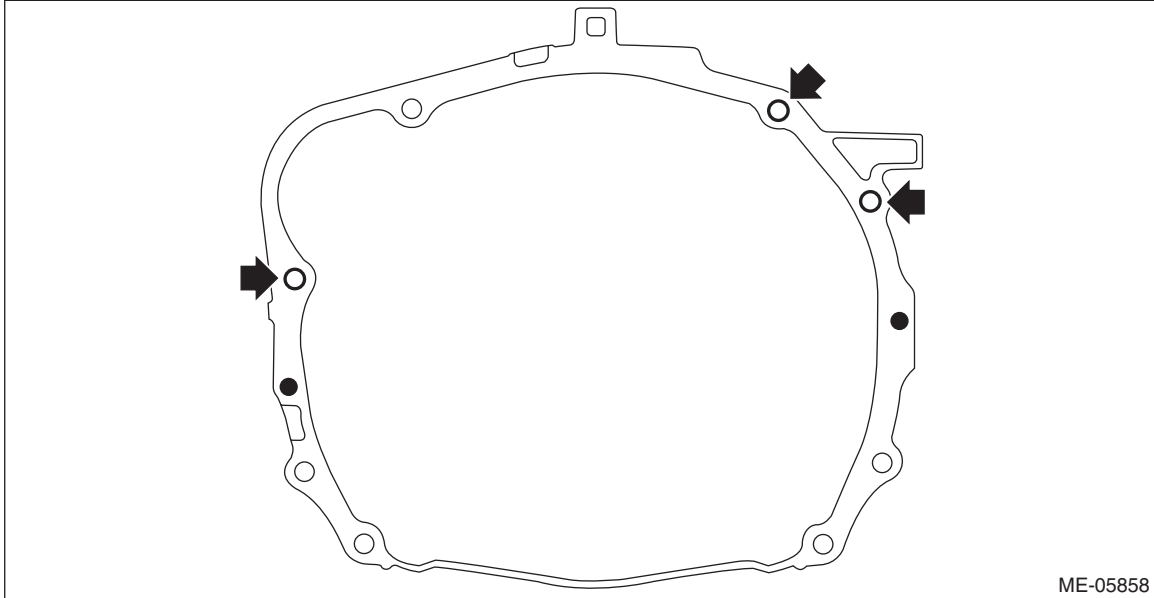
ME-05857

(3) Remove the bolts which hold the upper side of the transmission to the engine.

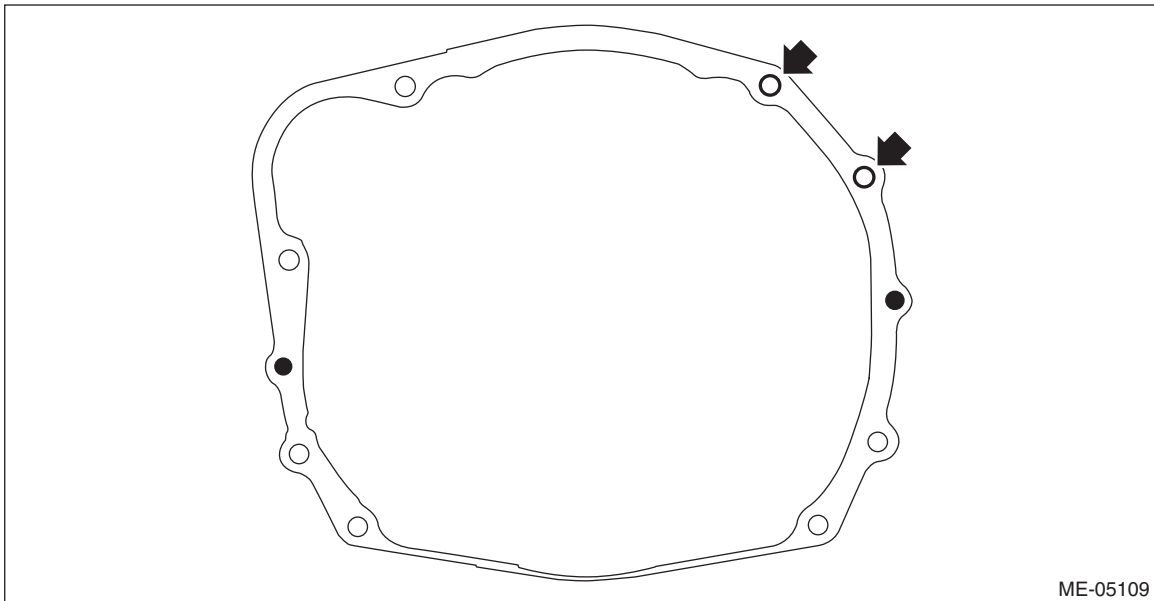
Engine Assembly

MECHANICAL

- CVT model



- MT model



36) Remove the engine from the vehicle.

NOTE:

Be careful not to damage adjacent parts or body panels with crank pulley, oil level gauge, etc.

- (1) Slightly raise the engine.
- (2) Raise the transmission with garage jack.
- (3) Move the engine horizontally until main shaft is withdrawn from clutch cover. (MT model)
- (4) Slowly move the engine away from engine compartment.

37) Remove the engine mounting from the engine.

B: INSTALLATION

1) Install the engine mounting onto the engine.

Tightening torque:

35 N·m (3.6 kgf·m, 25.8 ft·lb)

2) Apply a small amount of grease to splines of main shaft. (MT model)

Grease:

NICHIMOLY N-130 or equivalent

3) Position the engine in engine compartment and align it with transmission.

NOTE:

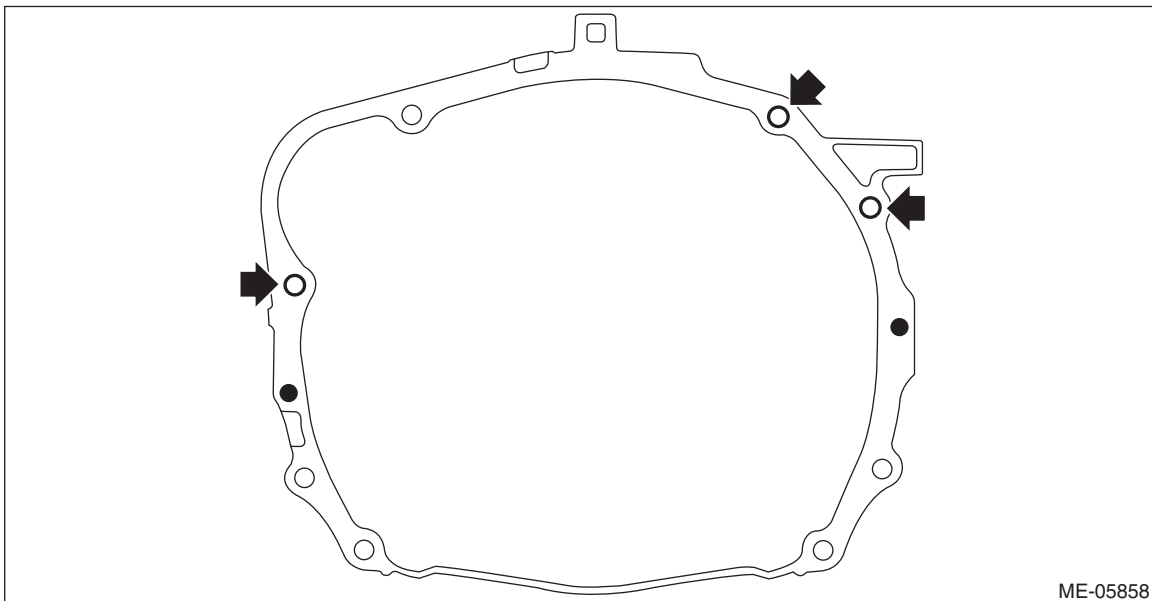
Be careful not to damage adjacent parts or body panels with crank pulley, oil level gauge, etc.

4) Install the bolts which hold upper side of transmission to engine.

Tightening torque:

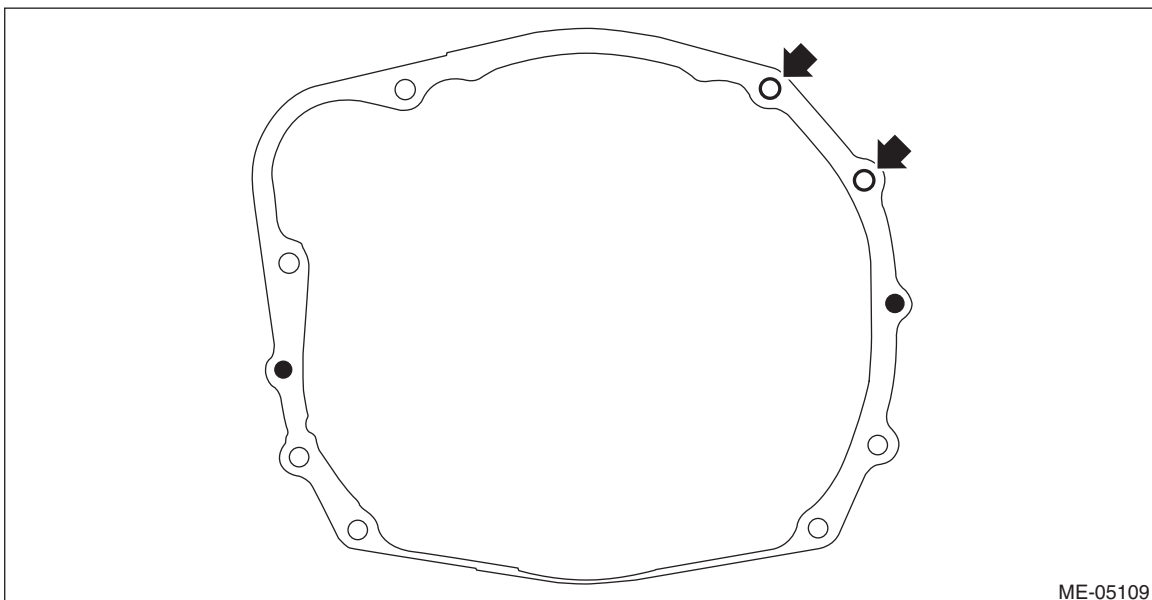
50 N·m (5.1 kgf·m, 36.9 ft·lb)

- CVT model



ME-05858

- MT model

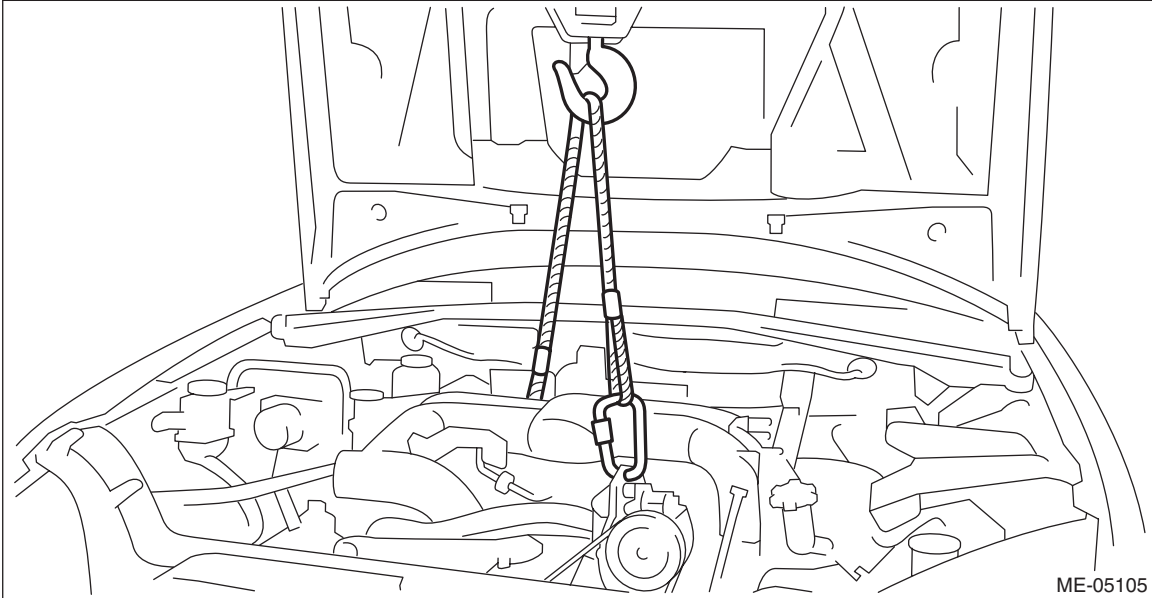


ME-05109

Engine Assembly

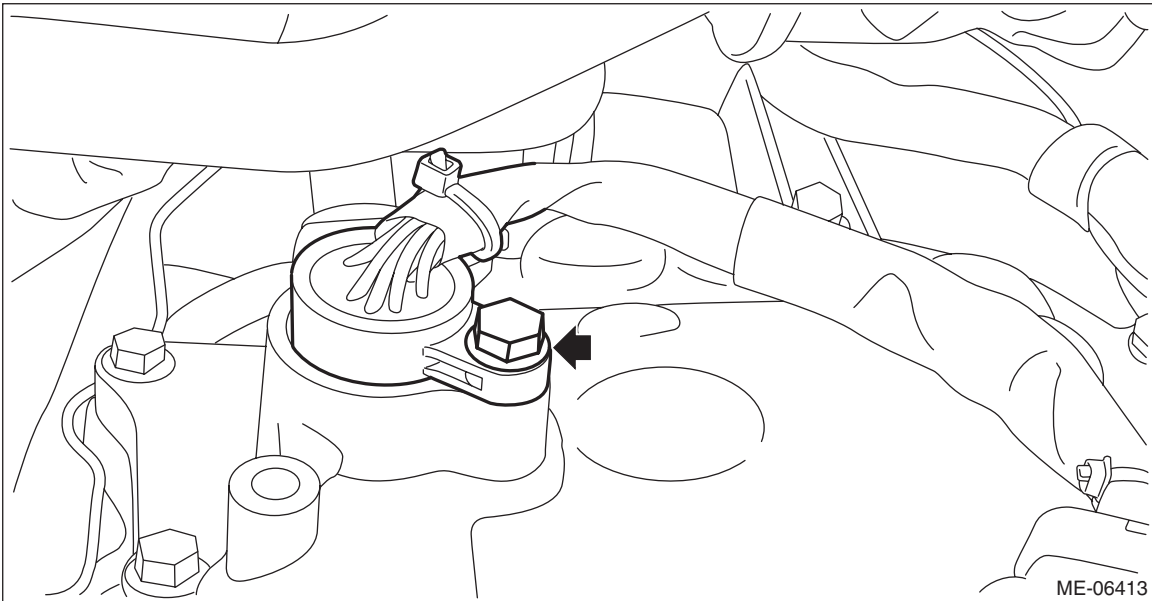
MECHANICAL

- 5) Remove the lifting device and wire ropes.



- 6) Remove the garage jack.
7) Remove the bolt and turn the transmission harness counterclockwise to install the transmission harness to the control valve body. (CVT model)

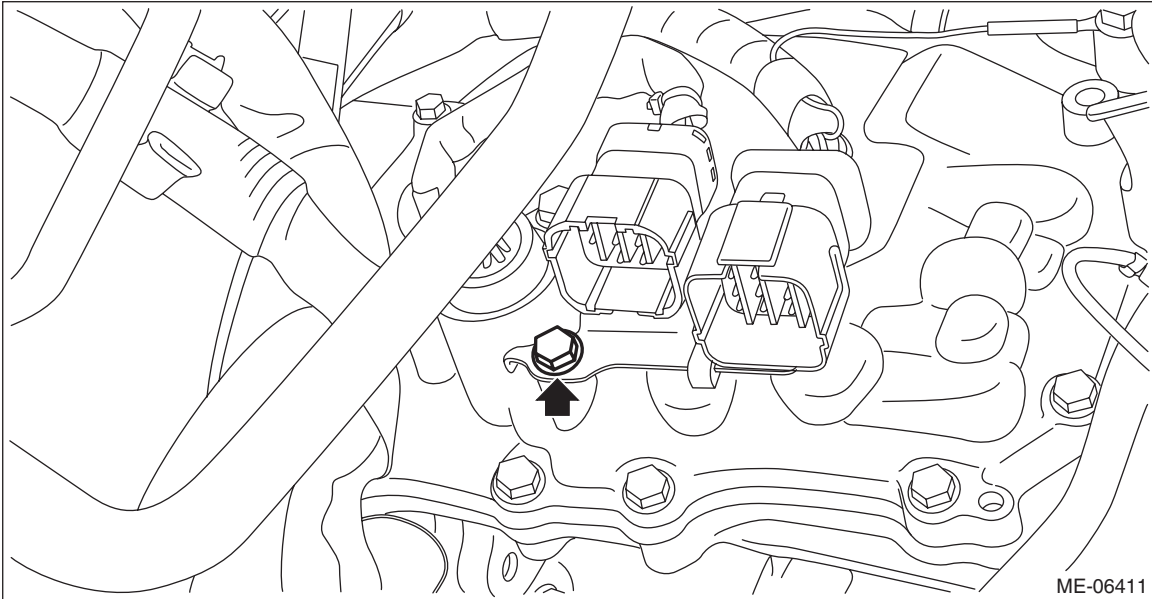
Tightening torque:
7 N·m (0.7 kgf·m, 5.2 ft·lb)



8) Install the bolt which holds the transmission harness stay. (CVT model)

Tightening torque:

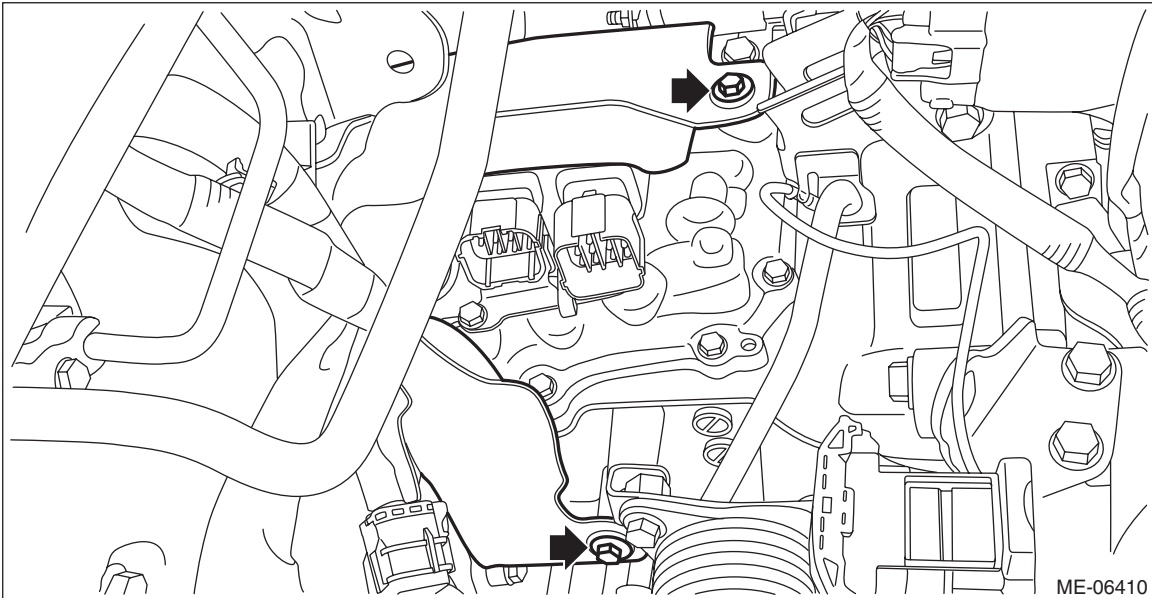
7 N·m (0.7 kgf·m, 5.2 ft·lb)



9) Install the transmission case cover. (CVT model)

Tightening torque:

8 N·m (0.8 kgf·m, 5.9 ft·lb)



Engine Assembly

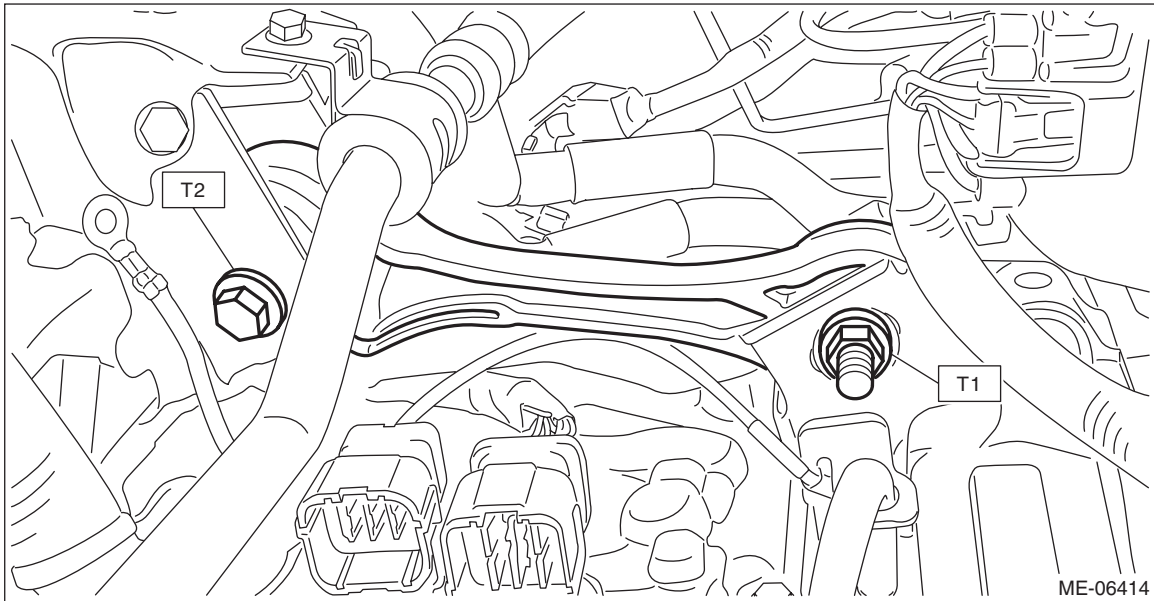
MECHANICAL

10) Install the pitching stopper.

Tightening torque:

T1: 50 N·m (5.1 kgf·m, 36.9 ft·lb)

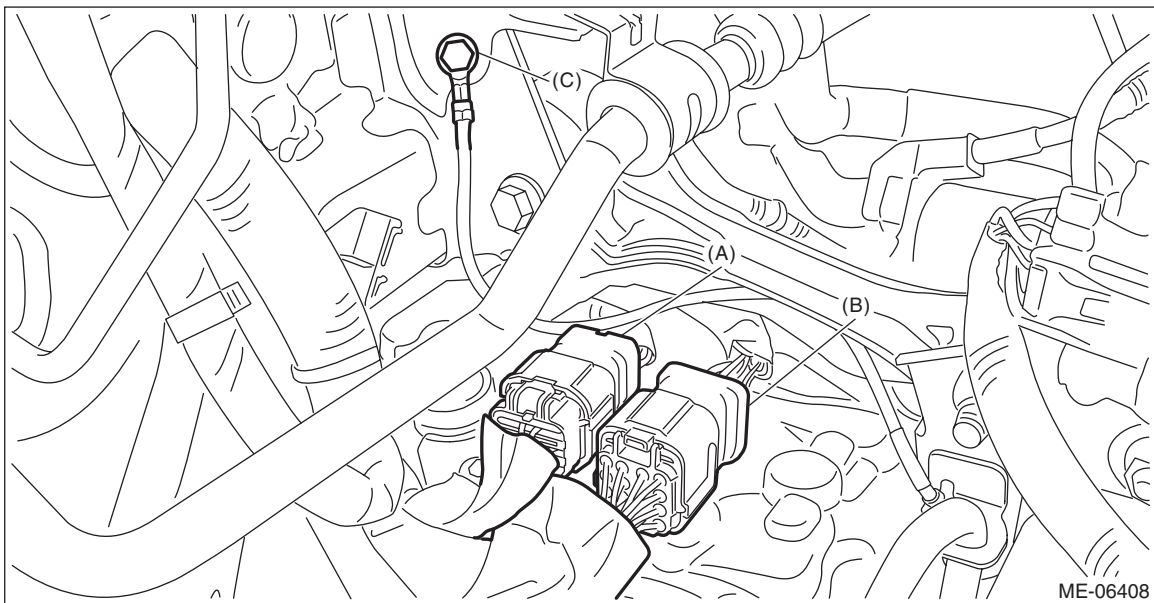
T2: 58 N·m (5.9 kgf·m, 42.8 ft·lb)



11) Connect the transmission radio ground terminal (C) to the vehicle body, and connect the bulkhead harness connector (A) to the transmission harness connector (B). (CVT model)

Tightening torque:

13 N·m (1.3 kgf·m, 9.6 ft·lb)

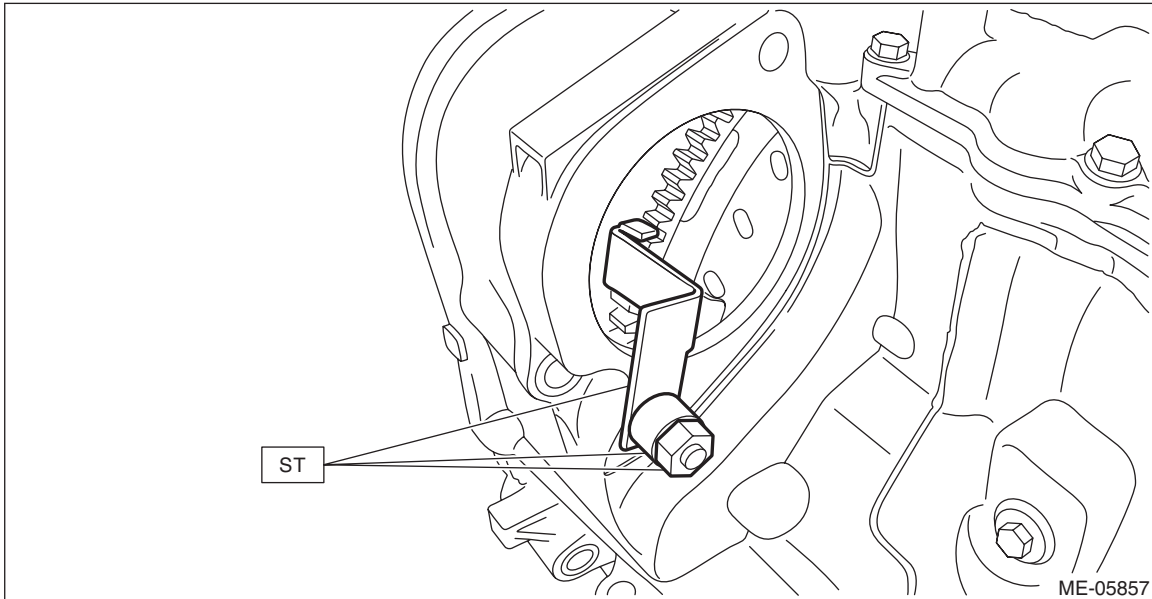


12) Remove the ST from torque converter clutch case. (CVT model)

NOTE:

Be careful not to drop the ST into the torque converter clutch case when removing the ST.

ST 498277200 STOPPER SET



13) Install the starter. <Ref. to SC(H4DO)-12, INSTALLATION, Starter.>

14) Install the torque converter clutch to drive plate. (CVT model)

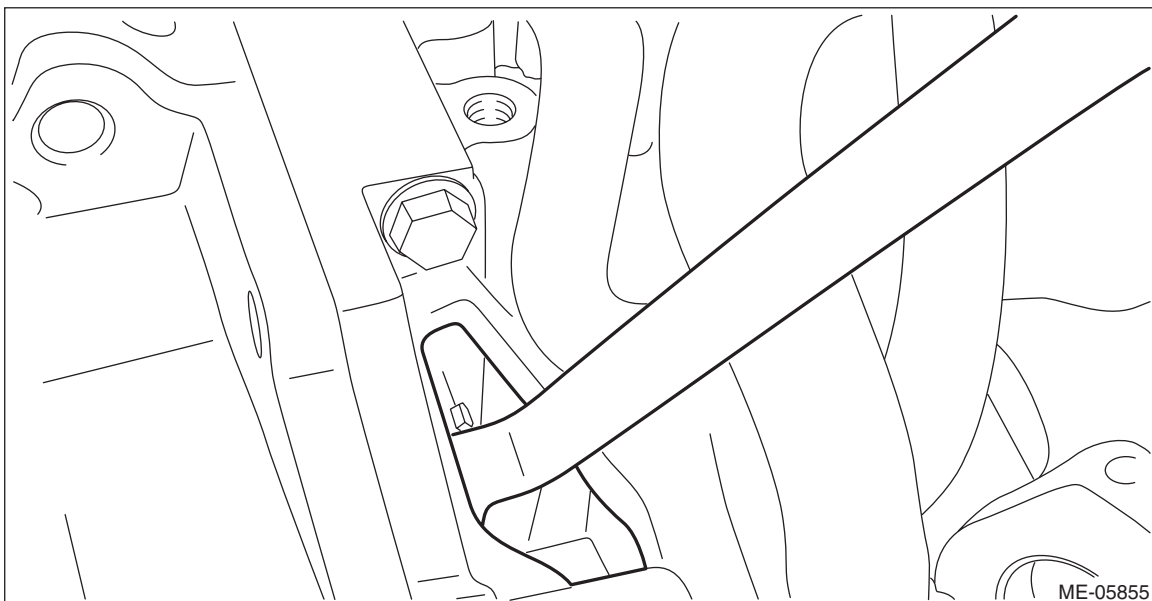
(1) Insert the wrench into the crank pulley bolt and rotate the crank pulley to install the bolts which hold torque converter clutch to drive plate.

NOTE:

Be careful not to drop bolts into the torque converter clutch case.

Tightening torque:

25 N·m (2.5 kgf·m, 18.4 ft·lb)



(2) Fit the plug to service hole.

15) Lift up the vehicle.

Engine Assembly

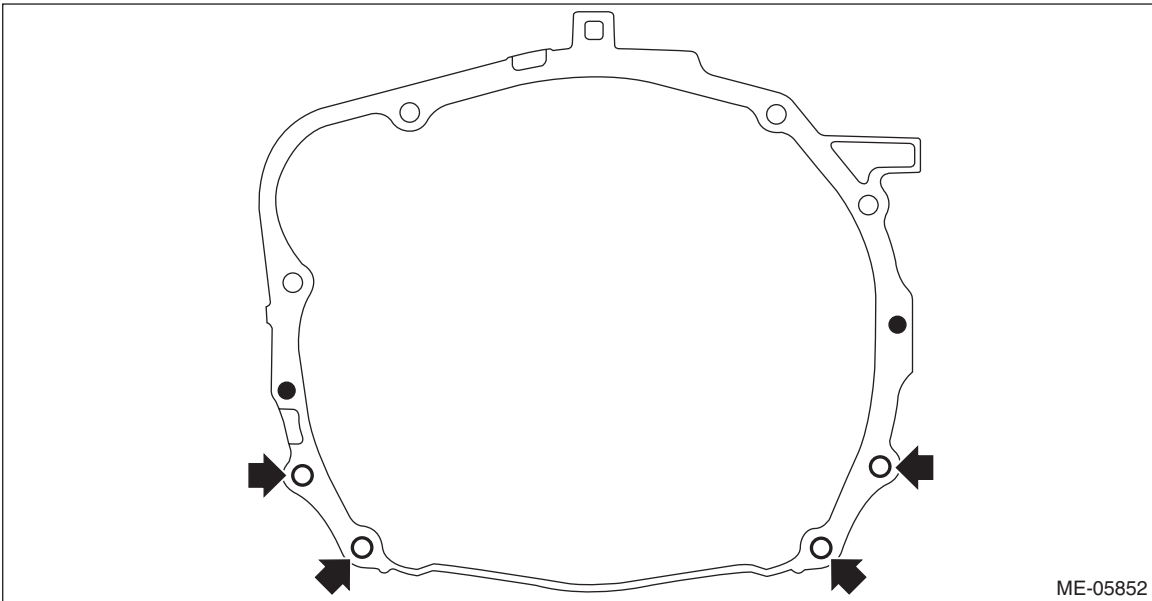
MECHANICAL

16) Install the bolts and nuts which hold lower side of the transmission to engine.

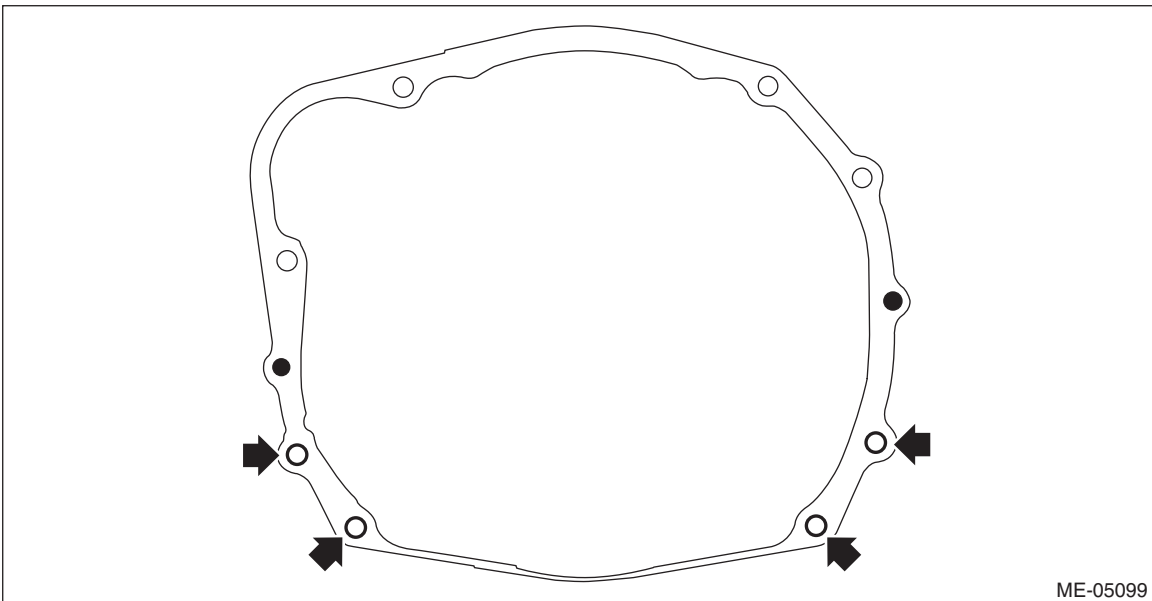
Tightening torque:

50 N·m (5.1 kgf·m, 36.9 ft·lb)

- CVT model



- MT model



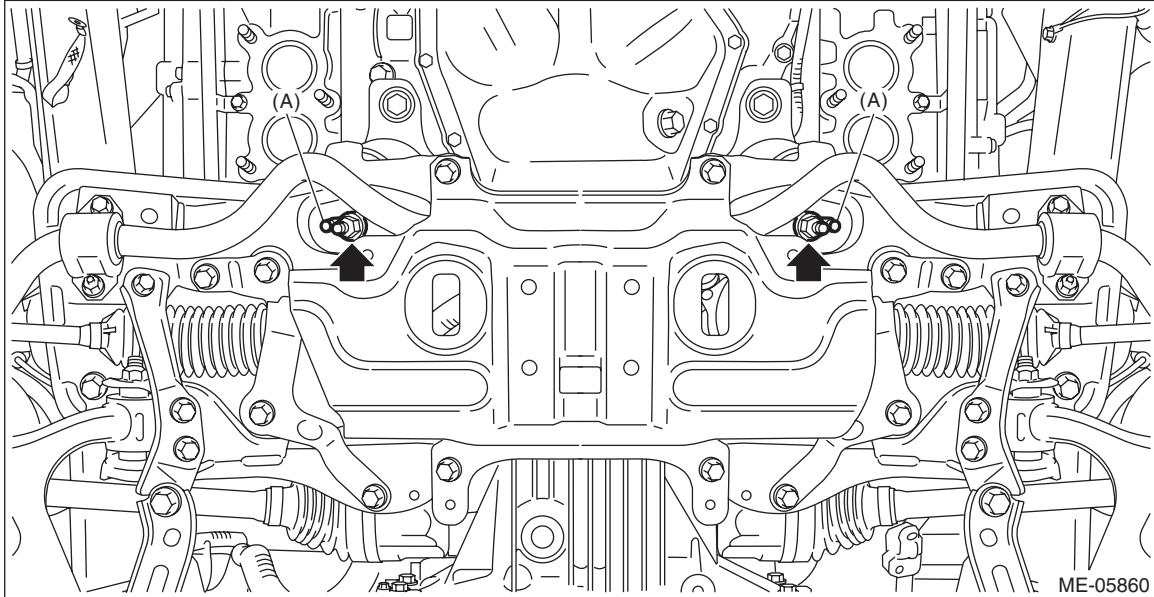
17) Install the nuts which hold the engine mounting to the crossmember. (CVT model)

NOTE:

Make sure that locators (A) of the engine mounting are securely inserted.

Tightening torque:

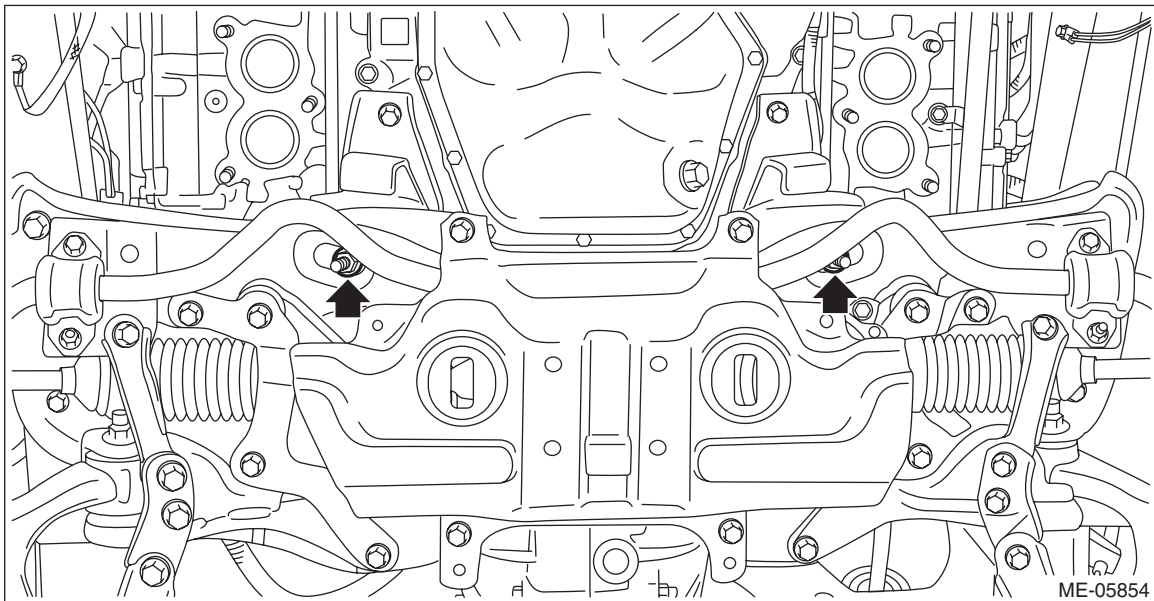
45 N·m (4.6 kgf-m, 33.2 ft-lb)



18) Install the nuts which hold the engine mounting to the crossmember. (MT model)

Tightening torque:

45 N·m (4.6 kgf-m, 33.2 ft-lb)



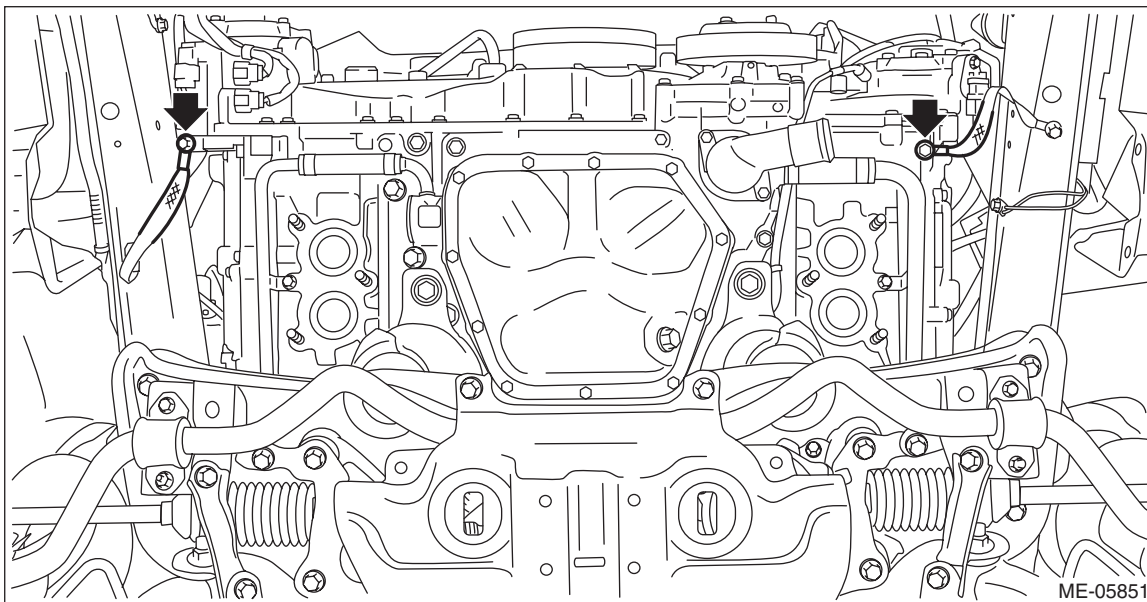
Engine Assembly

MECHANICAL

19) Connect the ground cable.

Tightening torque:

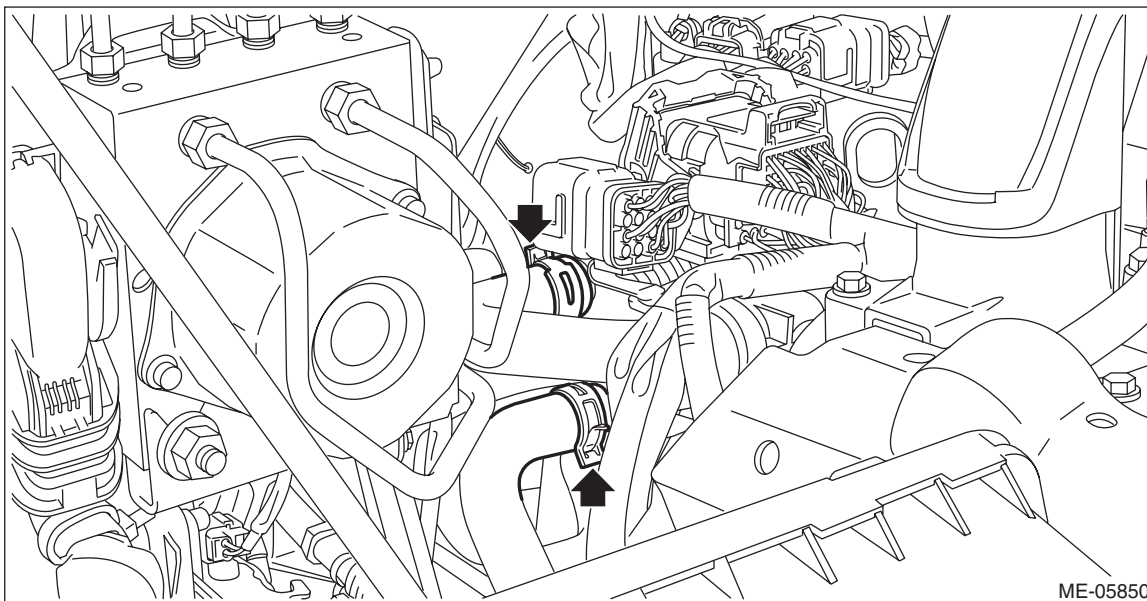
7.5 N·m (0.8 kgf·m, 5.5 ft·lb)



20) Install the front exhaust pipe. <Ref. to EX(H4DO)-10, INSTALLATION, Front Exhaust Pipe.>

21) Lower the vehicle.

22) Connect the water hose to the CVTF cooler (with warmer feature). (CVT model)



23) Connect the following hoses.

(1) Fuel delivery hose and evaporation hose

(2) Heater inlet hose and heater outlet hose

(3) Brake booster vacuum hose

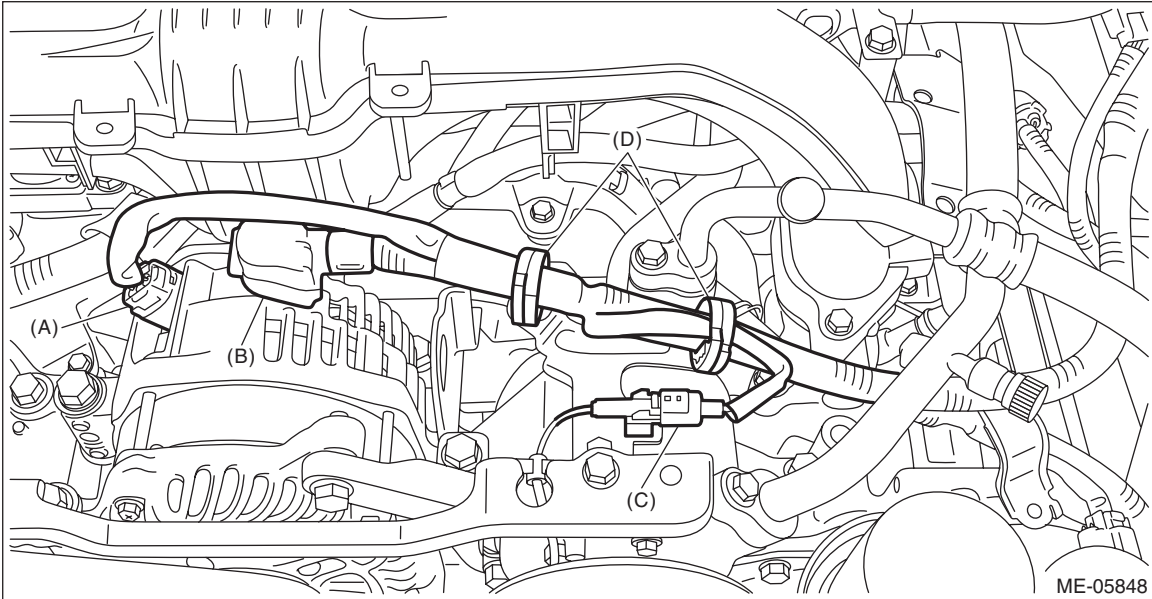
(4) A/C pressure hose <Ref. to AC-71, INSTALLATION, Hose and Pipe.>

24) Place the generator code and install the generator cord to the clip (D).

25) Connect connector (A) and terminal (B) to the generator, and connect connector (C) to A/C compressor.

Tightening torque:

15 N·m (1.5 kgf-m, 11.1 ft-lb)



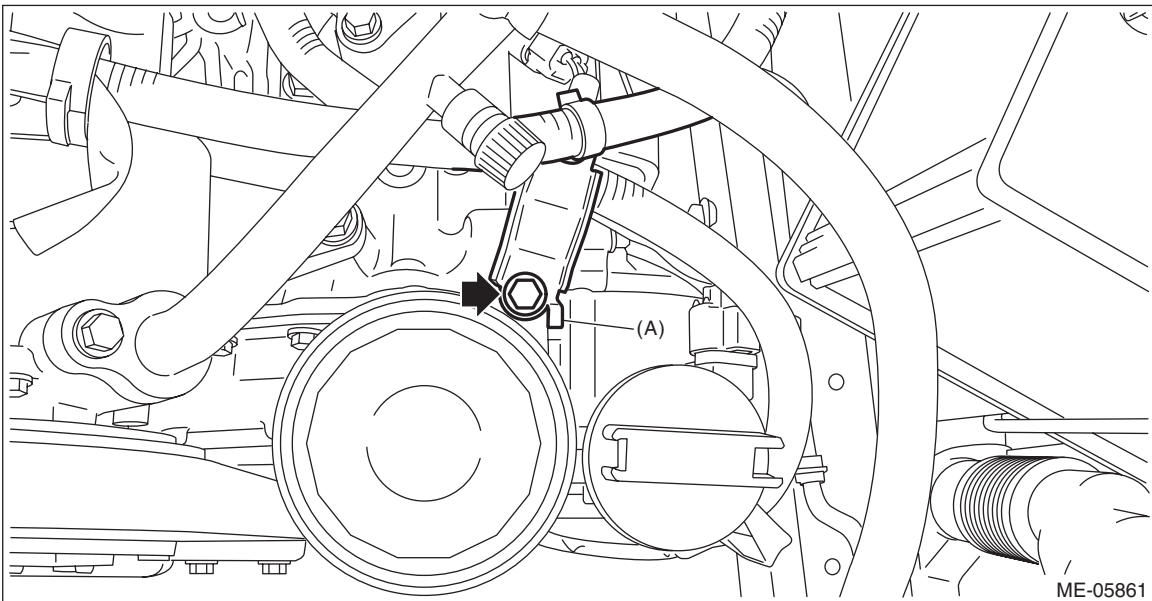
26) Install the generator cord stay to the chain cover.

NOTE:

Install the generator cord stay so that the folded end (A) touches at the chain cover boss.

Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)

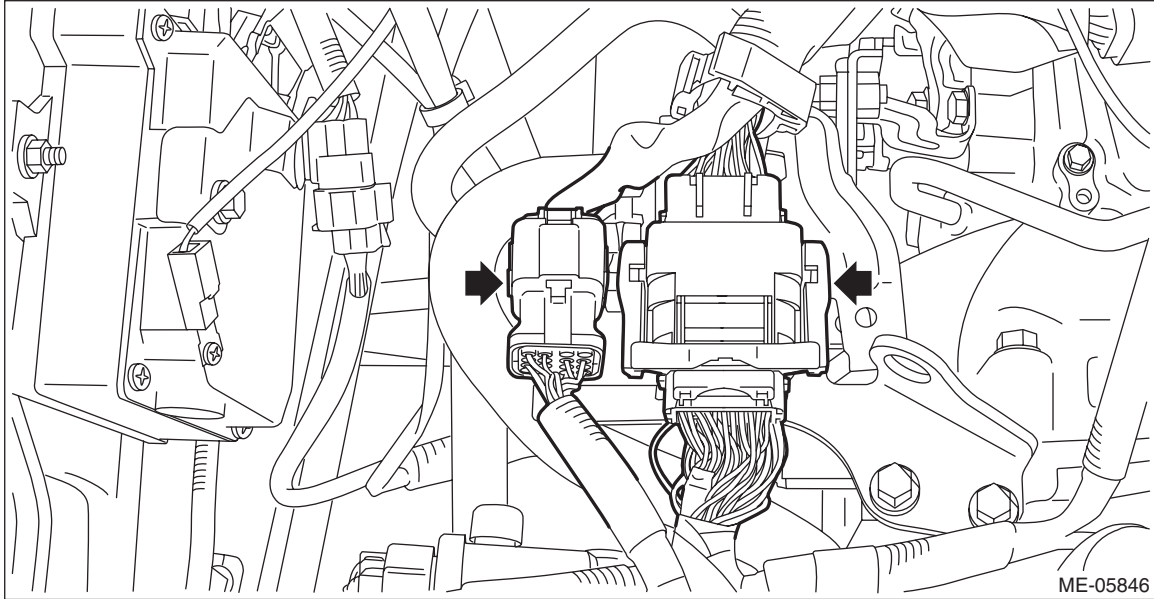


Engine Assembly

MECHANICAL

27) Connect the engine harness connector.

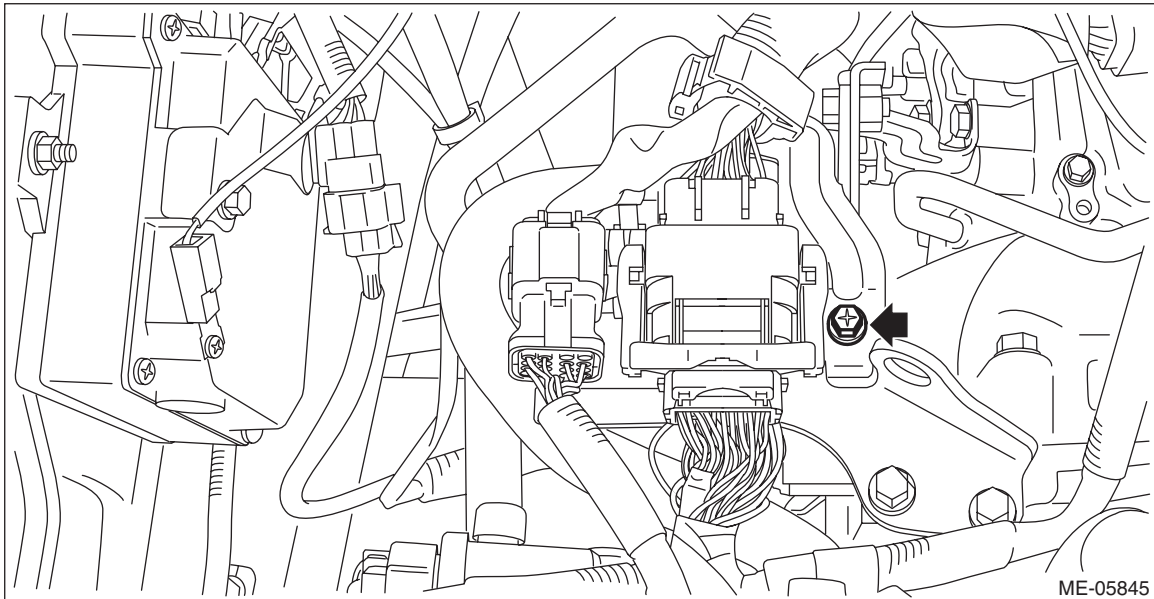
(1) Connect the bulkhead harness connector to the engine harness connector (black) and engine harness connector (brown).



(2) Install the bolt which secures the bulkhead harness connector bracket.

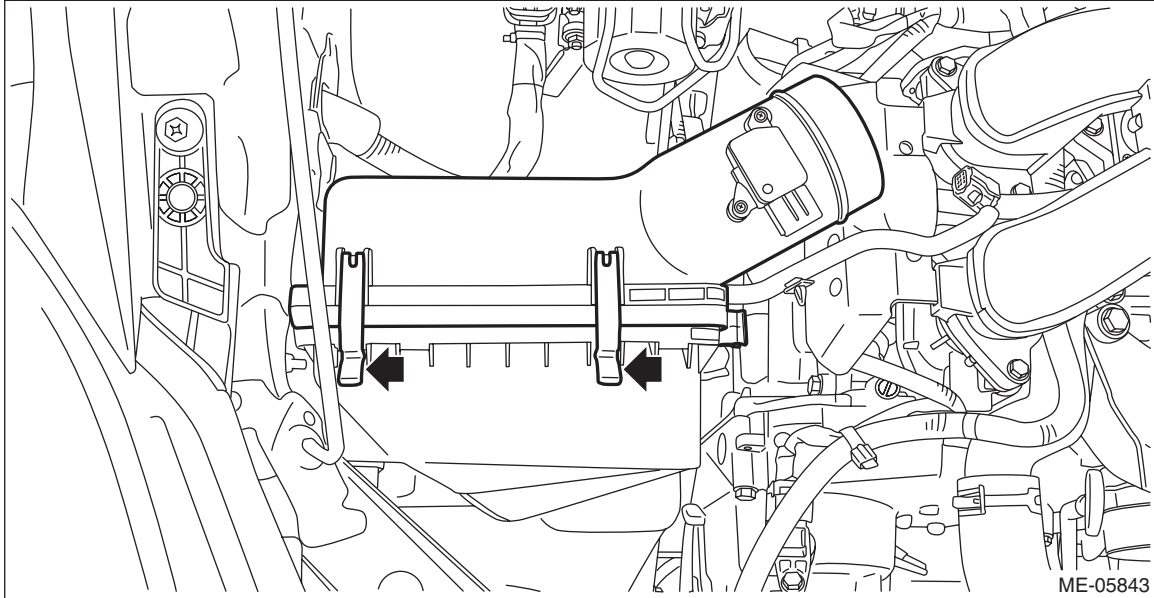
Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

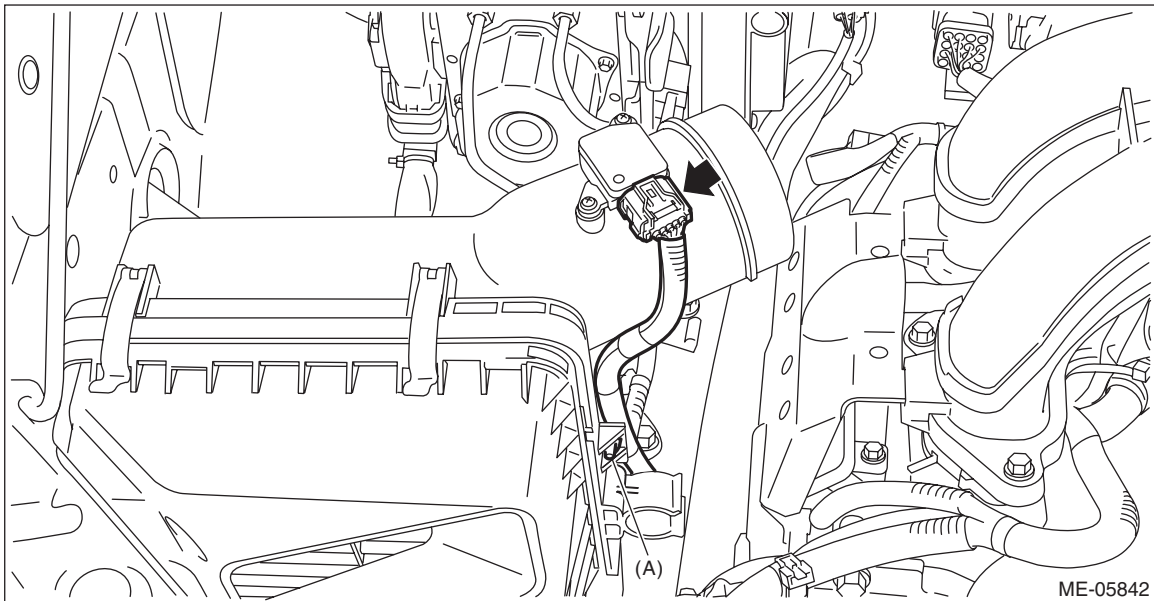


28) Install the radiator. <Ref. to CO(H4DO)-36, INSTALLATION, Radiator.>

29) Install the air intake case (rear).



30) Install the clip (A) which secures the air flow and intake air temperature sensor harness, and connect the connector to the air flow and intake air temperature sensor.



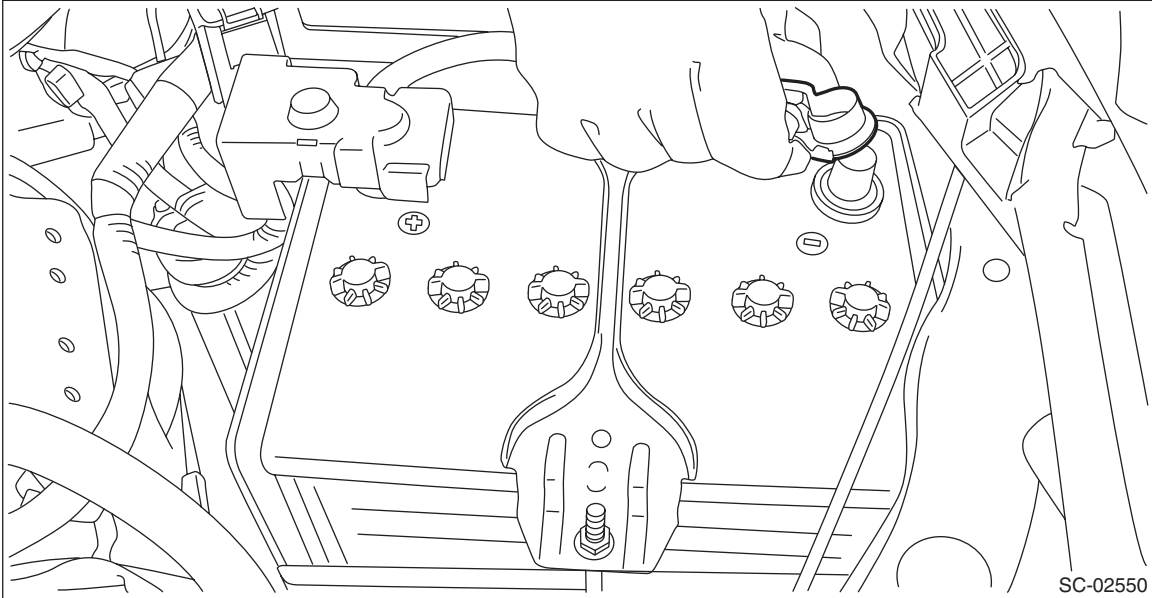
31) Install the air intake boot. <Ref. to IN(H4DO)-12, INSTALLATION, Air Intake Boot.>

32) Install the air intake duct. <Ref. to IN(H4DO)-13, INSTALLATION, Air Intake Duct.>

Engine Assembly

MECHANICAL

33) Connect the battery ground terminal.



34) Fill engine coolant. <Ref. to CO(H4DO)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

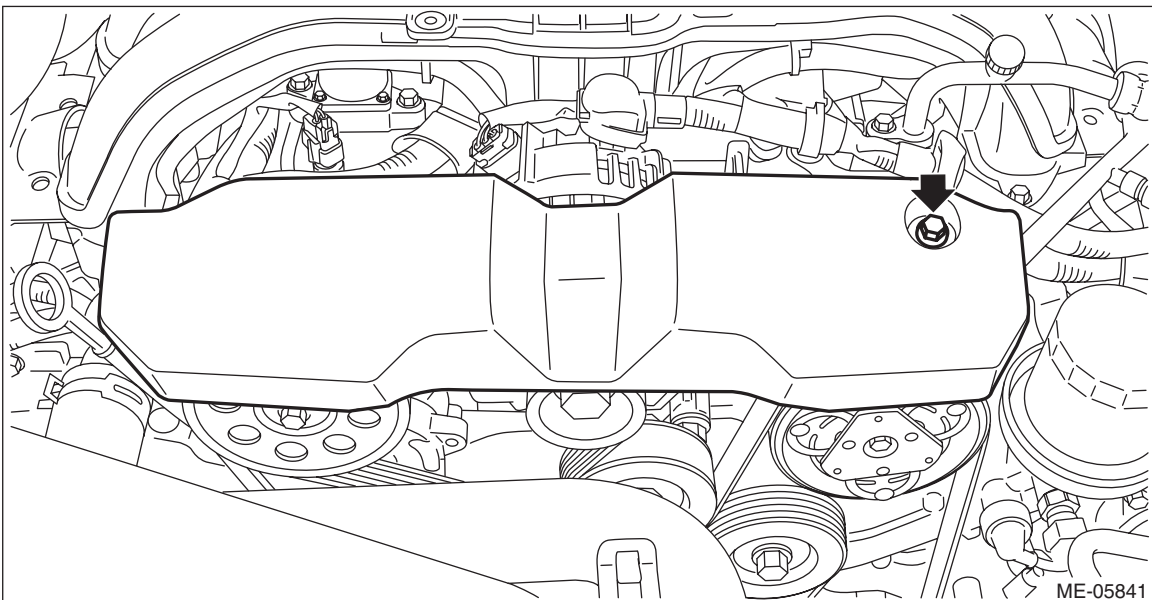
35) Check the CVTF level and replenish it if necessary. (CVT model) <Ref. to CVT-34, ADJUSTMENT, CVTF.>

36) Charge the A/C system with refrigerant. <Ref. to AC-27, PROCEDURE, Refrigerant Charging Procedure.>

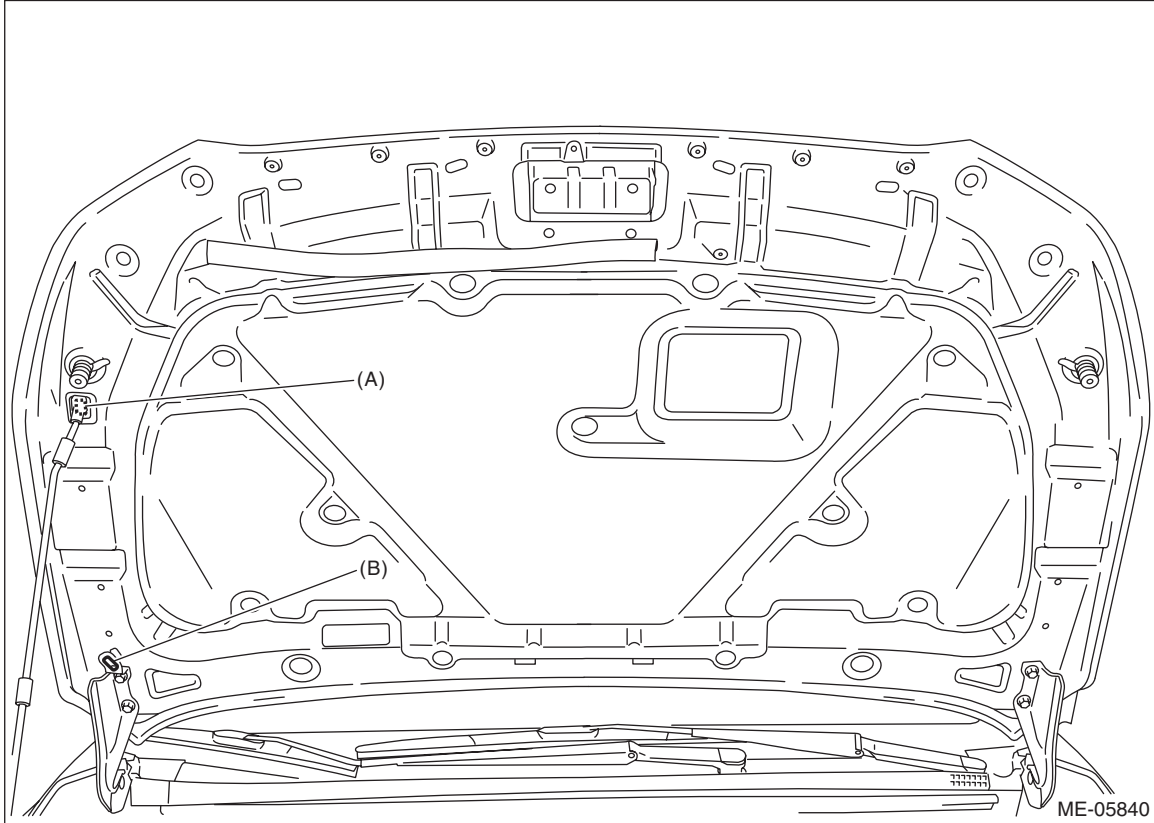
37) Install the V-belt cover.

Tightening torque:

13 N·m (1.3 kgf·m, 9.6 ft·lb)



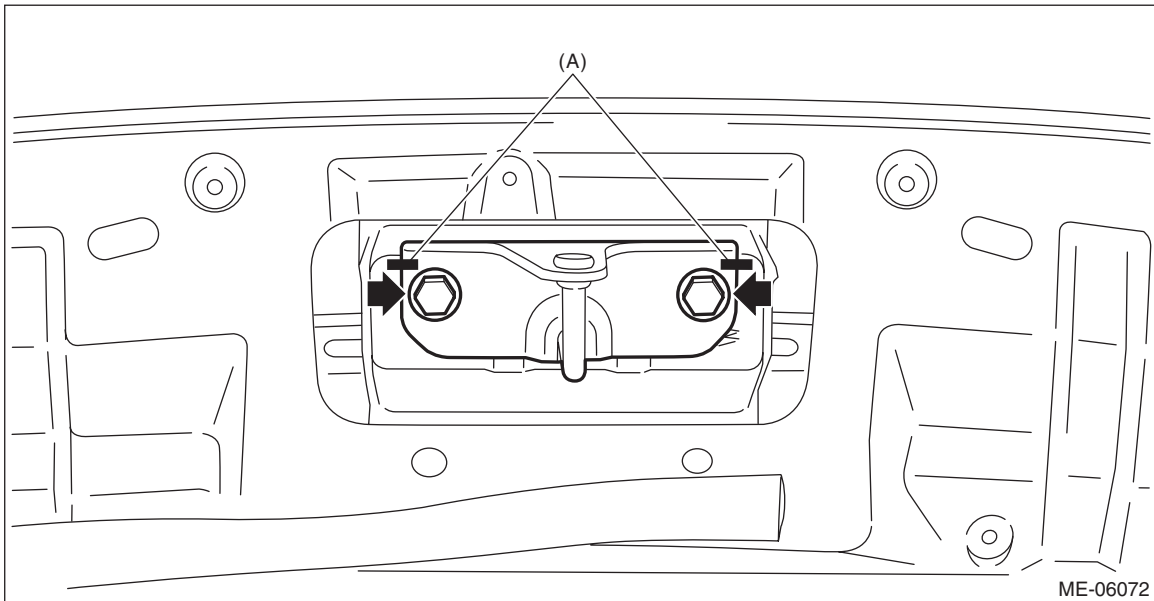
38) Change the front hood stay position from (B) to (A).



39) Install the front hood striker to the front hood by aligning the alignment marks (A), and close the front hood.

Tightening torque:

33 N·m (3.4 kgf·m, 24.3 ft·lb)



Engine Assembly

MECHANICAL

C: INSPECTION

- 1) Check that pipes, hoses, connectors and clamps are installed firmly.
- 2) Check the engine coolant is at specified level.
- 3) Check CVTF is at the specified level. (CVT model)
- 4) Start the engine and check for exhaust gas, engine coolant, leaks of fuel, etc. Also check for noise and vibrations.