

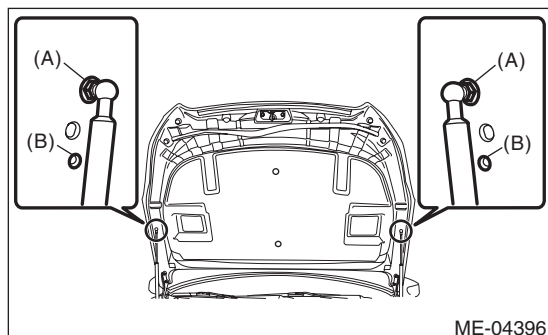
9. Engine Assembly

A: REMOVAL

1) Change the front hood damper mounting position from (A) to (B), and completely open the front hood.

Tightening torque:

20 N·m (2.0 kgf-m, 14.8 ft-lb)

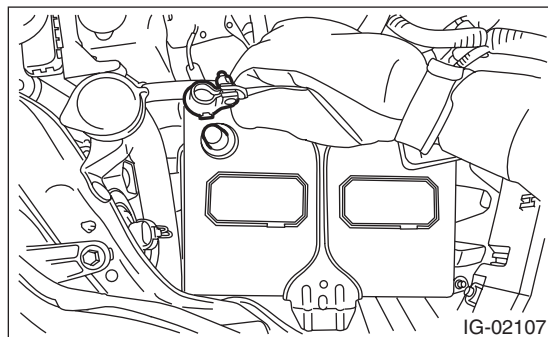


2) Remove the V-belt covers.

3) Collect the refrigerant from A/C system. <Ref. to AC-20, Refrigerant Recovery Procedure.>

4) Release the fuel pressure. <Ref. to FU(H4SO)-48, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>

5) Disconnect the ground cable from battery.



6) Open the fuel filler lid and remove the fuel filler cap.

7) Remove the air intake duct. <Ref. to IN(H4SO)-9, REMOVAL, Air Intake Duct.>

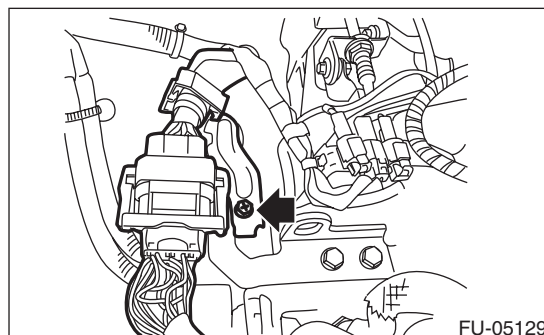
8) Remove the air intake boot assembly. <Ref. to IN(H4SO)-8, REMOVAL, Air Intake Boot.>

9) Remove the radiator. <Ref. to CO(H4SO)-19, REMOVAL, Radiator.>

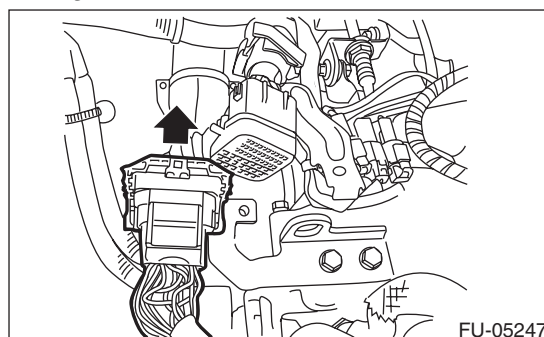
10) Remove the front exhaust pipe. <Ref. to EX(H4SO)-4, REMOVAL, Front Exhaust Pipe.>

11) Lower the vehicle.

12) Remove the bolt, and disconnect the bulkhead harness connector from the engine harness connector and rear engine hanger.

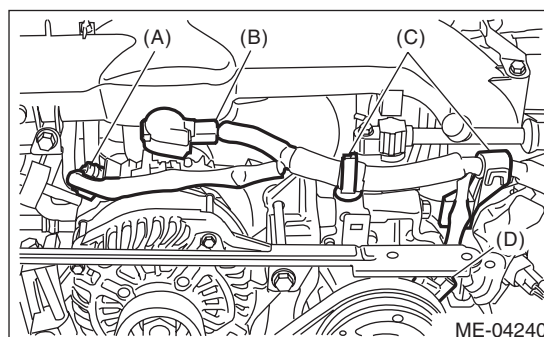


13) Slide the engine harness connector in the direction of the arrow and remove it from the rear engine hanger.

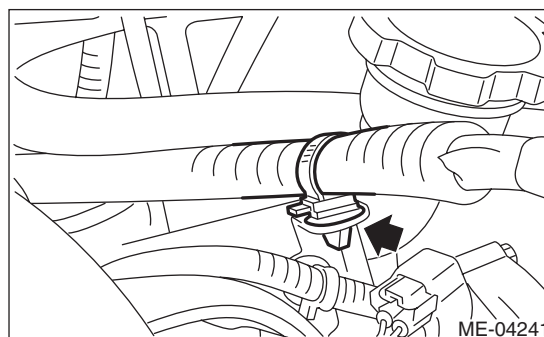


14) Disconnect connector (A) and terminal (B) from the generator, and remove the generator cord from clip (C).

15) Disconnect connector (D) from the A/C compressor.



16) Remove the clip which secure the generator cord to the intake manifold protector LH.

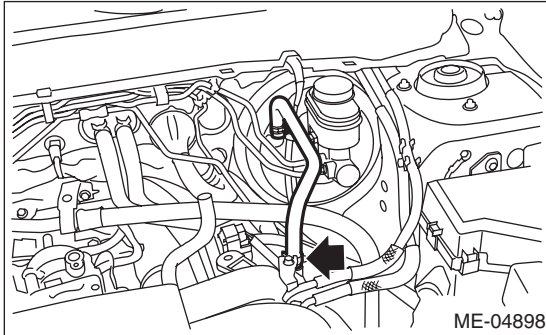


Engine Assembly

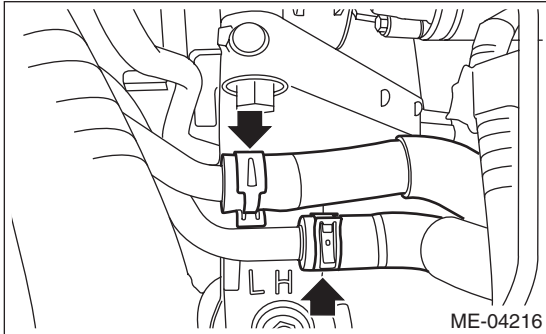
MECHANICAL

17) Disconnect the following hoses.

- (1) A/C pressure hose <Ref. to AC-68, REMOVAL, Hose and Pipe.>
- (2) Brake booster vacuum hose

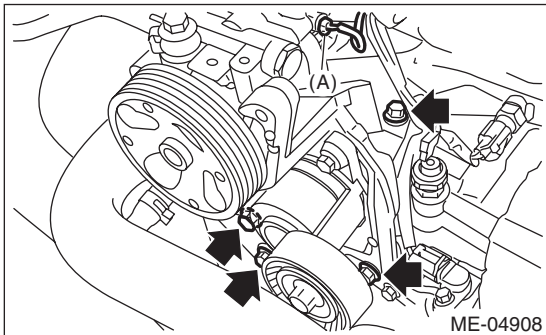


(3) Heater inlet hose and heater outlet hose



18) Remove the power steering pump.

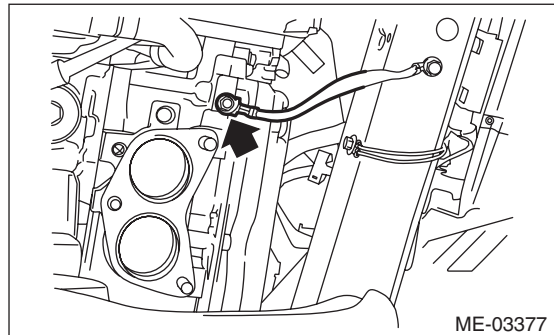
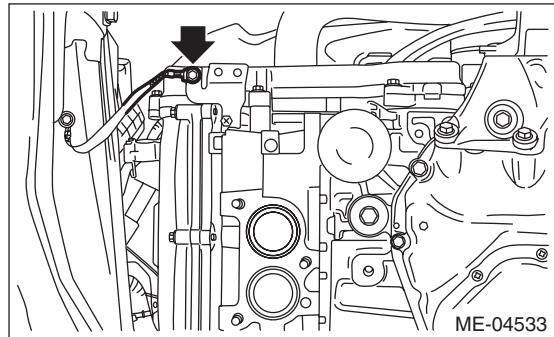
- (1) Remove the V-belts. <Ref. to ME(H4SO)-42, REMOVAL, V-belt.>
- (2) Disconnect the connector (A) from power steering pump, and remove the power steering pump together with the power steering pump bracket from engine and stopper rod.



(3) Mount the power steering pump together with the power steering pump bracket on RH side wheel apron.

19) Lift up the vehicle.

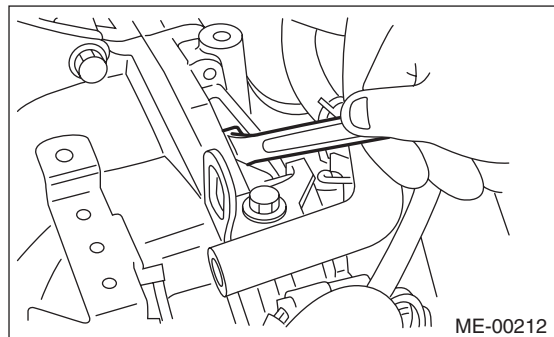
20) Disconnect the ground cable on the engine side.



21) Lower the vehicle.

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

- (1) Remove the throttle body. <Ref. to FU(H4SO)-15, REMOVAL, Throttle Body.>
- (2) Remove the manifold absolute pressure sensor. <Ref. to FU(H4SO)-32, REMOVAL, Manifold Absolute Pressure Sensor.>
- (3) Remove the service hole plug.
- (4) Insert the wrench into the crank pulley bolt, and rotate the crank pulley to remove the four bolts which hold torque converter clutch to the drive plate.



23) Disconnect the fuel delivery hose (A) and evaporation hose (B).

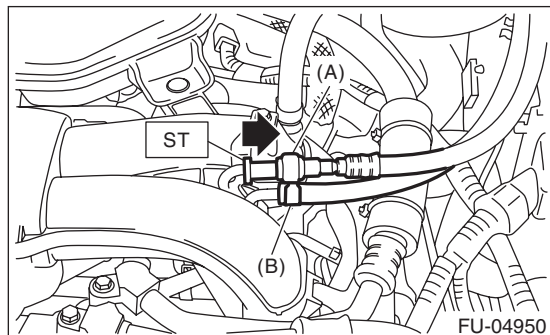
CAUTION:

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

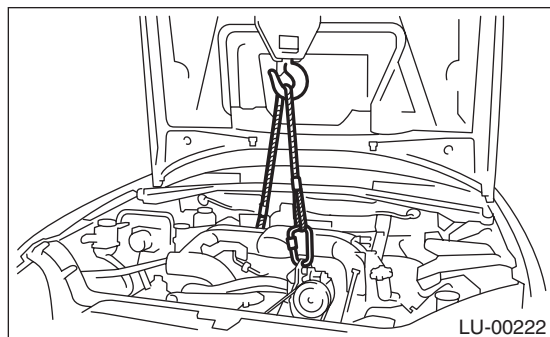
(1) Attach ST to the fuel delivery pipe and push ST in the direction of arrow mark to disconnect the quick connector of the fuel delivery hose (A).

ST 42099AE000 QUICK CONNECTOR RELEASE

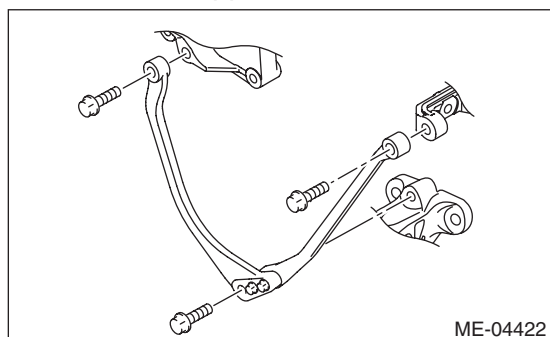
(2) Remove the clip and disconnect the evaporation hose (B) from the evaporation pipe.



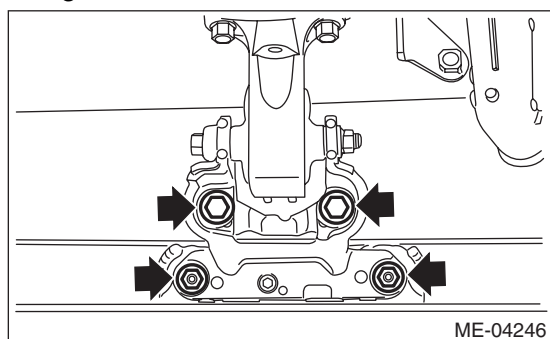
24) Support the engine with a lifting device and wire ropes.



25) Remove the stopper rod.



26) Remove the bolt and nut which secure engine mounting to the cradle.

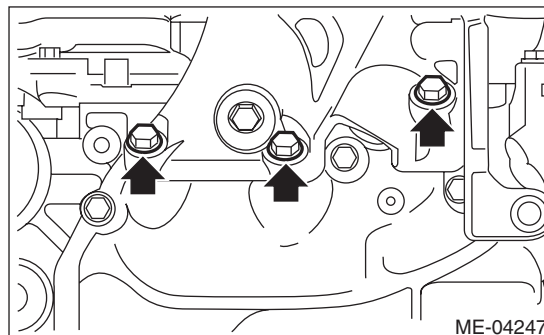


27) Lift up the vehicle.

CAUTION:

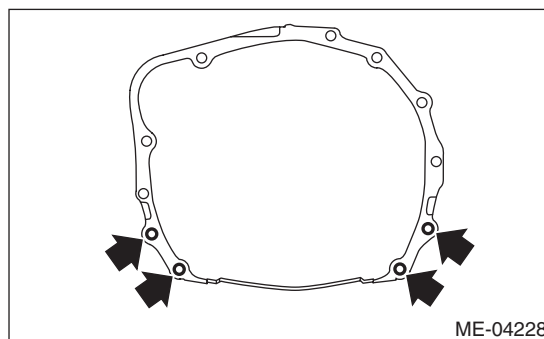
When lifting up the vehicle, raise up wire ropes at the same time.

28) Remove the bolts which secure the engine mounting onto the engine, and remove the engine mounting.

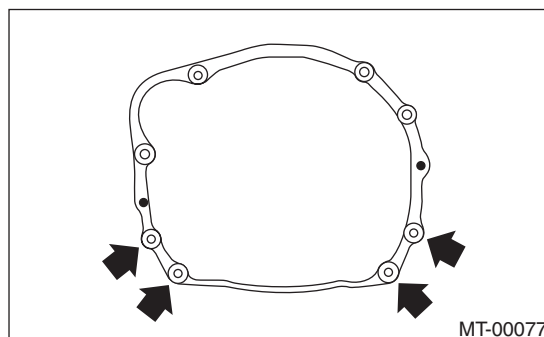


29) Remove the bolts and nuts which hold the lower side of transmission to the engine.

• CVT model



• MT model



30) Lower the vehicle.

CAUTION:

When lifting down the vehicle, lower wire ropes at the same time.

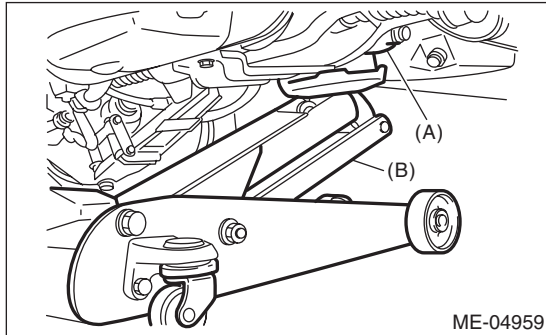
Engine Assembly

MECHANICAL

31) Support the transmission with a garage jack.

NOTE:

Fine adjustment of the transmission height can be performed with this operation.



- (A) Transmission
- (B) Garage jack

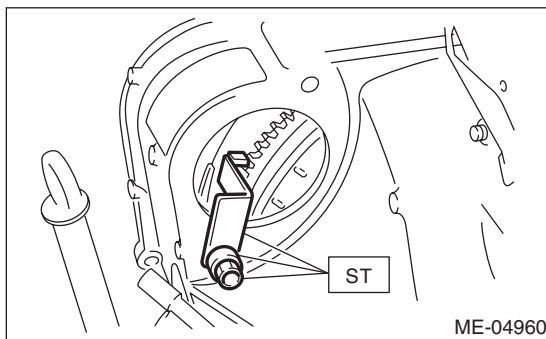
32) Separation of engine and transmission

CAUTION:

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

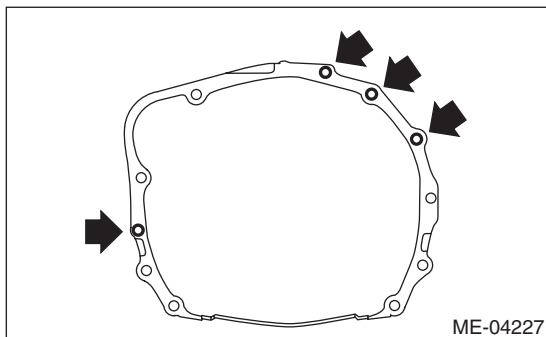
- (1) Remove the starter. <Ref. to SC(H4SO)-9, REMOVAL, Starter.>
- (2) Attach the ST to the torque converter clutch case. (CVT model)

ST 498277200 STOPPER SET

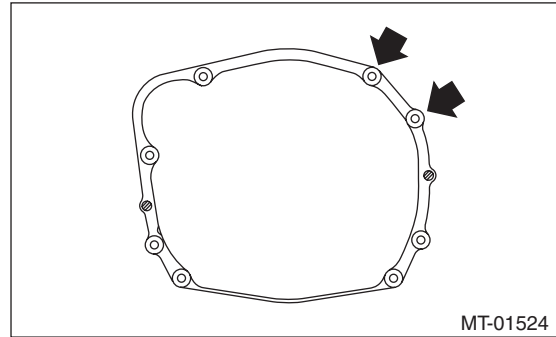


(3) Remove the bolts which hold the upper side of the transmission to the engine.

- CVT model



- MT model



33) Remove the engine from vehicle.

- (1) Slightly raise the engine.
- (2) Adjust the height of 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.

NOTE:

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

B: INSTALLATION

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

Grease:

NICHIMOLY N-130 or equivalent

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

NOTE:

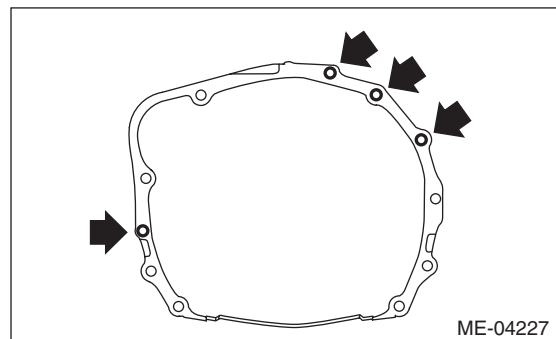
Be careful not to damage adjacent parts or body panels with crank pulley, oil level gauge, etc.

- 3) Tighten the bolts which hold upper side of transmission to engine.

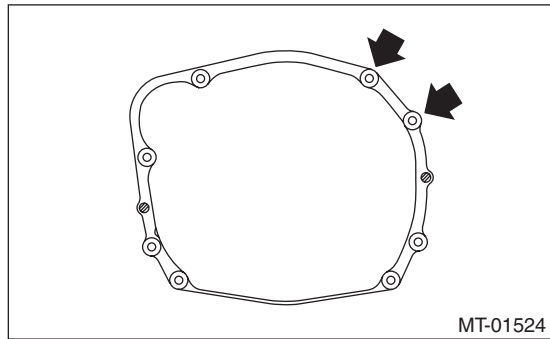
Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

- CVT model



- MT model



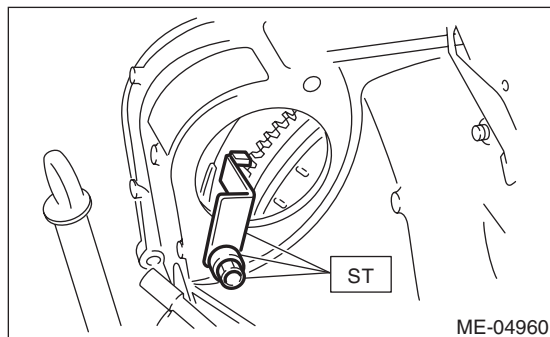
4) Remove the garage jack.

5) 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



6) Install the starter. <Ref. to SC(H4SO)-9, INSTALLATION, Starter.>

7) Lift up the vehicle.

CAUTION:

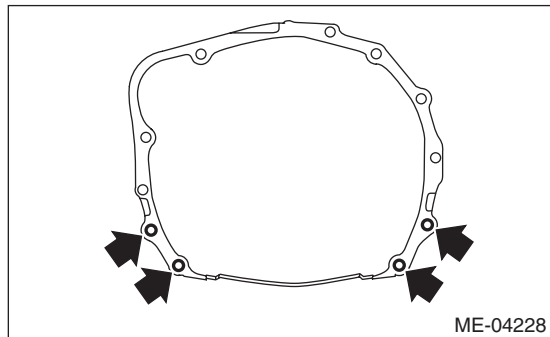
When lifting up the vehicle, raise up wire ropes at the same time.

8) Attach the bolts and nuts which hold lower side of the transmission to engine.

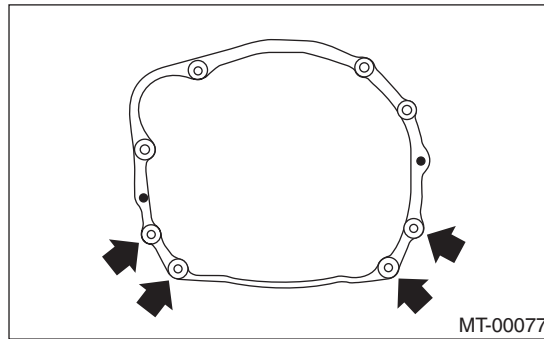
Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

- CVT model



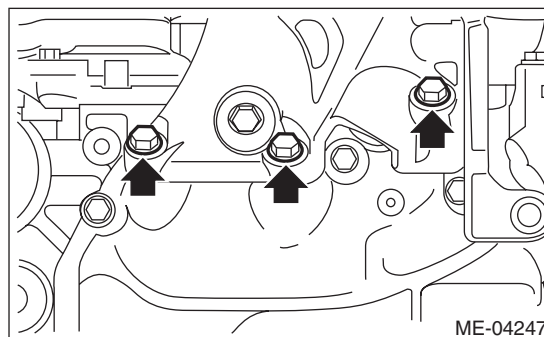
- MT model



9) Set the engine mounting, and tighten the bolts which hold engine mounting to the engine.

Tightening torque:

58 N·m (5.9 kgf-m, 42.8 ft-lb)



10) Lower the vehicle.

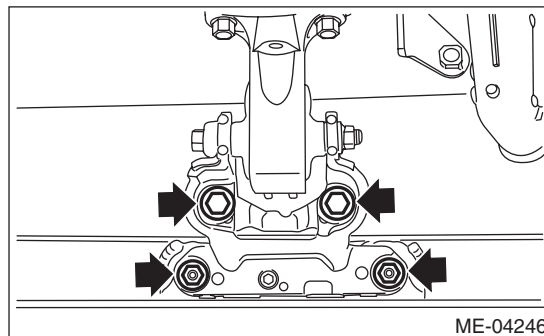
CAUTION:

When lifting down the vehicle, lower wire ropes at the same time.

11) Attach the bolts and nuts which secure engine mounting to the cradle.

Tightening torque:

60 N·m (6.1 kgf-m, 44.3 ft-lb)



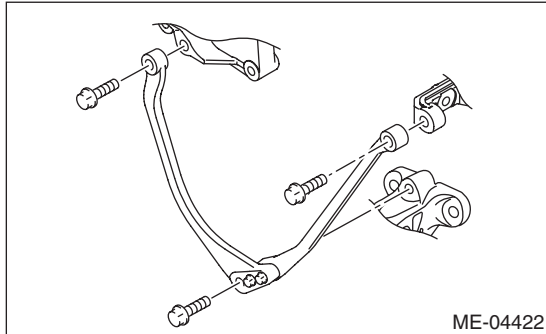
Engine Assembly

MECHANICAL

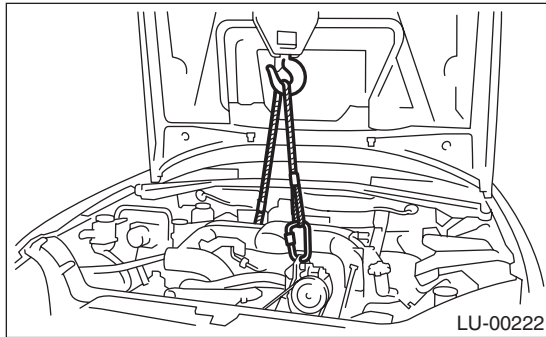
12) Install the stopper rod.

Tightening torque:

36 N·m (3.7 kgf·m, 26.6 ft-lb)



13) Remove the lifting device and wire ropes.



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

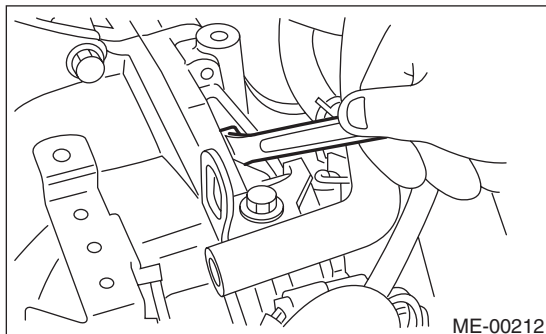
- (1) Insert the wrench into the crank pulley bolt, and rotate the crank pulley to attach the four bolts which hold torque converter clutch to the drive plate.

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)



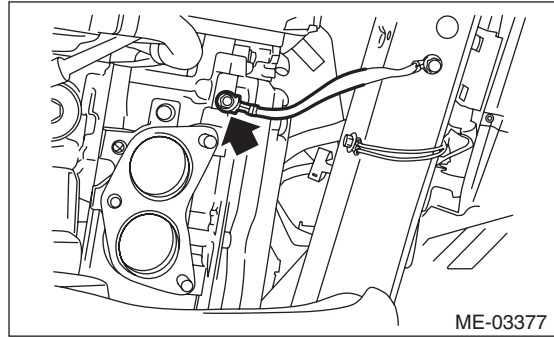
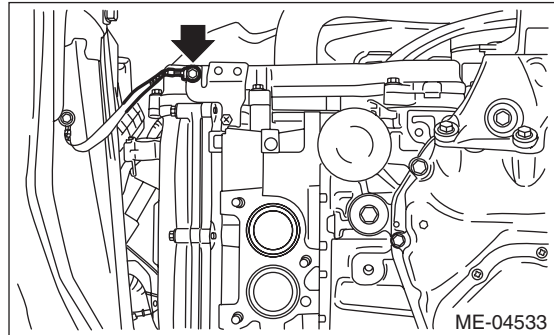
- (2) Fit the plug to service hole.
(3) Install the throttle body. <Ref. to FU(H4SO)-15, INSTALLATION, Throttle Body.>
(4) Install the manifold absolute pressure sensor. <Ref. to FU(H4SO)-32, INSTALLATION, Manifold Absolute Pressure Sensor.>

15) Lift up the vehicle.

16) Connect the ground cable.

Tightening torque:

7.5 N·m (0.8 kgf·m, 5.5 ft-lb)



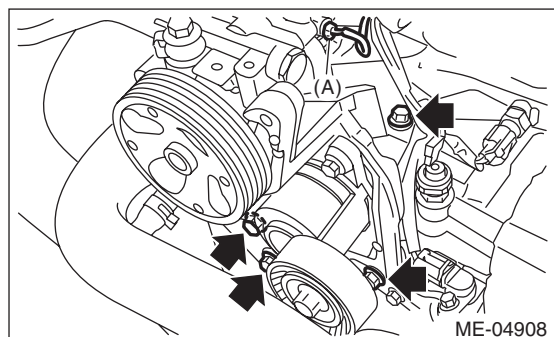
17) Lower the vehicle.

18) Install the power steering pump.

- (1) Install the power steering pump together with the power steering pump bracket to engine and stopper rod, and connect the connector (A) to the power steering pump.

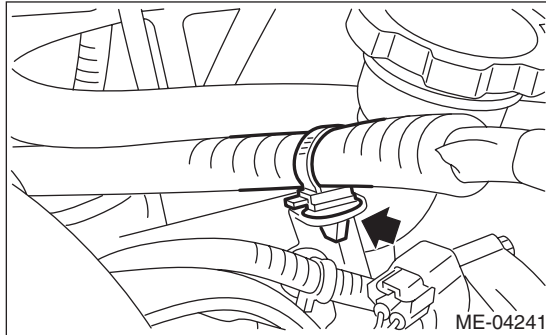
Tightening torque:

Refer to “COMPONENT” of “STARTING/CHARGING SYSTEMS” for the tightening torque. <Ref. to SC(H4SO)-7, GENERATOR BRACKET, COMPONENT, General Description.>



- (2) Install the V-belts. <Ref. to ME(H4SO)-42, INSTALLATION, V-belt.>

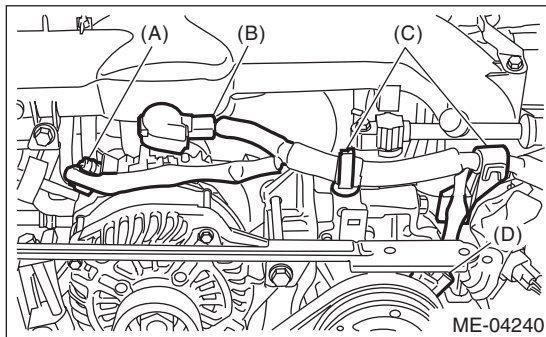
- 19) Connect the following hoses.
 - (1) Fuel delivery hose
 - (2) Evaporation hose
 - (3) Heater inlet hose and heater outlet hose
 - (4) Brake booster vacuum hose
 - (5) A/C pressure hose <Ref. to AC-68, INSTALLATION, Hose and Pipe.>
- 20) Install the clip which secure the generator cord to the intake manifold protector LH.



- 21) Connect connector (D) to the A/C compressor.
- 22) Install the generator cord to clip (C), and connect connector (A) and terminal (B) to the generator.

Tightening torque:

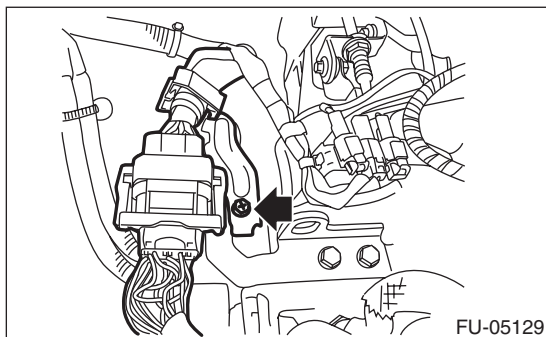
15 N·m (1.5 kgf-m, 11.1 ft-lb)



- 23) Connect the engine harness connector to the bulkhead harness connector, attach it to the rear engine hanger, and fasten with bolt.

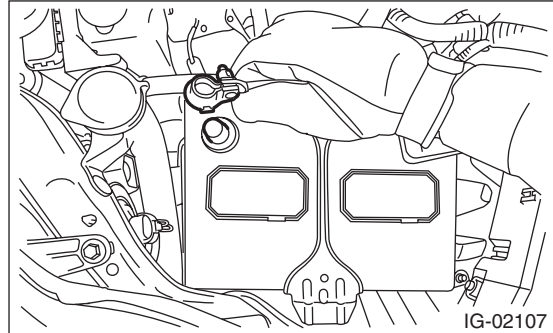
Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



- 24) Install the front exhaust pipe. <Ref. to EX(H4SO)-5, INSTALLATION, Front Exhaust Pipe.>

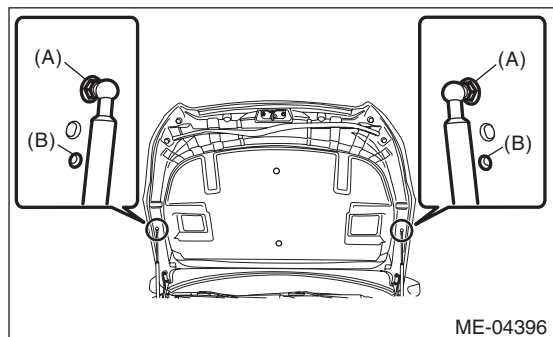
- 25) Install the radiator. <Ref. to CO(H4SO)-20, INSTALLATION, Radiator.>
- 26) Install the air intake boot assembly. <Ref. to IN(H4SO)-8, INSTALLATION, Air Intake Boot.>
- 27) Install the air intake duct. <Ref. to IN(H4SO)-9, INSTALLATION, Air Intake Duct.>
- 28) Connect the battery ground terminal.



- 29) Fill engine coolant. <Ref. to CO(H4SO)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 30) Charge the A/C system with refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>
- 31) Check the CVTF level and replenish it if necessary. (CVT model) <Ref. to CVT-37, ADJUSTMENT, CVTF.>
- 32) Install the V-belt cover.
- 33) Change the front hood damper mounting position from (B) to (A), and close the front hood.

Tightening torque:

20 N·m (2.0 kgf-m, 14.8 ft-lb)



C: INSPECTION

- 1) Check that the pipes, hoses, connectors and clamps are securely connected.
- 2) Check that the engine coolant is up to specified level.
- 3) Check CVTF is at the specified level. (CVT model)
- 4) Start the engine and check for exhaust gas leakage, engine coolant leakage, fuel leakage, noise or vibration.