

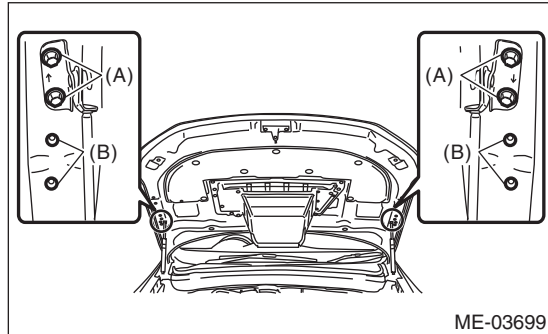
9. Engine Assembly

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Change the bolt mounting position from (A) to (B), and completely open the front hood.

Tightening torque:

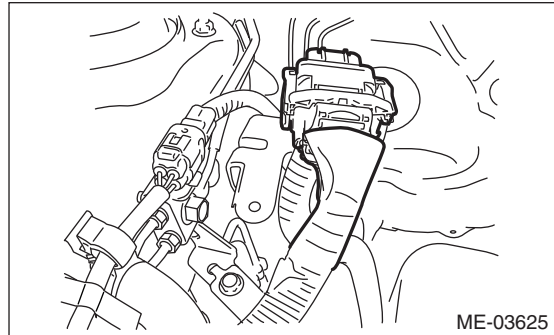
7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



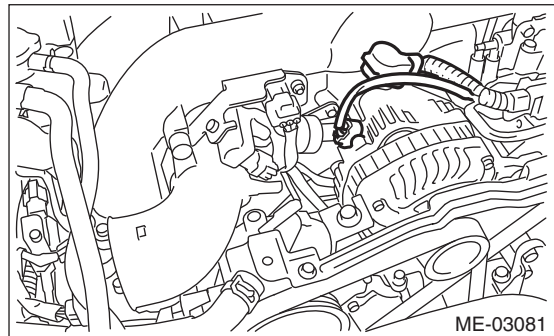
- 3) Remove the collector cover.
- 4) Collect the refrigerant from the A/C system. <Ref. to AC-17, Refrigerant Recovery Procedure.>
- 5) Release the fuel pressure. <Ref. to FU(H4DOTC)-51, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 6) Disconnect the battery cable, and remove the battery from the vehicle.
- 7) Open the fuel filler lid, and remove the fuel filler cap.
- 8) Remove the air intake duct and air cleaner case. <Ref. to IN(H4DOTC)-9, REMOVAL, Air Intake Duct.> <Ref. to IN(H4DOTC)-8, REMOVAL, Air Cleaner Case.>
- 9) Remove the intercooler. <Ref. to IN(H4DOTC)-11, REMOVAL, Intercooler.>
- 10) Remove the radiator from the vehicle. <Ref. to CO(H4DOTC)-19, REMOVAL, Radiator.>
- 11) Remove the coolant filler tank. <Ref. to CO(H4DOTC)-29, REMOVAL, Coolant Filler Tank.>
- 12) Disconnect the A/C pressure hoses from the A/C compressor. <Ref. to AC-35, REMOVAL, Hose and Pipe.>

- 13) Disconnect the following connectors and cables.

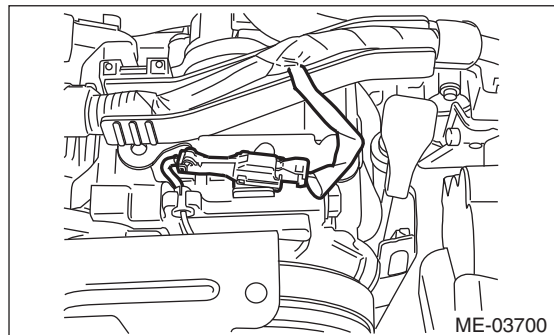
(1) Engine harness connectors



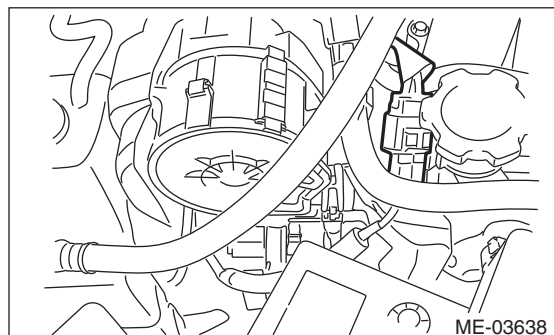
(2) Generator connector and terminal



(3) A/C compressor connector

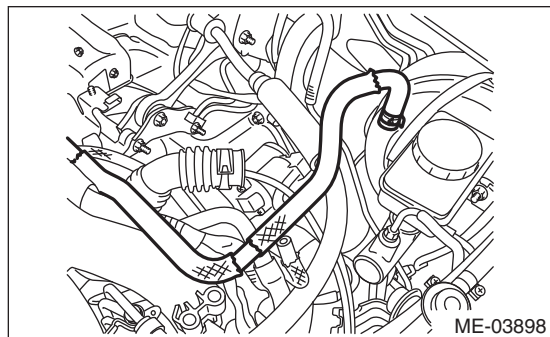


(4) Secondary air pump connector

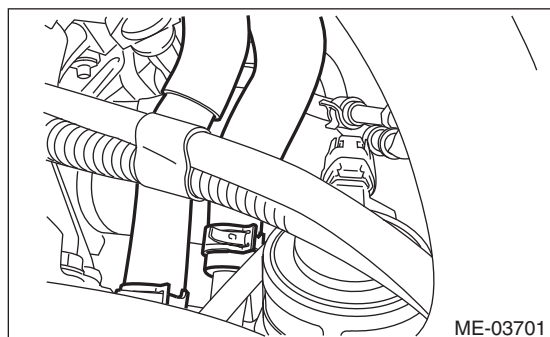


14) Disconnect the following hoses.

(1) Brake booster vacuum hose



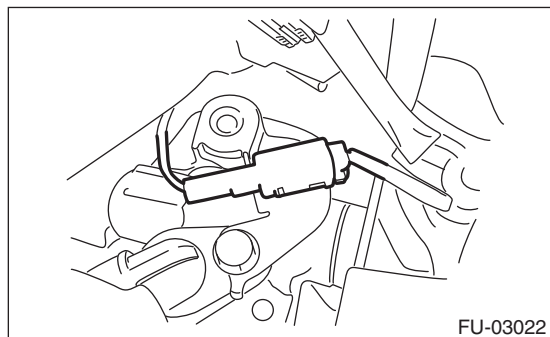
(2) Heater inlet and outlet hoses



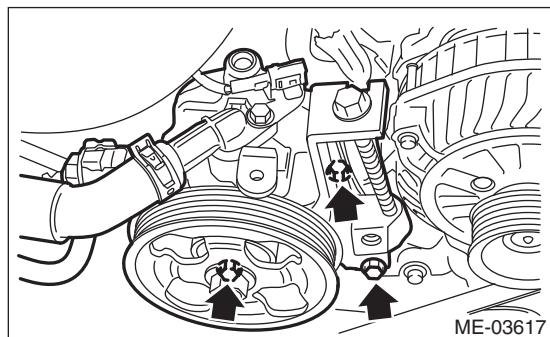
15) Remove the power steering pump.

(1) Remove the front side belts. <Ref. to ME(H4DOTC)-39, FRONT SIDE BELT, REMOVAL, V-belt.>

(2) Disconnect the power steering pump switch connector.



(3) Remove the power steering pump from the engine.



(4) Place the power steering pump on the right side wheel apron.

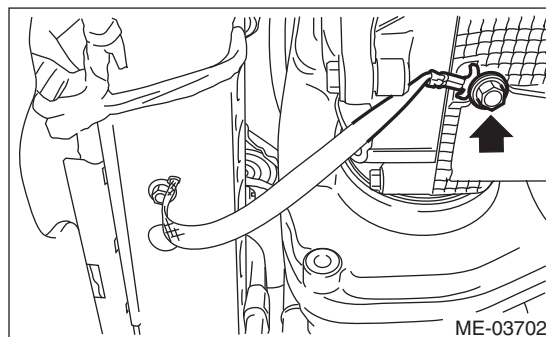
16) Remove the center exhaust pipe. <Ref. to EX(H4DOTC)-7, REMOVAL, Center Exhaust Pipe.>

17) Remove the turbocharger. <Ref. to IN(H4DOTC)-13, REMOVAL, Turbocharger.>

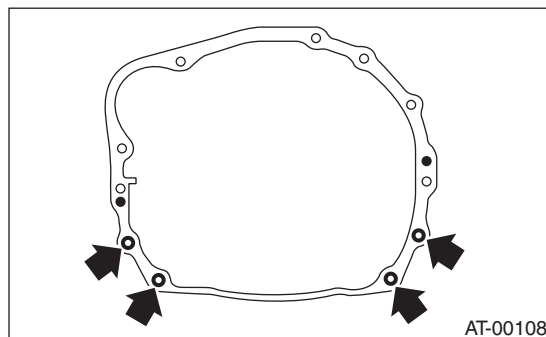
18) Remove the joint pipe and front exhaust pipe. <Ref. to EX(H4DOTC)-11, REMOVAL, Joint Pipe.> <Ref. to EX(H4DOTC)-5, REMOVAL, Front Exhaust Pipe.>

19) Lift up the vehicle.

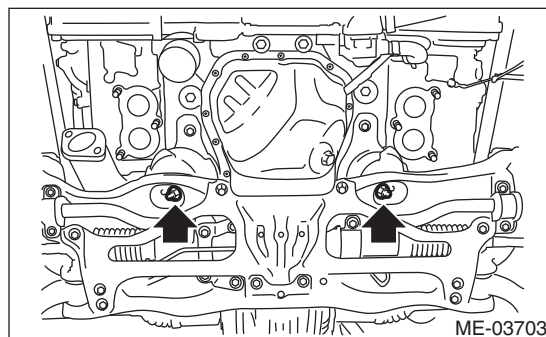
20) Disconnect the ground cable on the engine side.



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



22) Remove the nuts which hold the engine mount to the front crossmember.



23) Separate the torque converter clutch from drive plate.

(1) Lower the vehicle.

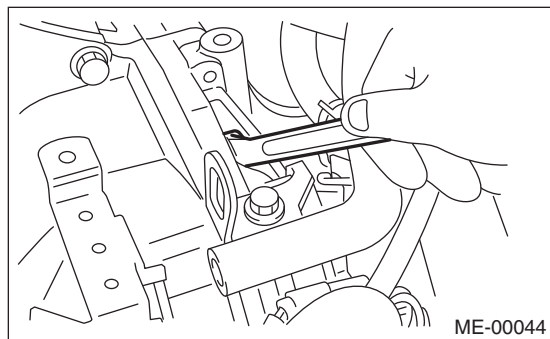
(2) Remove the service hole plug.

(3) Remove the bolts which hold torque converter clutch to drive plate.

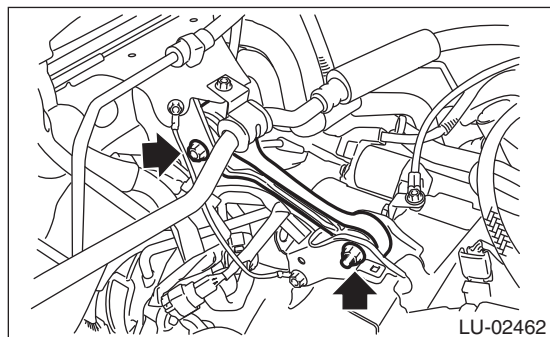
Engine Assembly

MECHANICAL

- (4) Remove other bolts while rotating the crankshaft using socket wrench.



- 24) Remove the pitching stopper.

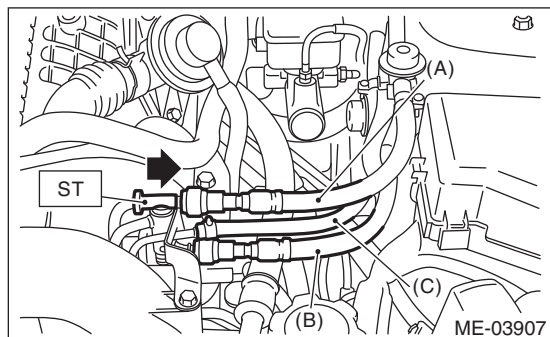


- 25) Attach ST to the fuel delivery pipe and push ST in the direction of arrow mark to disconnect the fuel delivery hose.

ST 42099AE000 QUICK CONNECTOR RELEASE

CAUTION:

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



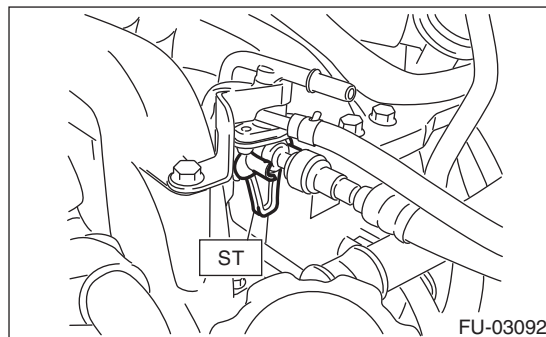
- (A) Fuel delivery hose
(B) Fuel return hose
(C) Evaporation hose

- 26) Disconnect the fuel return hose using the ST.
ST 18371AA000 CONNECTOR REMOVER

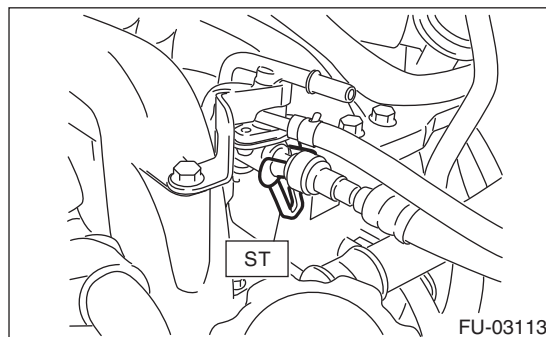
CAUTION:

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

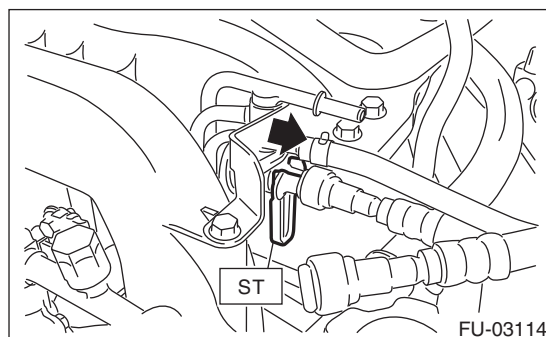
- (1) Attach the ST to the fuel return pipe as shown in the figure.



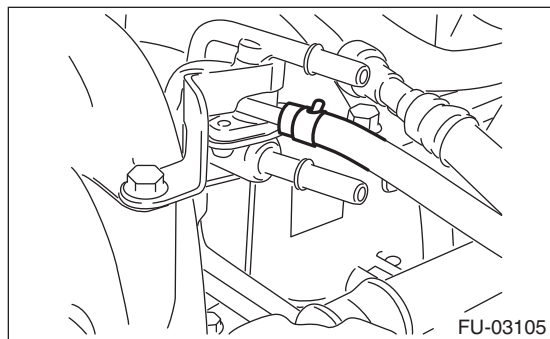
- (2) Insert the front side of ST into the quick connector.



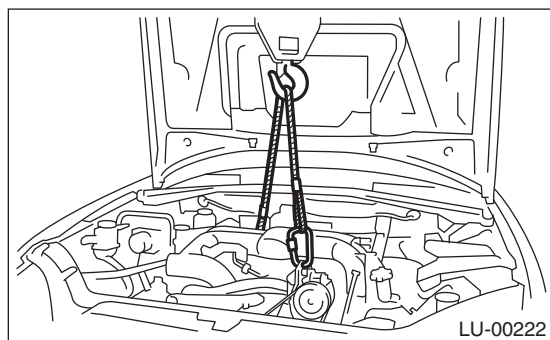
- (3) Insert the back side of ST into the quick connector and push ST in the direction of arrow mark to disconnect the fuel return hose.



27) Remove the clip and disconnect the evaporation hose from the fuel pipe.

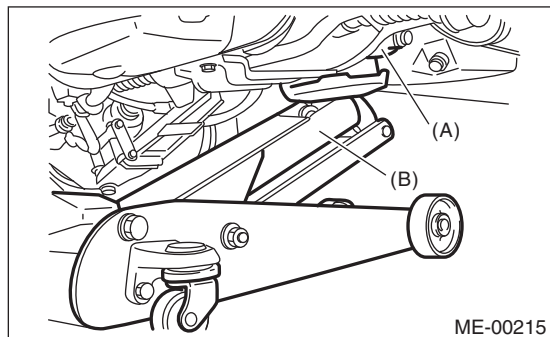


28) Support the engine with a lifting device and wire ropes.



29) Support the transmission with a garage jack.

CAUTION:
Doing this is very important to prevent the transmission from lowering due to its own weight.



- (A) Transmission
- (B) Garage jack

30) Separation of engine and transmission.

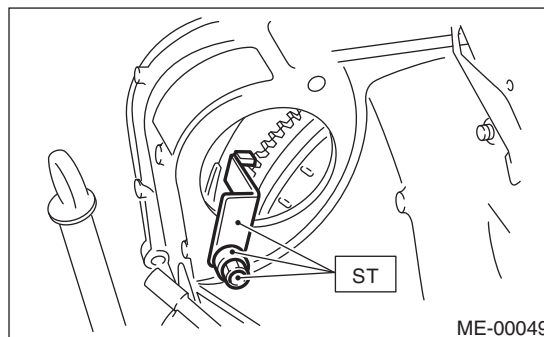
CAUTION:

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

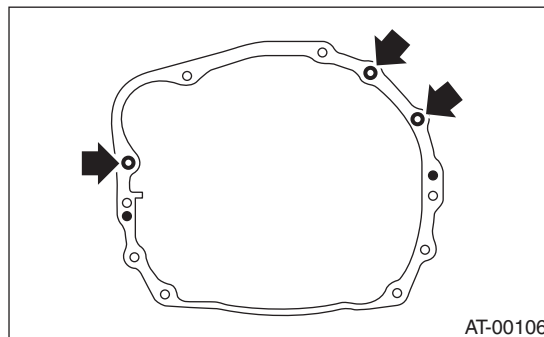
(1) Remove the starter. <Ref. to SC(H4SO)-6, REMOVAL, Starter.>

(2) Set the ST to torque converter clutch case.

ST 498277200 STOPPER SET



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



31) Remove the engine from vehicle.

(1) Slightly raise the engine.

(2) Raise the transmission with garage jack.

(3) 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.

32) Remove the engine mount from the engine.

B: INSTALLATION

- 1) Install the engine mount onto the engine.

Tightening torque:

35 N·m (3.6 kgf-m, 25.8 ft-lb)

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

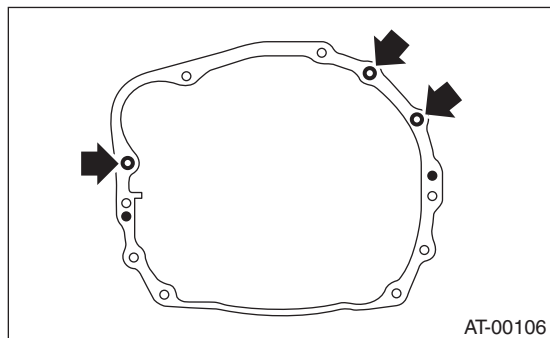
NOTE:

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

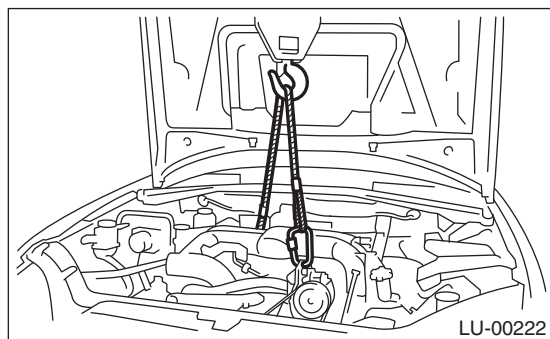
- 3) Tighten the bolts which hold upper side of transmission to engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



- 4) Remove the lifting device and wire ropes.

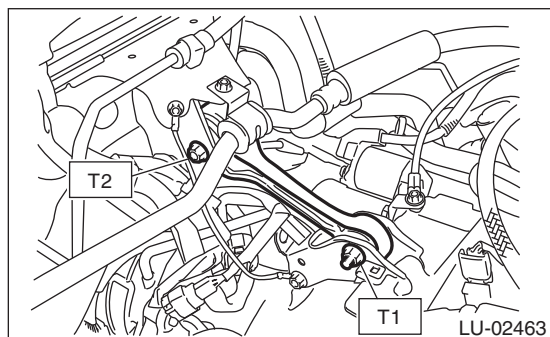


- 5) Remove the garage jack.
- 6) Install the pitching stopper.

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)



- 7) Remove the ST from the torque converter clutch case.

NOTE:

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

ST 498277200 STOPPER SET

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

- 9) Install the torque converter clutch to drive plate.

- (1) Tighten the bolts which hold torque converter clutch to drive plate.

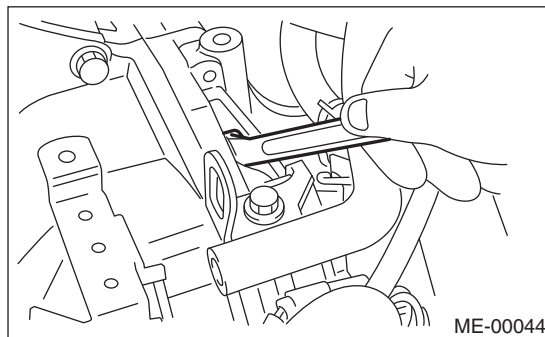
- (2) Tighten other bolts while rotating the crankshaft using socket wrench.

NOTE:

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

Tightening torque:

25 N·m (2.5 kgf-m, 18.4 ft-lb)

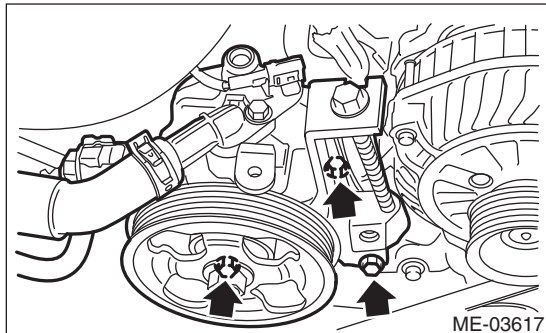


- (3) Fit the plug to service hole.

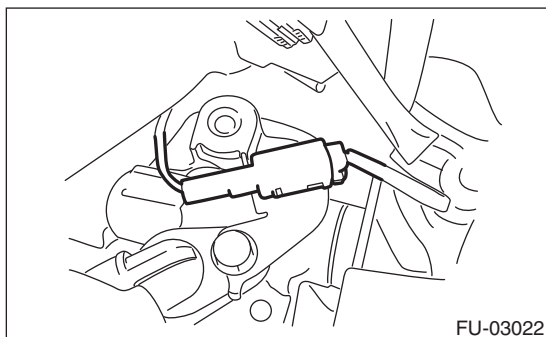
- 10) Install the power steering pump.
- (1) Install the power steering pump.

Tightening torque:

Refer to "COMPONENT" of "Power Steering" for the tightening torque. <Ref. to PS-3, COMPONENT, General Description.>



- (2) Connect the power steering pump switch connector.

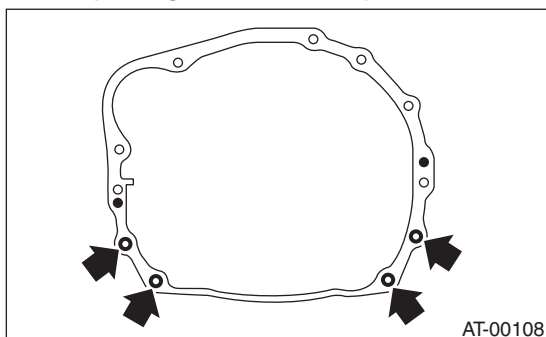


- (3) Install and adjust the front side belt. <Ref. to ME(H4DOTC)-39, FRONT SIDE BELT, INSTALLATION, V-belt.>

- 11) Lift up the vehicle.
- 12) Tighten 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)



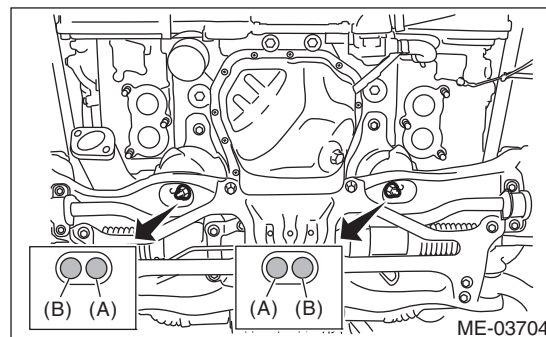
- 13) Tighten the nuts which hold the engine mount to the crossmember.

NOTE:

Make sure that the engine mount nuts (A) and locator (B) are securely installed.

Tightening torque:

85 N·m (8.7 kgf-m, 62.7 ft-lb)



- 14) Install the joint pipe and front exhaust pipe. <Ref. to EX(H4DOTC)-6, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H4DOTC)-11, INSTALLATION, Joint Pipe.>

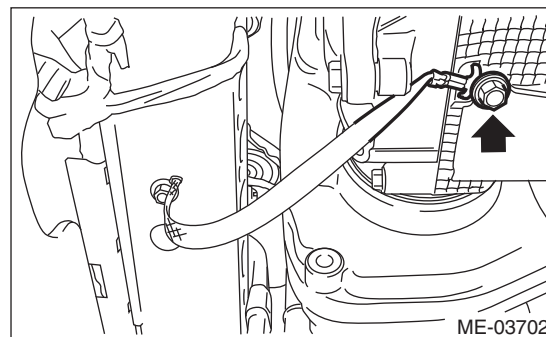
- 15) Attach the turbo charger. <Ref. to IN(H4DOTC)-14, INSTALLATION, Turbocharger.>

- 16) Install the center exhaust pipe. <Ref. to EX(H4DOTC)-8, INSTALLATION, Center Exhaust Pipe.>

- 17) Connect the ground cable.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



- 18) Lower the vehicle.
- 19) Connect the following hoses.
 - (1) Fuel delivery hose, fuel return hose and evaporation hose
 - (2) Heater inlet and outlet hoses
 - (3) Brake booster vacuum hose

20) Connect the following connectors and terminals.

- (1) Engine harness connectors
- (2) Generator connector and terminal

Tightening torque:

15 N·m (1.5 kgf-m, 11.1 ft-lb)

- (3) A/C compressor connector
- (4) Secondary air pump connector

21) Install the intercooler. <Ref. to IN(H4DOTC)-12, INSTALLATION, Intercooler.>

22) Install the A/C pressure hoses. <Ref. to AC-35, INSTALLATION, Hose and Pipe.>

23) Install the radiator. <Ref. to CO(H4DOTC)-20, INSTALLATION, Radiator.>

24) Install the coolant filler tank. <Ref. to CO(H4DOTC)-29, INSTALLATION, Coolant Filler Tank.>

25) Install the air cleaner case and air intake duct. <Ref. to IN(H4DOTC)-8, INSTALLATION, Air Cleaner Case.> <Ref. to IN(H4DOTC)-9, INSTALLATION, Air Intake Duct.>

26) Install the battery to the vehicle, and connect the battery cables.

27) Fill engine coolant. <Ref. to CO(H4DOTC)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

28) Charge the A/C system with refrigerant. <Ref. to AC-18, PROCEDURE, Refrigerant Charging Procedure.>

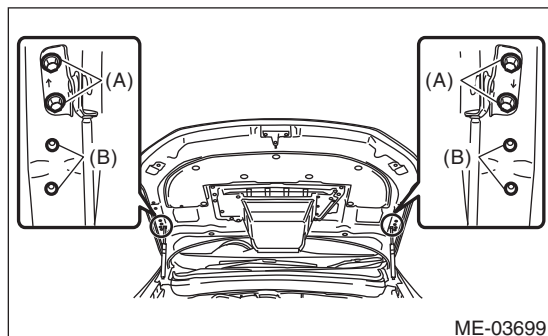
29) Check the ATF level and replenish it if necessary. <Ref. to 4AT-26, INSPECTION, Automatic Transmission Fluid.>

30) Install the collector cover.

31) Change the bolt mounting position from (B) to (A), and close the front hood.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



32) Lower the vehicle from the lift.

C: INSPECTION

1) Check that pipes, hoses, connectors and clamps are installed firmly.

2) Check that the engine coolant is at specified level.

3) Check that the ATF is at specified level.

4) Start the engine and check for exhaust gas, engine coolant, leaks of fuel, etc. Also check for noise and vibrations.