

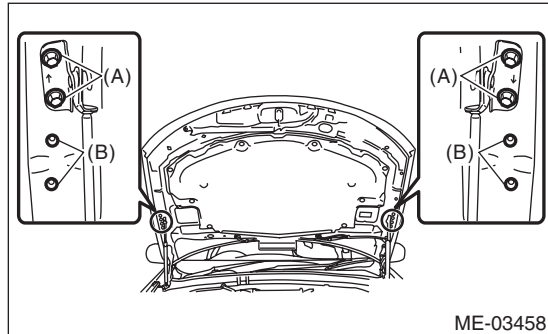
9. Engine Assembly

A: REMOVAL

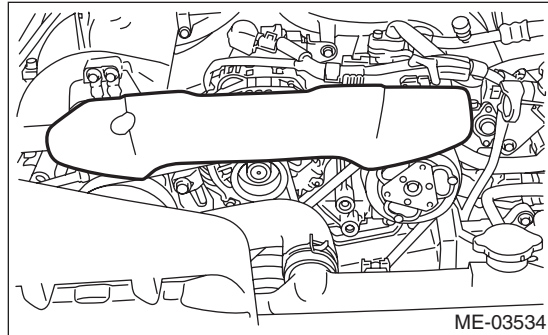
- 1) Set the vehicle on a lift.
- 2) Change the bolt installation position from (A) to (B), then open the front hood completely.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

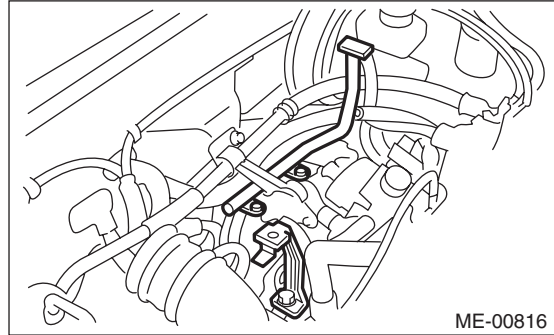


- 3) Remove the V-belt covers.



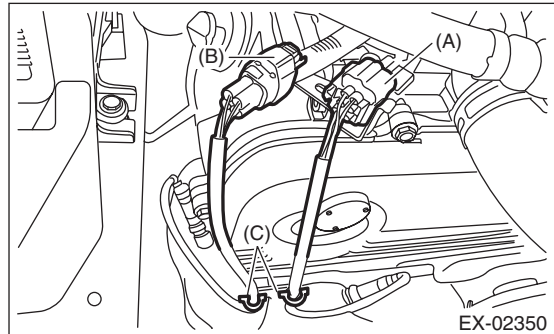
- 4) Collect the refrigerant from A/C system. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 5) Release the fuel pressure. <Ref. to FU(H4SO)-52, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 6) Remove the battery. <Ref. to SC(H4SO)-22, REMOVAL, Battery.>
- 7) Remove the air intake duct, air cleaner case and air intake chamber. <Ref. to IN(H4SO)-8, REMOVAL, Air Intake Duct.> <Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.> <Ref. to IN(H4SO)-7, REMOVAL, Air Intake Chamber.>
- 8) Remove the under cover.
- 9) Remove the radiator from vehicle. <Ref. to CO(H4SO)-19, REMOVAL, Radiator.>
- 10) Disconnect the A/C pressure hoses from A/C compressor. <Ref. to AC-38, REMOVAL, Hose and Pipe.>

- 11) Remove the air intake chamber stay.

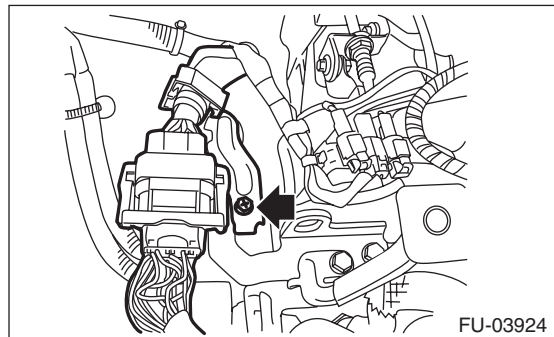


- 12) Disconnect the following connectors and cables.

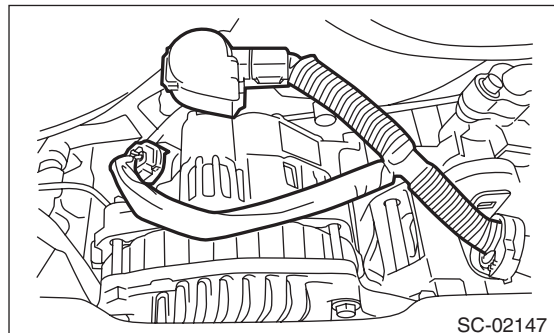
- (1) Disconnect the front oxygen (A/F) sensor connector (A) and rear oxygen sensor connector (B) and remove the clip (C) fastening the harness.



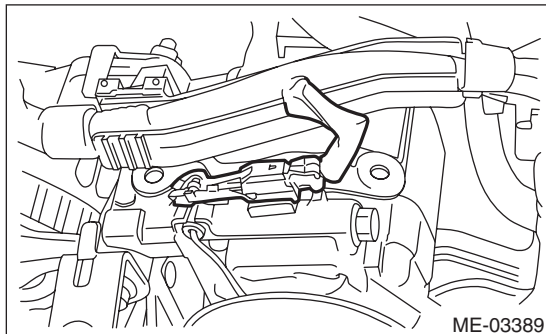
- (2) Remove the bolt, and disconnect the engine harness connector from the bulkhead harness connector and rear engine hanger.



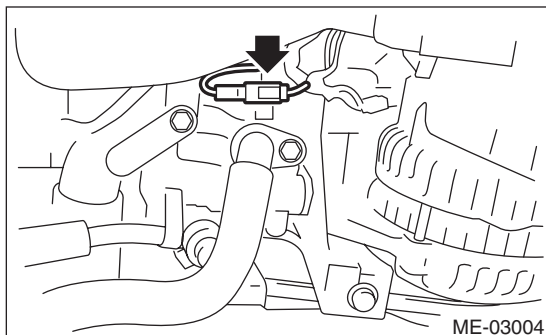
- (3) Generator connector and terminal



(4) A/C compressor connector

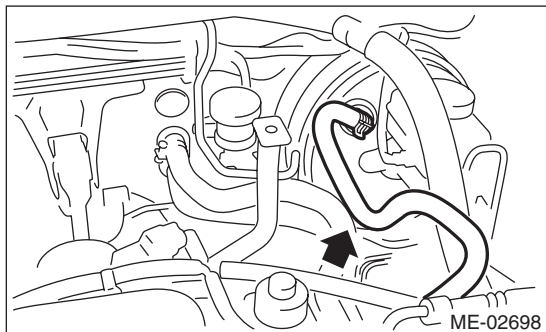


(5) Power steering pump switch connector



13) Disconnect the following hoses.

(1) Brake booster vacuum hose

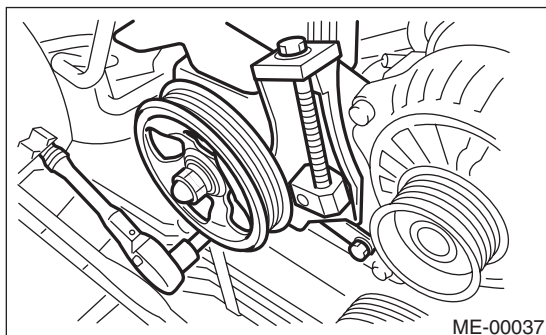


(2) Heater inlet and outlet hoses

14) Remove the power steering pump.

(1) Remove the front side belts. <Ref. to ME(H4SO)-39, FRONT SIDE BELT, REMOVAL, V-belt.>

(2) Remove the bolts which secure the power steering pump to the bracket.

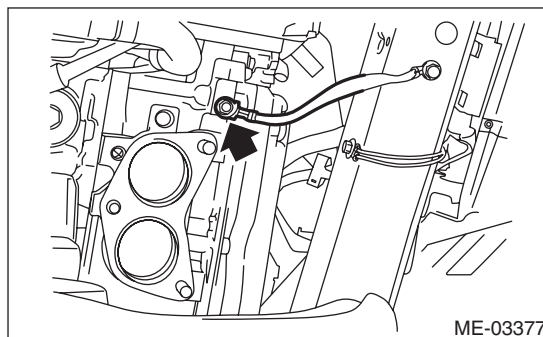
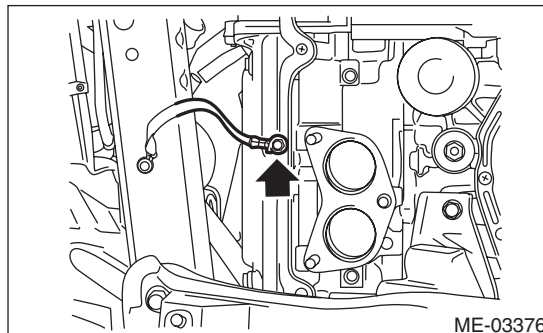


(3) Place the power steering pump on the right side wheel apron.

15) Lift up the vehicle.

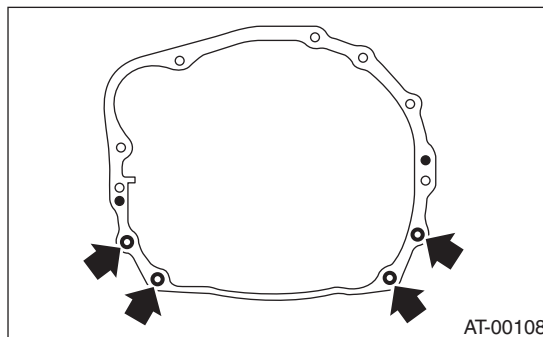
16) Remove the front and center exhaust pipes. <Ref. to EX(H4SO)-6, REMOVAL, Front Exhaust Pipe.>

17) Disconnect the ground cable on the engine side.

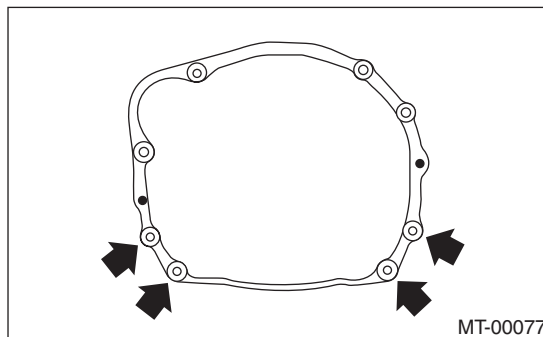


18) Remove the bolts and nuts which hold the lower side of transmission to the engine.

• AT model



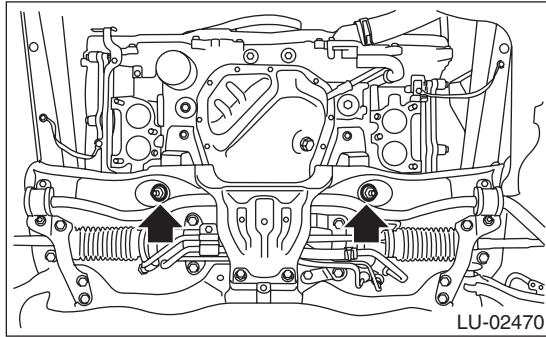
• MT model



Engine Assembly

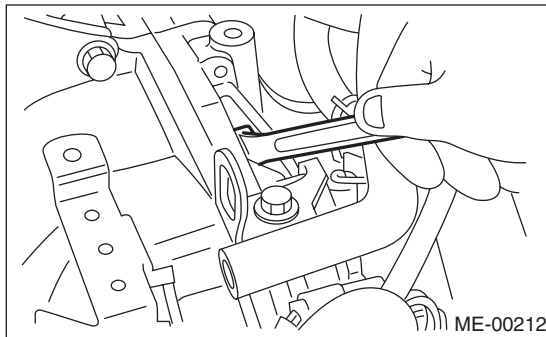
MECHANICAL

19) Remove the nuts which secure the engine mounting to the front crossmember.

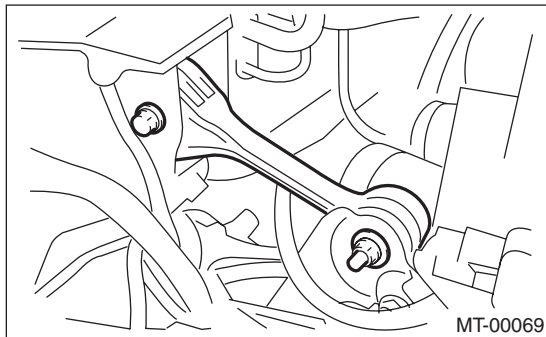


20) Separate the torque converter clutch from the drive plate. (AT model)

- (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.



21) Remove the pitching stopper.



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

- (1) Disconnect the quick connector of the fuel delivery hose by pushing the ST in the direction of the arrow.

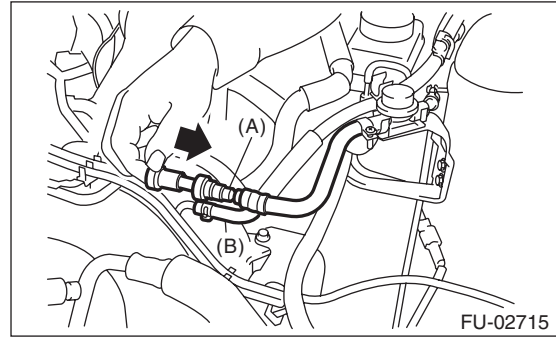
ST 42099AE000 QUICK CONNECTOR RELEASE

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

CAUTION:

- Be careful not to spill fuel.

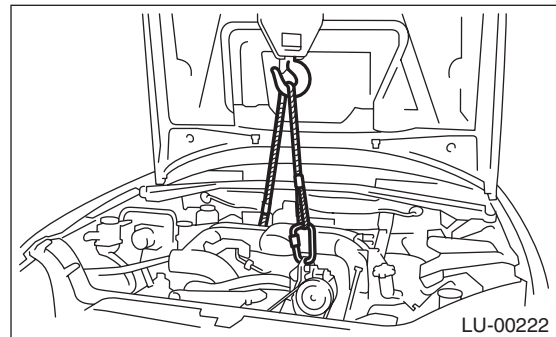
- Catch the fuel from hoses using a container or cloth.



(A) Fuel delivery hose

(B) Evaporation hose

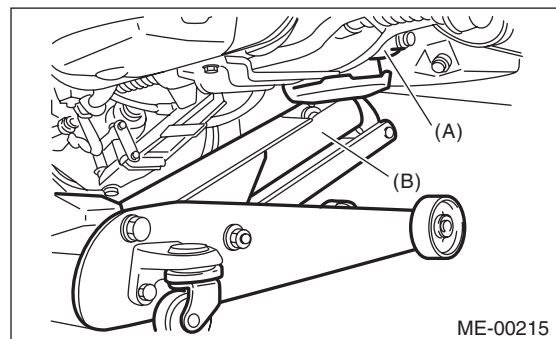
23) Support the engine with a lifting device and wire ropes.



24) Support the transmission with a garage jack.

CAUTION:

Be sure to always perform this work, in order to prevent the transmission from lowering for its own weight.



(A) Transmission

(B) Garage jack

25) Separation of engine and transmission

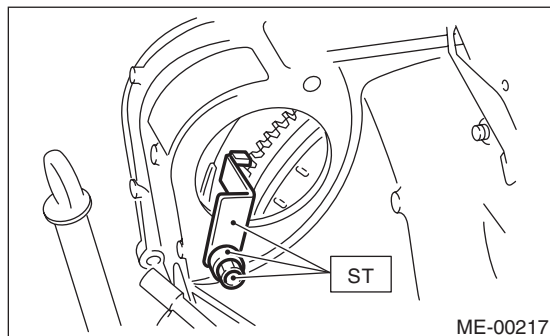
CAUTION:

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

- (1) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>

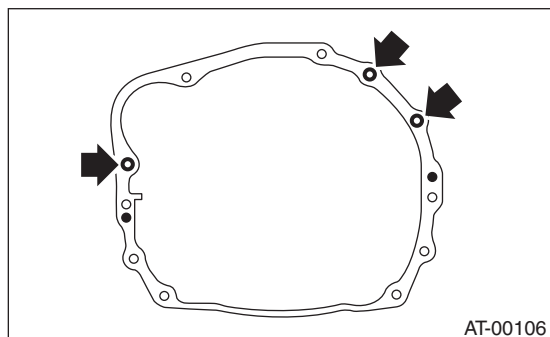
- (2) Attach the ST to the torque converter clutch case. (AT model)

ST 498277200 STOPPER SET

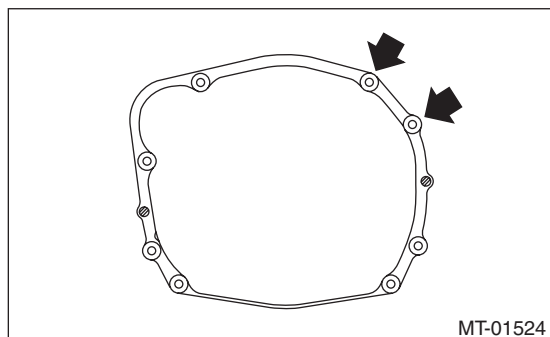


- (3) Remove the bolts which hold upper side of transmission to engine.

- AT model



- MT model



- 26) Remove the engine from vehicle.

- (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.

NOTE:

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

- 27) 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:

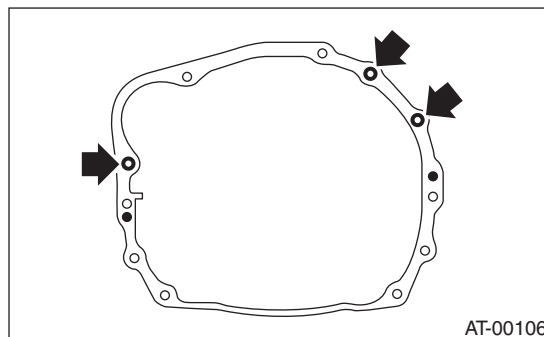
Be careful not to damage adjacent parts or body panels with crank pulley, oil level gauge, etc.

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

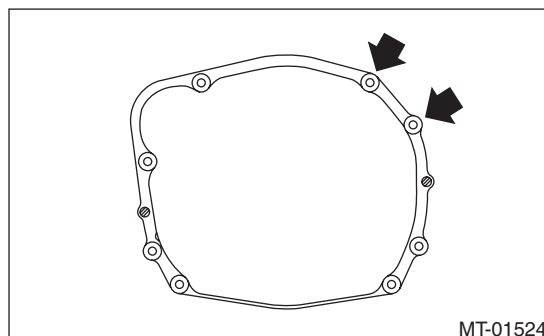
Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

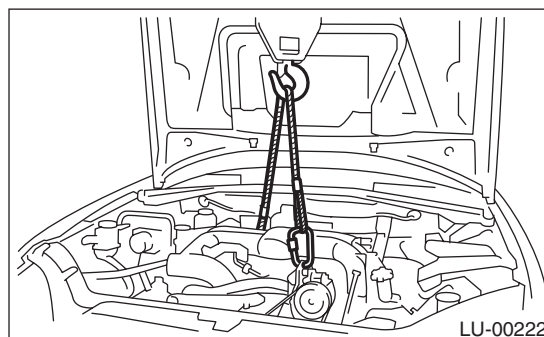
- AT model



- MT model



- 5) Remove the lifting device and wire ropes.



- 6) Remove the garage jack.

Engine Assembly

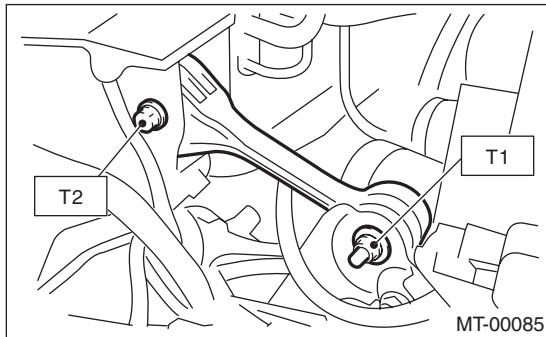
MECHANICAL

7) 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)

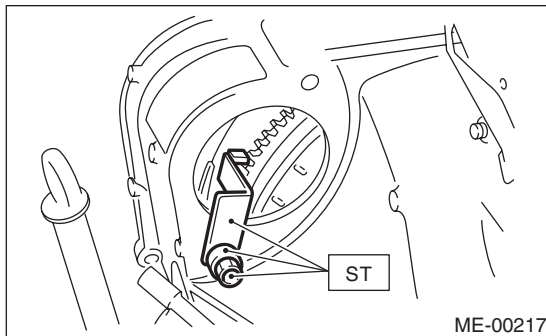


8) Remove the ST from torque converter clutch case. (AT model)

NOTE:

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

ST 498277200 STOPPER SET



9) Install the starter. <Ref. to SC(H4SO)-7, INSTALLATION, Starter.>

10) Install the torque converter clutch to drive plate. (AT model)

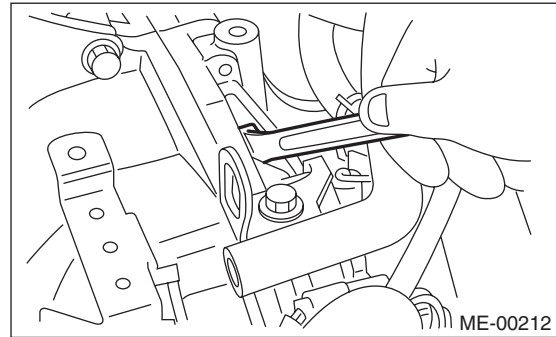
(1) Insert the wrench into the crank pulley bolt and rotate the crank pulley to install the bolts which hold torque converter clutch to drive plate.

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)



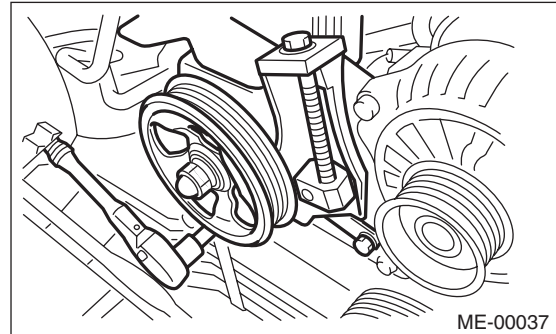
(2) Install the service hole plug.

11) Install the power steering pump.

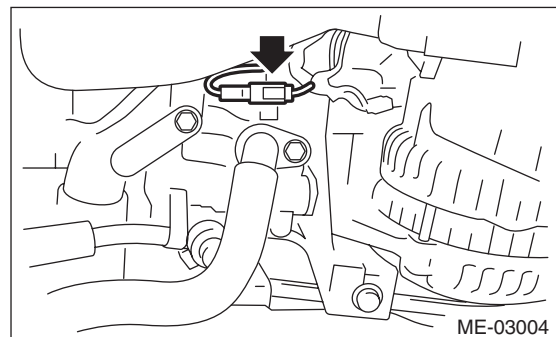
(1) Install the power steering pump.

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(H4SO)-39, FRONT SIDE BELT, INSTALLATION, V-belt.>

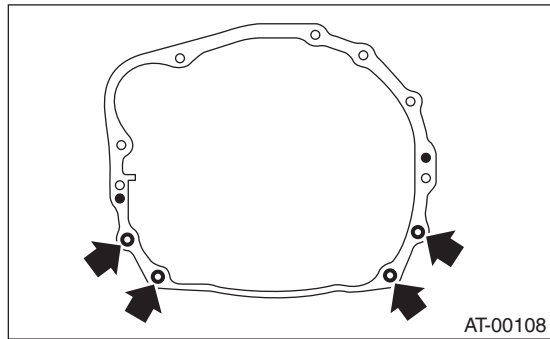
12) Lift up the vehicle.

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

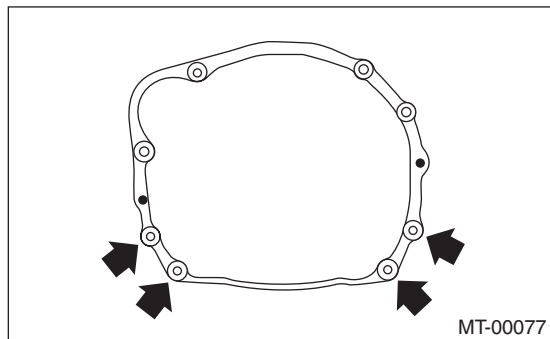
Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

- AT model



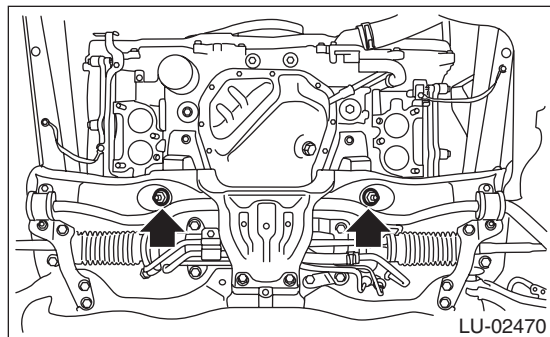
- MT model



14) Install the nuts which hold the engine mounting to the crossmember.

Tightening torque:

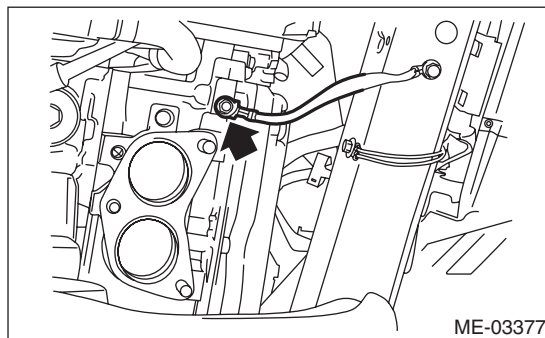
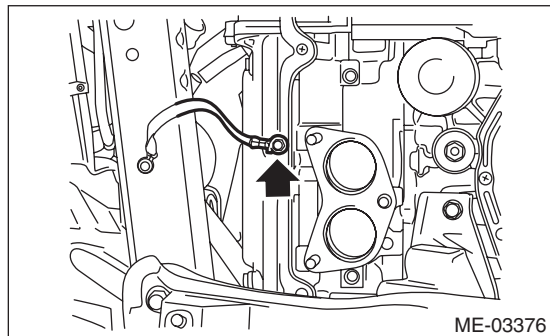
85 N·m (8.7 kgf-m, 62.7 ft-lb)



15) Connect the ground cable.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



16) Install the front and center exhaust pipe. <Ref. to EX(H4SO)-7, INSTALLATION, Front Exhaust Pipe.>

17) Lower the vehicle.

18) Connect the following hoses.

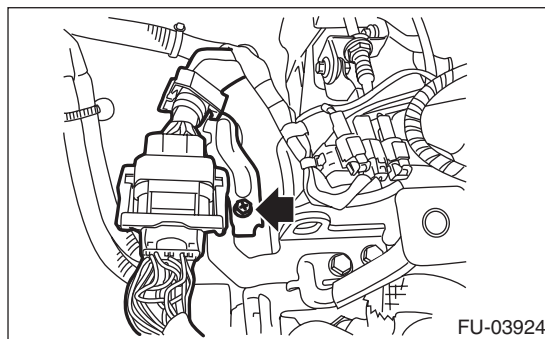
- (1) Fuel delivery hose and evaporation hose
- (2) Heater inlet and outlet hoses
- (3) Brake booster vacuum hose

19) Connect the following connectors and terminals.

- (1) Front oxygen (A/F) sensor connector
- (2) Rear oxygen sensor connector
- (3) Engine harness connectors

Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



(4) Generator connector and terminal

Tightening torque:

15 N·m (1.5 kgf-m, 11.1 ft-lb)

(5) A/C compressor connector

20) Install the air intake chamber stay.

Tightening torque:

16 N·m (1.6 kgf-m, 11.8 ft-lb)

21) Install the A/C pressure hoses. <Ref. to AC-38, INSTALLATION, Hose and Pipe.>

22) Install the radiator to vehicle. <Ref. to CO(H4SO)-20, INSTALLATION, Radiator.>

23) Install the air intake duct, air cleaner case and air intake chamber. <Ref. to IN(H4SO)-8, INSTALLATION, Air Intake Duct.> <Ref. to IN(H4SO)-5, INSTALLATION, Air Cleaner Case.> <Ref. to IN(H4SO)-7, INSTALLATION, Air Intake Chamber.>

24) Install the under cover.

25) Install the battery. <Ref. to SC(H4SO)-22, INSTALLATION, Battery.>

26) Fill engine coolant. <Ref. to CO(H4SO)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

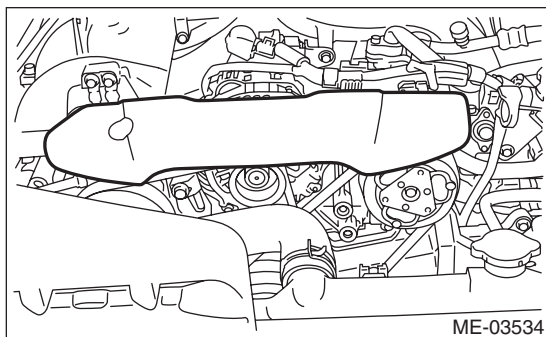
27) Check the ATF level and replenish it if necessary. (AT model) <Ref. to 4AT-26, INSPECTION, Automatic Transmission Fluid.>

28) Charge the A/C system with refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

29) Install the V-belt cover.

Tightening torque:

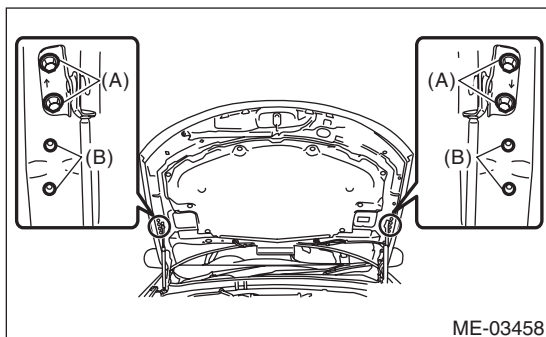
13 N·m (1.3 kgf-m, 9.6 ft-lb)



30) Change the bolt installation position from (B) to (A), then close the front hood.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



C: INSPECTION

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

2) Check the engine coolant is at specified level.

3) Check that the ATF is at specified level. (AT model)

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