

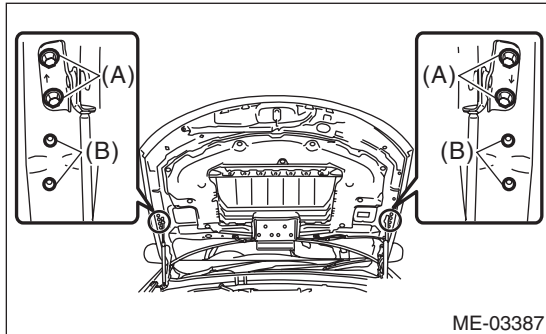
9. Engine Assembly

A: REMOVAL

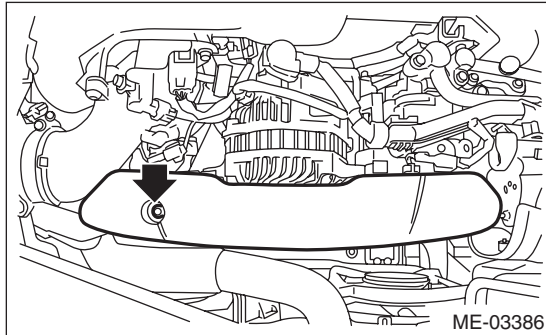
- 1) Set the vehicle on a lift.
- 2) Change the bolt installation position from (A) to (B), then open the front hood completely.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

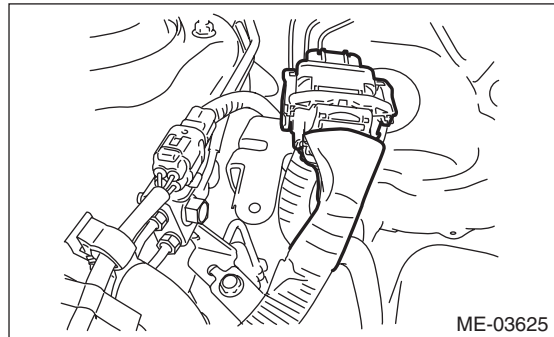


- 3) Remove the V-belt covers.

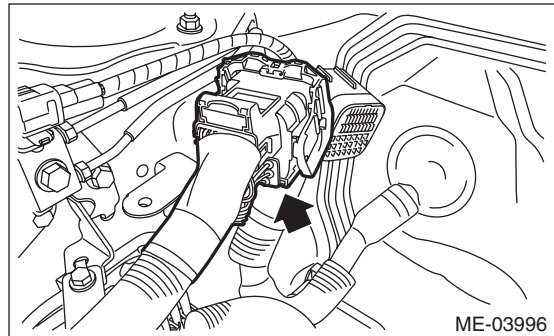


- 4) Collect the refrigerant from A/C system. <Ref. to AC-20, Refrigerant Recovery Procedure.>
- 5) Release the fuel pressure. <Ref. to FU(H4DOTC)-59, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 6) Remove the battery. <Ref. to SC(H4SO)-22, REMOVAL, Battery.>
- 7) Open the fuel filler lid and remove the fuel filler cap.
- 8) Remove the air intake duct and air cleaner case. <Ref. to IN(H4DOTC)-11, REMOVAL, Air Intake Duct.> <Ref. to IN(H4DOTC)-9, REMOVAL, Air Cleaner Case.>
- 9) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>
- 10) Remove the radiator. <Ref. to CO(H4DOTC)-20, 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 A/C compressor. <Ref. to AC-38, REMOVAL, Hose and Pipe.>

- 13) Disconnect the bulkhead harness connectors from the engine harness connectors.

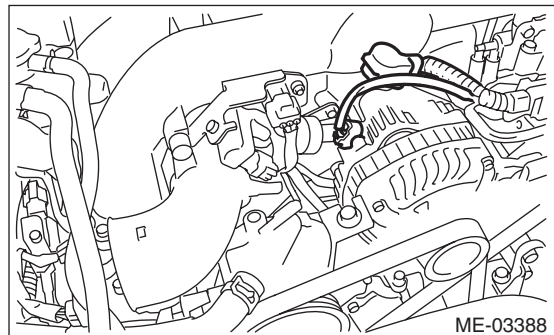


- 14) Remove the engine harness connector from the engine harness bracket.

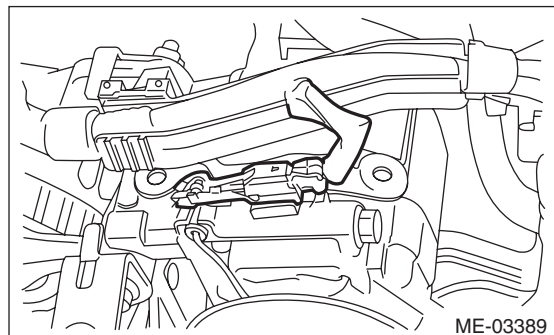


- 15) Disconnect the following connectors and terminals.

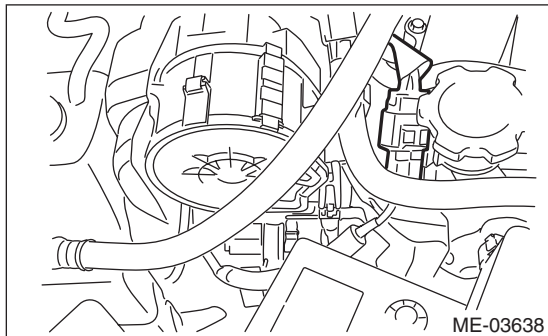
- (1) Generator connector and terminal



- (2) A/C compressor connector

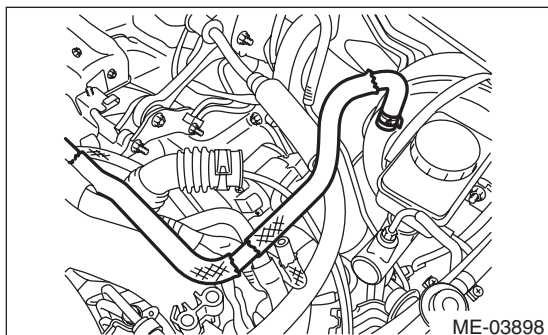


(3) Secondary air pump connector

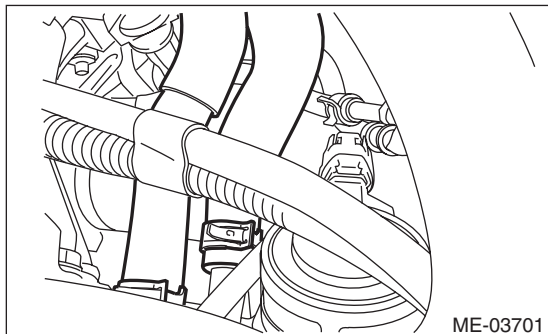


16) Disconnect the following hoses.

(1) Brake booster vacuum hose



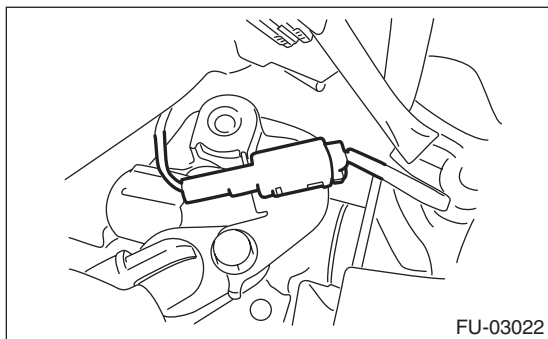
(2) Heater inlet and outlet hoses



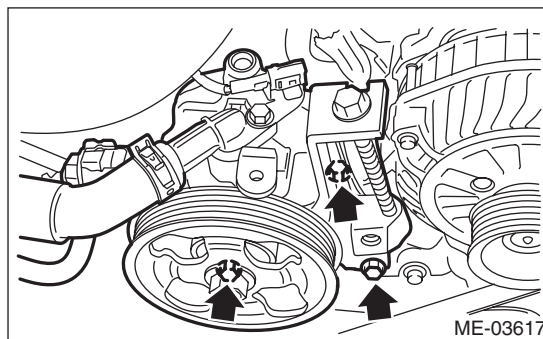
17) Remove the power steering pump.

(1) Remove the front side belts. <Ref. to ME(H4DOTC)-40, FRONT SIDE BELT, REMOVAL, V-belt.>

(2) Disconnect the power steering pump switch connector.



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



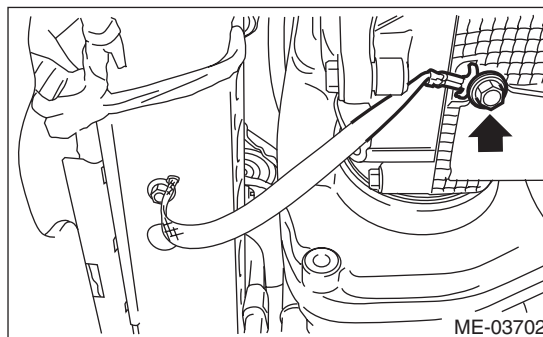
(4) Place the power steering pump on the right side wheel apron.

18) Remove the center exhaust pipe. <Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.>

19) Remove the turbocharger. <Ref. to IN(H4DOTC)-15, REMOVAL, Turbocharger.>

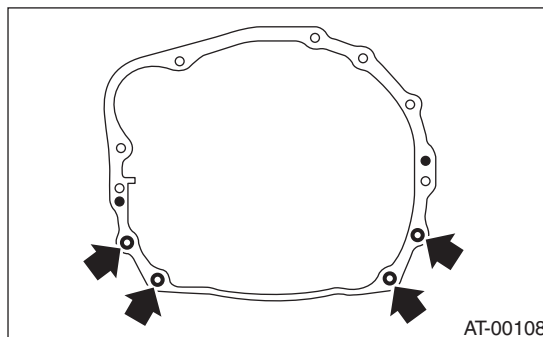
20) Remove the joint pipe and front exhaust pipe. <Ref. to EX(H4DOTC)-13, REMOVAL, Joint Pipe.> <Ref. to EX(H4DOTC)-7, REMOVAL, Front Exhaust Pipe.>

21) Disconnect the ground cable on the engine side.



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

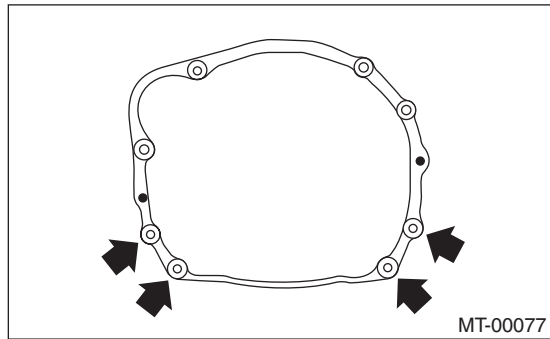
- AT model



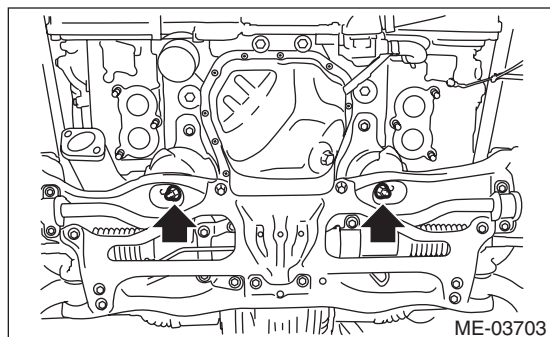
Engine Assembly

MECHANICAL

- MT model



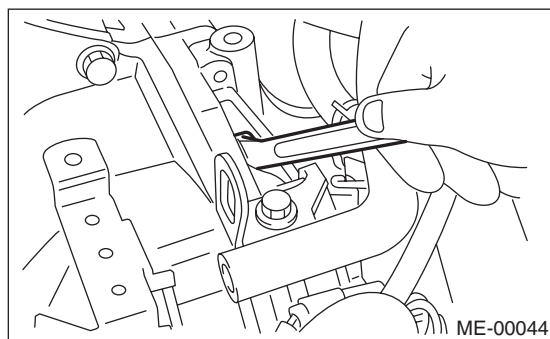
23) Remove the nuts which secure the engine mounting to the front crossmember.



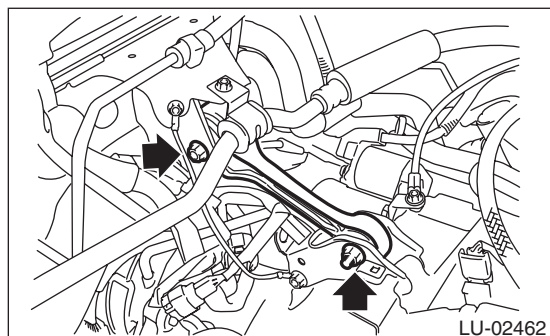
24) Lower the vehicle.

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

- (1) Remove the service hole plug.
- (2) 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.



26) Remove the pitching stopper.

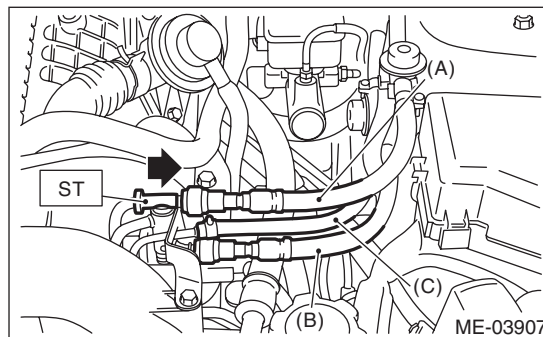


27) Attach ST to the fuel delivery pipe and push ST in the direction of arrow mark to disconnect the fuel delivery hose.

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

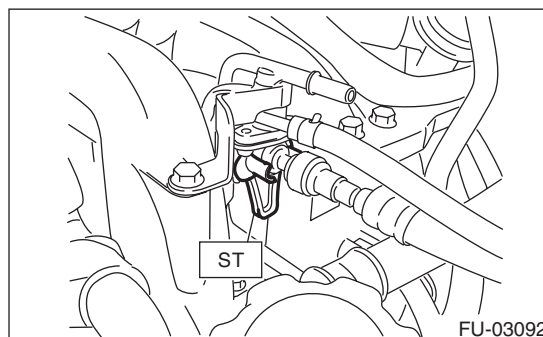
(C) Evaporation hose

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

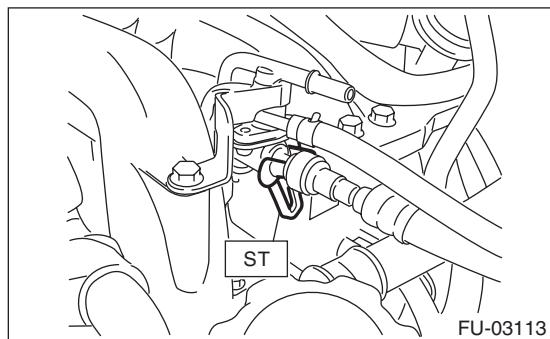
CAUTION:

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

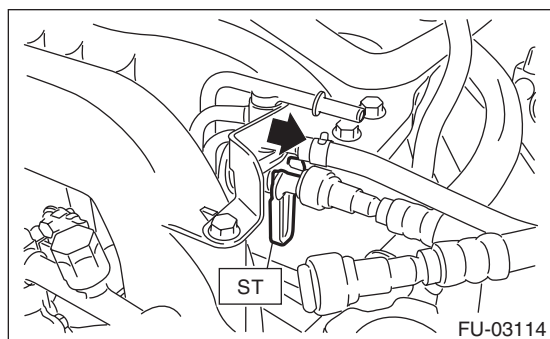
(1) Attach ST to the fuel return pipe as shown in the figure.



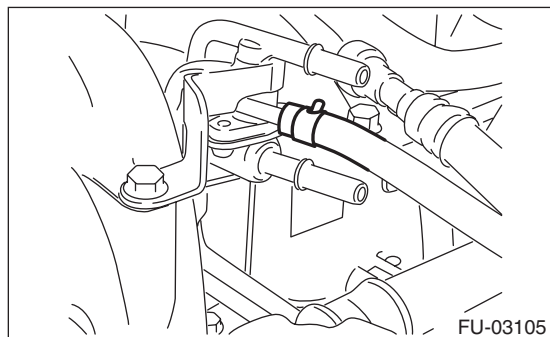
(2) Insert the front side of ST into the quick connector.



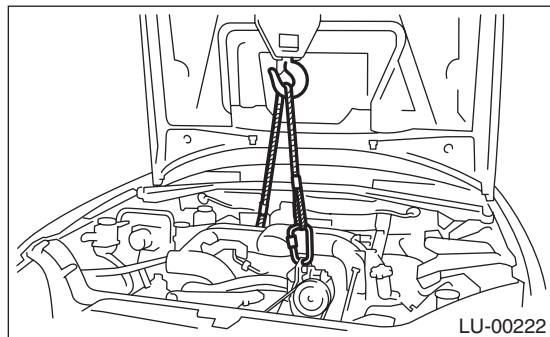
(3) Insert the back side of ST into the quick connector and push ST in the direction of arrow mark to disconnect the fuel return hose.



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



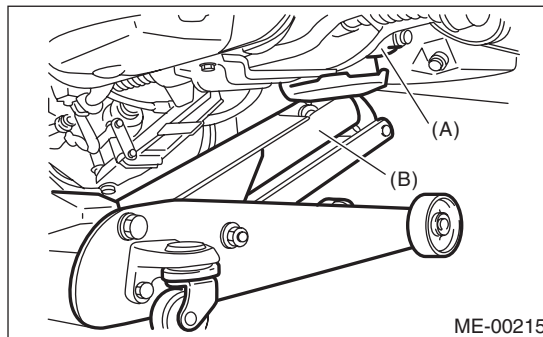
30) Support the engine with a lifting device and wire ropes.



31) Support the transmission with a garage jack.

CAUTION:

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



- (A) Transmission
- (B) Garage jack

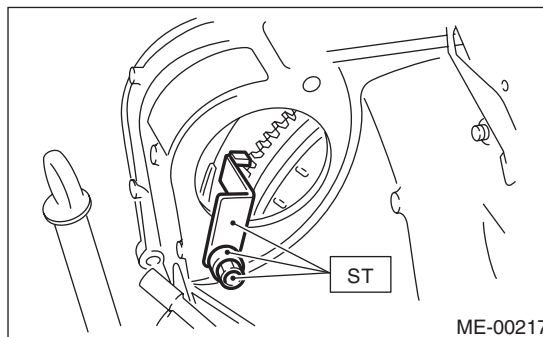
32) Separation of engine and transmission

CAUTION:

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

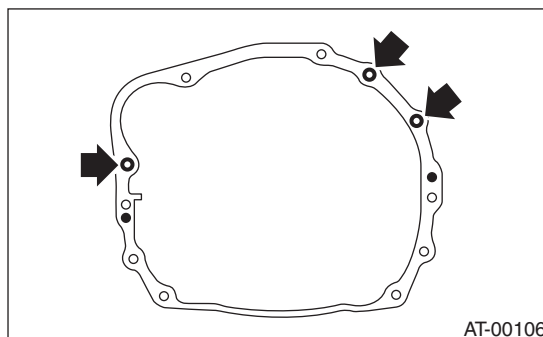
- (1) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>
- (2) Attach the ST to the torque converter clutch case. (AT model)

ST 498277200 STOPPER SET



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

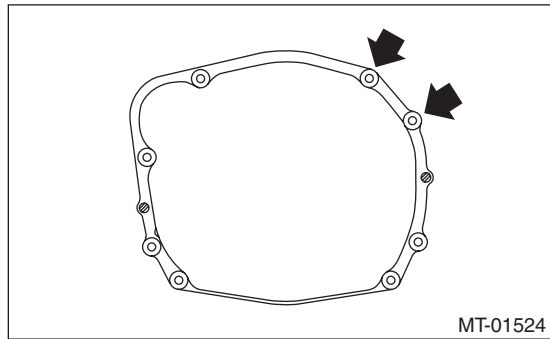
- AT model



Engine Assembly

MECHANICAL

- MT model



33) 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.

34) 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:

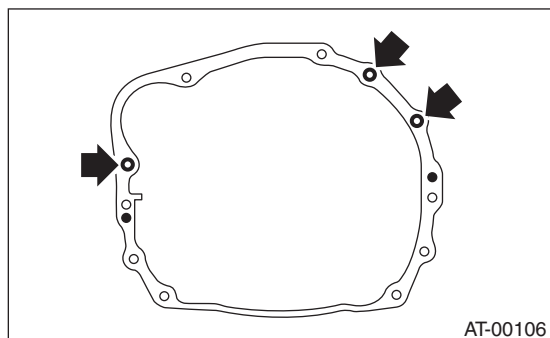
Be careful not to damage adjacent parts or body panels with crank pulley, oil level gauge, etc.

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

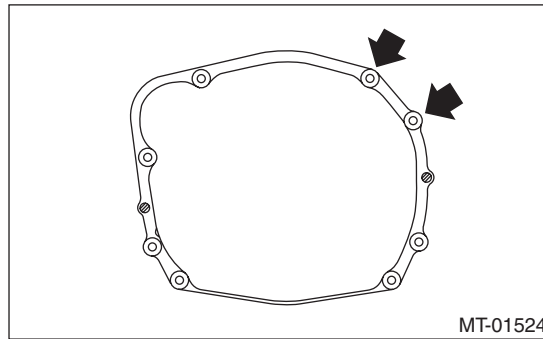
Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

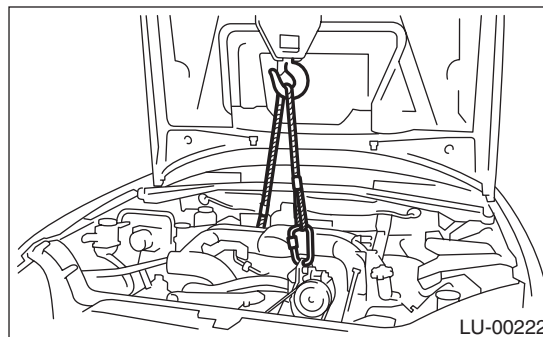
- AT model



- MT model



5) Remove the lifting device and wire ropes.



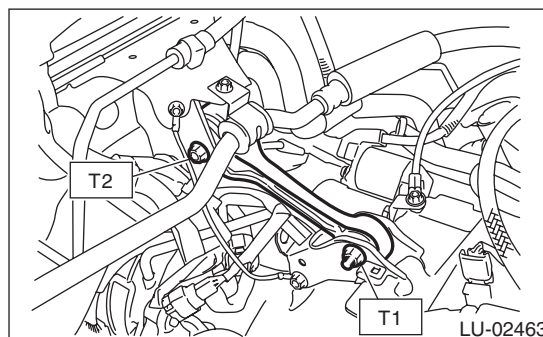
6) Remove the garage jack.

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)

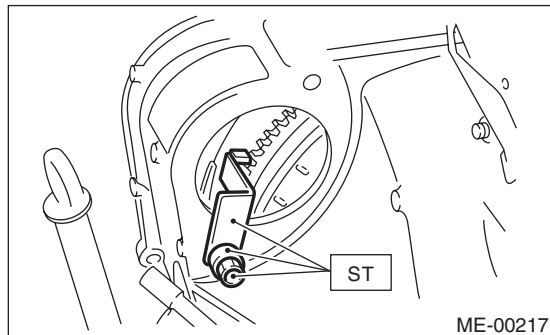


8) Remove the ST from torque converter clutch case. (AT model)

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)

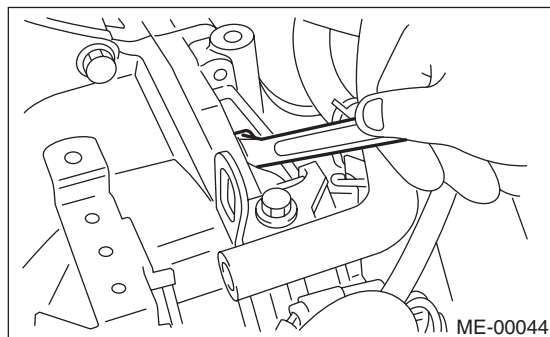
(1) Insert the wrench into the crank pulley bolt and rotate the crank pulley to install the bolts which hold torque converter clutch to drive plate.

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)



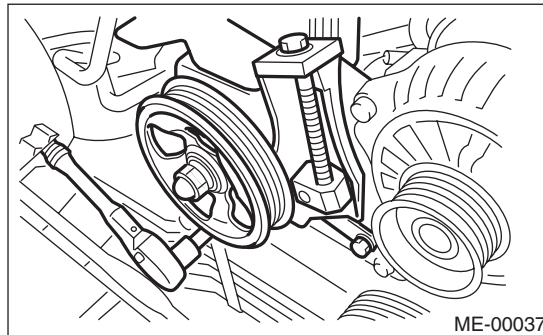
(2) Fit the plug to service hole.

11) Install the power steering pump.

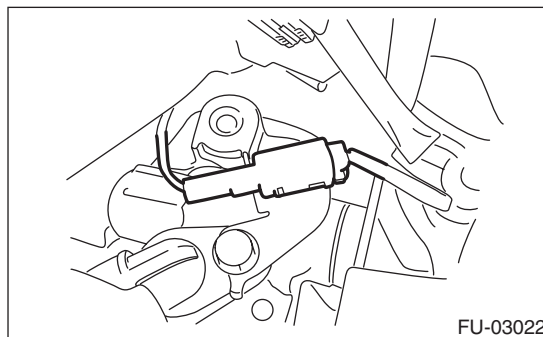
(1) Install the power steering pump onto the engine.

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)-40, FRONT SIDE BELT, INSTALLATION, V-belt.>

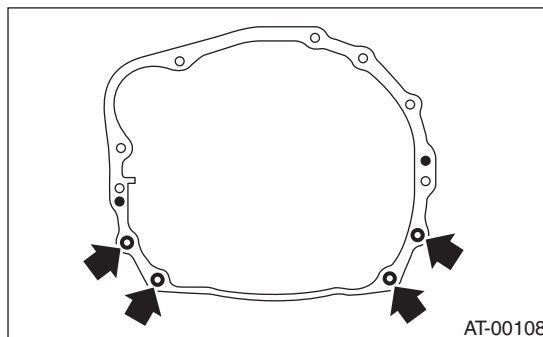
12) Lift up the vehicle.

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)

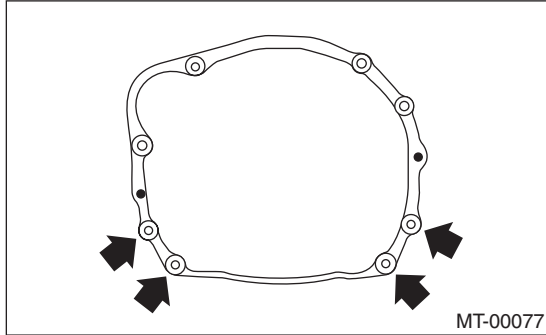
• AT model



Engine Assembly

MECHANICAL

- MT model



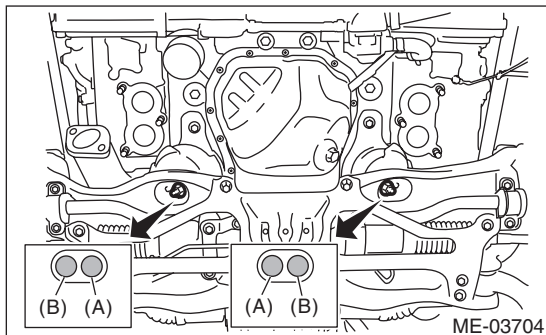
14) Install the nuts which hold the engine mounting to the crossmember.

NOTE:

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

Tightening torque:

85 N·m (8.7 kgf-m, 62.7 ft-lb)



15) Install the joint pipe and front exhaust pipe. <Ref. to EX(H4DOTC)-8, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H4DOTC)-13, INSTALLATION, Joint Pipe.>

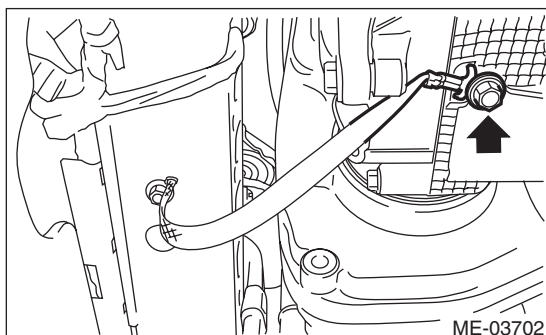
16) Install the turbocharger. <Ref. to IN(H4DOTC)-16, INSTALLATION, Turbocharger.>

17) Install the center exhaust pipe. <Ref. to EX(H4DOTC)-10, INSTALLATION, Center Exhaust Pipe.>

18) Connect the ground cable.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



19) Lower the vehicle.

20) 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

21) Connect the following connectors and terminals.

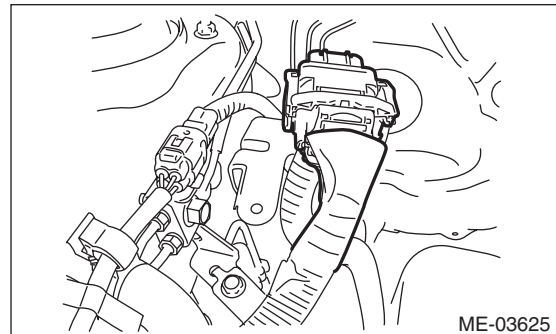
- (1) Generator connector and terminal

Tightening torque:

15 N·m (1.5 kgf-m, 11.1 ft-lb)

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

22) Install the engine harness connector to engine harness bracket, then connect the bulkhead harness connector to the engine harness connector.



23) Install the intercooler. <Ref. to IN(H4DOTC)-13, INSTALLATION, Intercooler.>

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

25) Install the radiator. <Ref. to CO(H4DOTC)-21, INSTALLATION, Radiator.>

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

27) Install the air cleaner case and air intake duct. <Ref. to IN(H4DOTC)-9, INSTALLATION, Air Cleaner Case.> <Ref. to IN(H4DOTC)-11, INSTALLATION, Air Intake Duct.>

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

29) Fill engine coolant. <Ref. to CO(H4DOTC)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

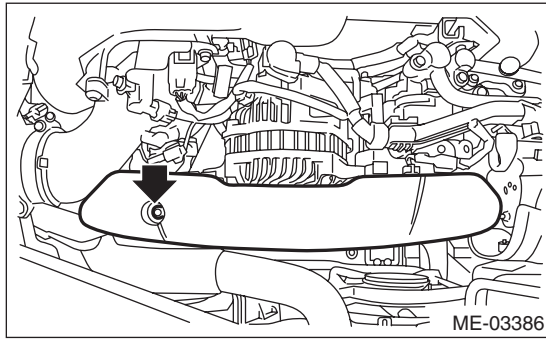
30) Charge the A/C system with refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

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

32) Install the V-belt cover.

Tightening torque:

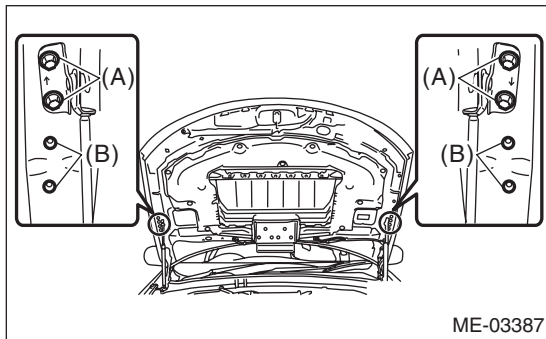
13 N·m (1.3 kgf-m, 9.6 ft-lb)



33) 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.