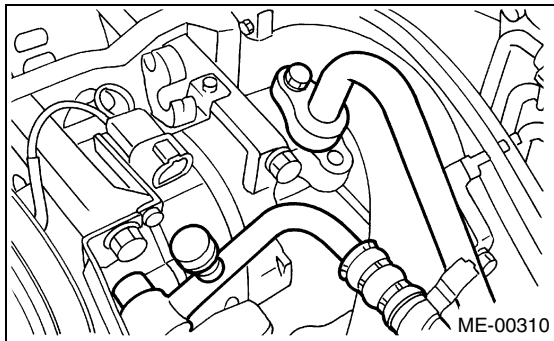


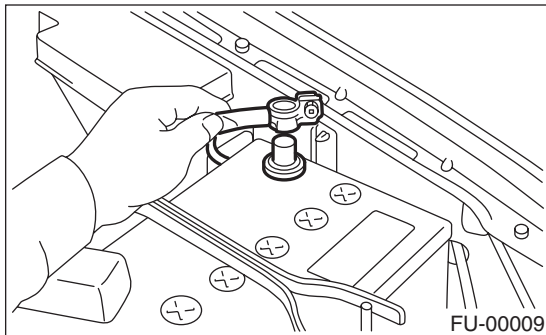
9. Engine Assembly

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Open the front hood fully, and then support with the hood stay.
- 3) Lower the fuel pressure. <Ref. to FU(H4SO)-51, RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
- 4) Collect the refrigerant, and then remove the pressure hoses.
 - (1) Place and connect the attachment hose to refrigerant recycle system.
 - (2) Collect the refrigerant from A/C system.
 - (3) Disconnect the A/C pressure hoses from A/C compressor.

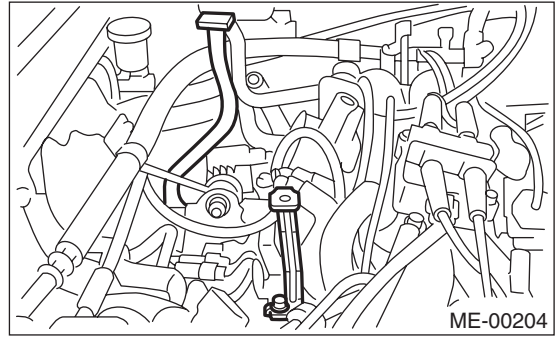


- 5) Remove the fuel filler cap.
- 6) Disconnect the ground cable from battery.

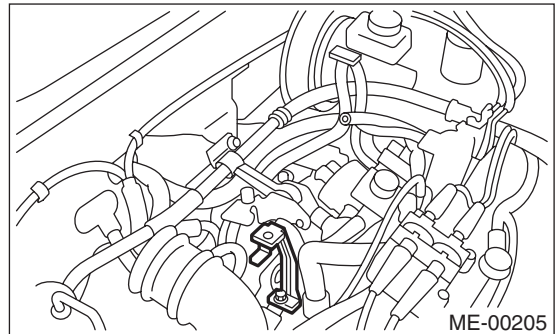


- 7) Remove the air intake duct and air cleaner case. <Ref. to IN(H4SO)-7, REMOVAL, Air Intake Duct.> A <Ref. to IN(H4SO)-6, REMOVAL, Air Cleaner Case.>
- 8) Remove the under cover.
- 9) Remove the radiator from vehicle. <Ref. to CO(H4SO)-38, REMOVAL, Radiator.>

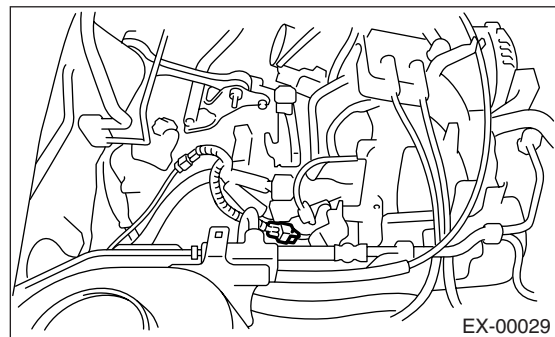
- 10) Remove the air cleaner case stay.
 - MT model



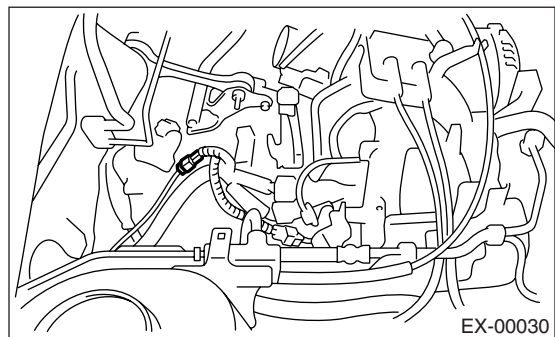
- AT model



- 11) Disconnect the following connectors and cables.
 - (1) Front oxygen (A/F) sensor connector



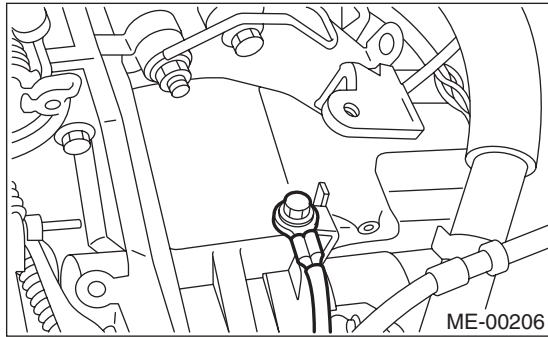
- (2) Rear oxygen sensor connector



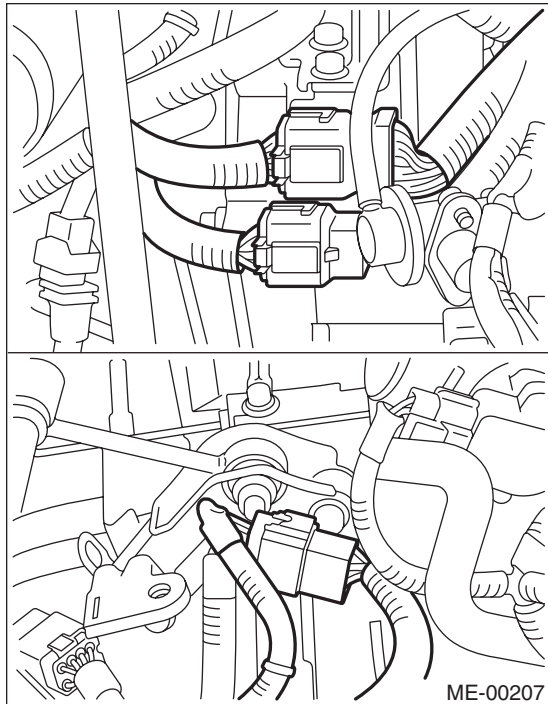
ENGINE ASSEMBLY

MECHANICAL

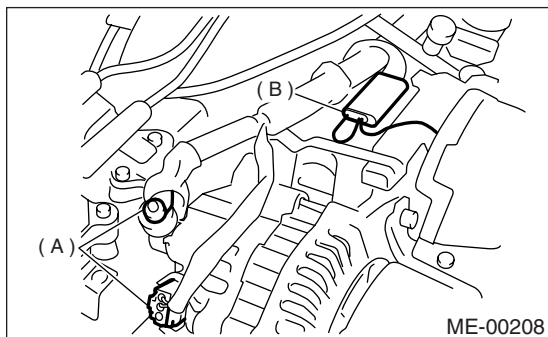
(3) Engine ground cable



(4) Engine harness connectors

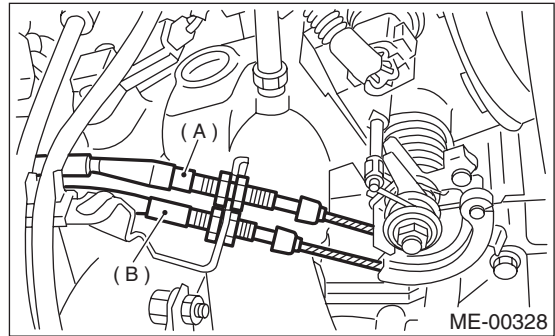


(5) Generator connector, terminal and A/C compressor connector

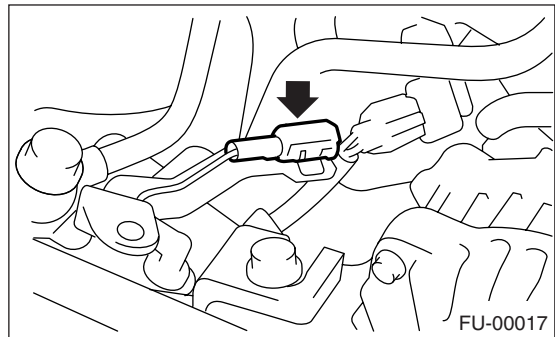


- (A) Generator connector and terminal
- (B) A/C compressor connector

(6) Accelerator cable (A) and cruise control cable (B)

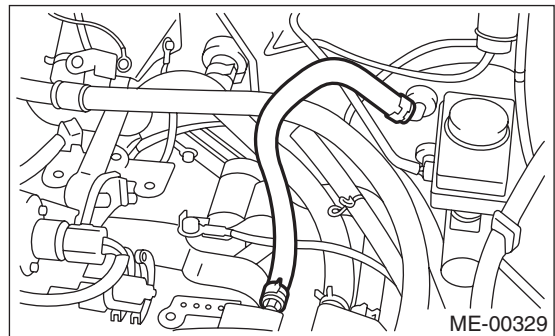


(7) Pressure switch

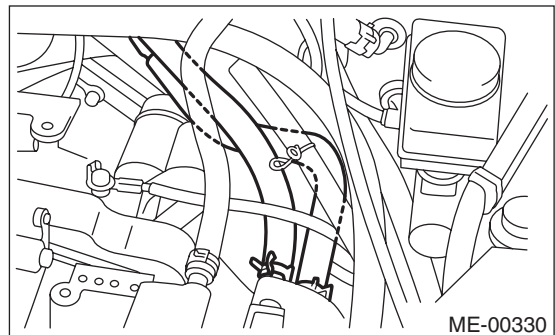


12) Disconnect the following hoses.

(1) Brake booster vacuum hose

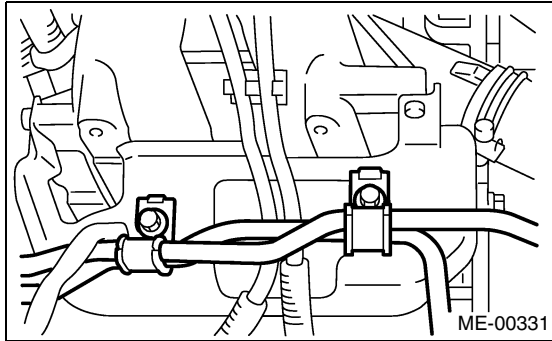


(2) Heater inlet and outlet hoses

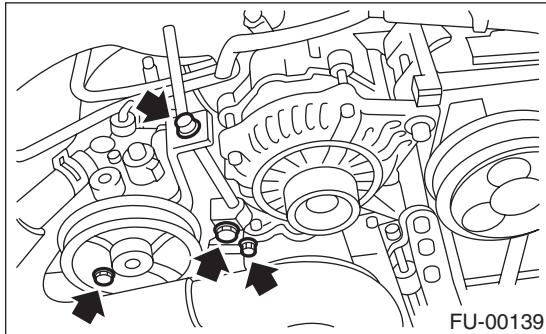


13) Remove the power steering pump from bracket.

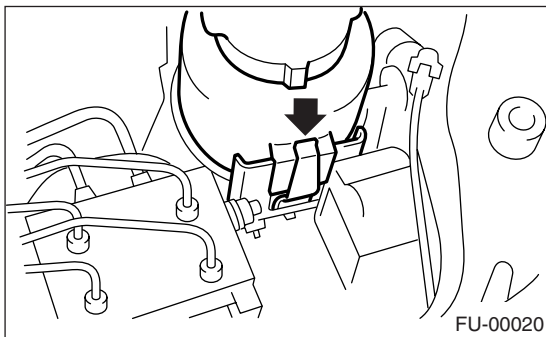
- (1) Remove the resonator chamber.
- (2) Loosen the lock bolt and slider bolt, and then remove the front side V-belt. <Ref. to ME(H4SO)-42, FRONT SIDE BELT, REMOVAL, V-belt.>
- (3) Remove the pipe with bracket.



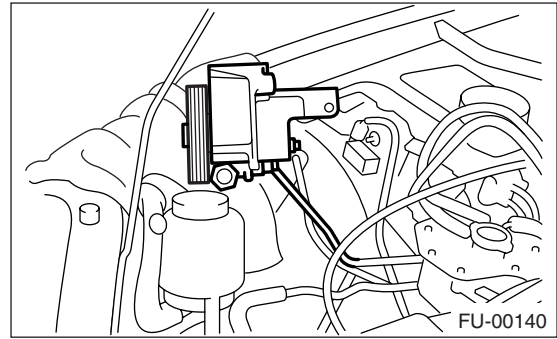
(4) Remove the bolts which install power steering pump bracket.



(5) Remove the power steering tank from bracket by pulling it upward.

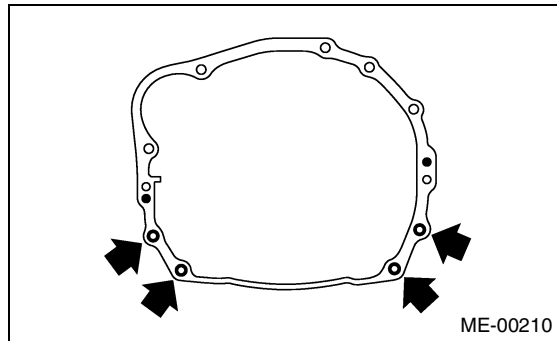


(6) Place the power steering pump on right side wheel apron.

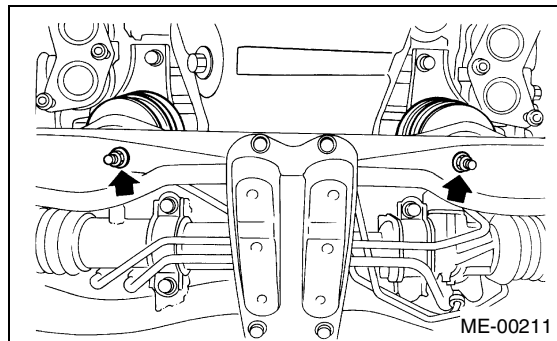


14) Remove the front and center exhaust pipe. <Ref. to EX(H4SO)-5, REMOVAL, Front Exhaust Pipe.>

15) Remove the nuts which hold lower side of transmission to engine.



16) Remove the nuts which install front cushion rubber onto front crossmember.



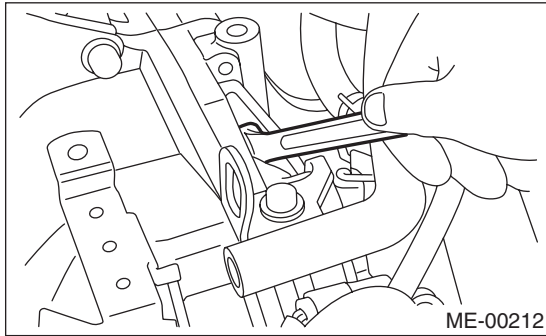
17) Separate the torque converter clutch from drive plate. (AT vehicles)

- (1) Lower the vehicle.
- (2) Remove the service hole plug.
- (3) Remove the bolts which hold torque converter clutch to drive plate.
- (4) Remove other bolts while rotating the engine using ST.

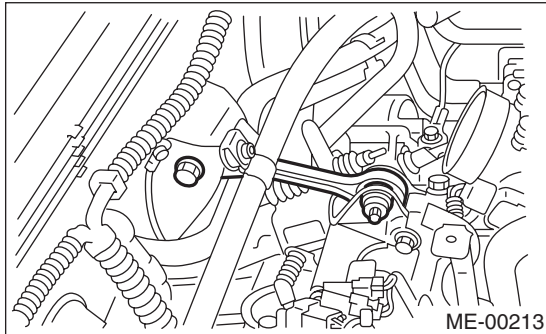
ENGINE ASSEMBLY

MECHANICAL

ST 499977100 CRANKSHAFT PULLEY
WRENCH



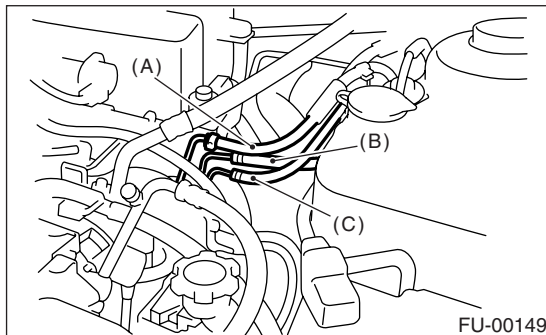
18) Remove the pitching stopper.



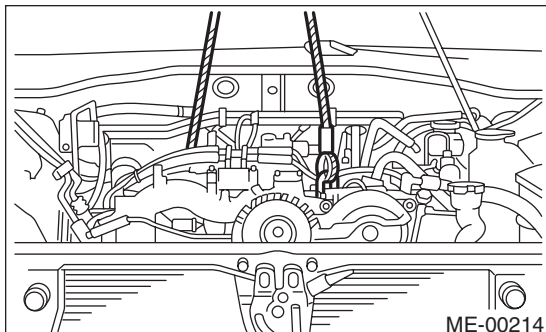
19) Disconnect fuel delivery hose (A), return hose (B) and evaporation hose (C).

CAUTION:

- Disconnect the hose with its end wrapped with cloth to prevent fuel from splashing.
- Catch fuel from the hose into container.



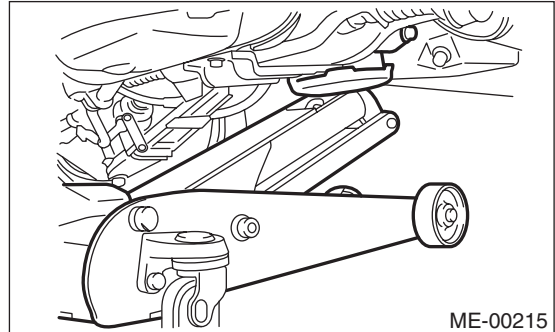
20) Support the engine with a lifting device and wire ropes.



21) Support the transmission with a garage jack.

CAUTION:

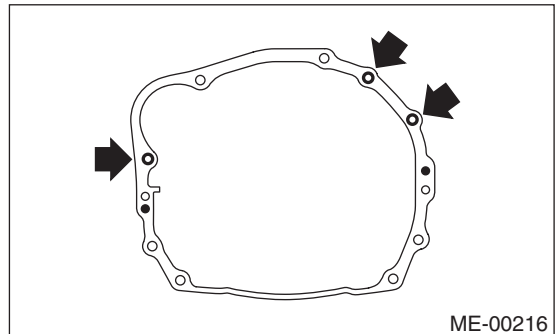
Before moving the engine away from the transmission, check to be sure no work has been overlooked. Doing this is very important because the transmission lowers under its own weight. This is also very important in order to facilitate re-installation.



- (A) Transmission
(B) Garage jack

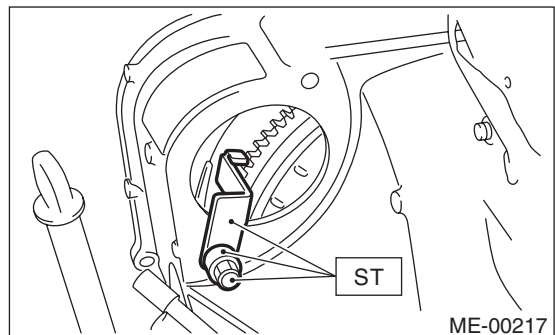
22) Separation of the engine and transmission.

- (1) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>
- (2) Remove the bolts which hold upper side of transmission to engine.



23) Install ST to torque converter clutch case. (AT vehicles)

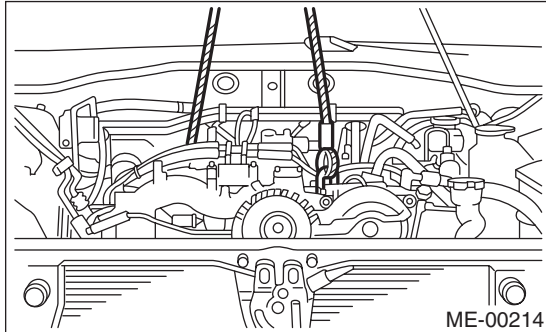
ST 498277200 STOPPER SET



- 24) 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.
 - (4) Slowly move the engine away from engine compartment.

NOTE:

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



- 25) Remove front cushion rubbers.

B: INSTALLATION

- 1) Install the front cushion rubbers.

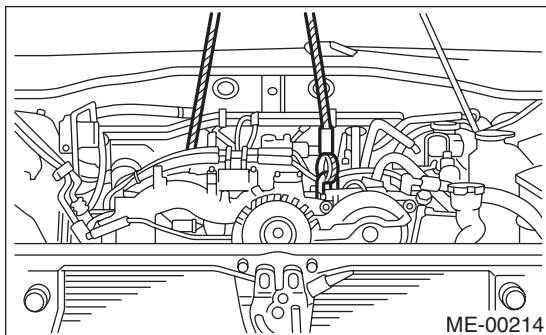
Tightening torque:

34 N·m (3.5 kgf-m, 25.3 ft-lb)

- 2) Install the engine onto transmission.
 - (1) Position the engine in engine compartment and align it with transmission.

NOTE:

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

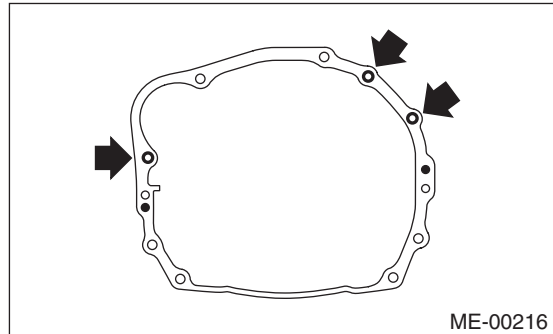


- (2) Apply a small amount of grease to the splines of main shaft. (MT vehicles)

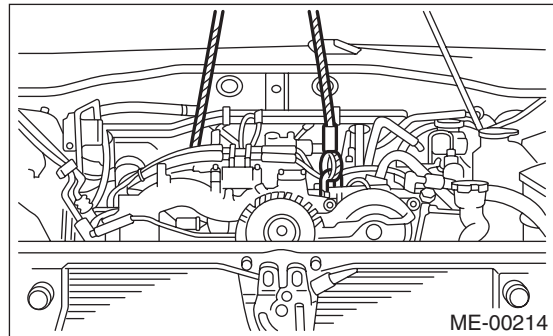
- 3) Tighten the bolts which hold upper side of transmission to engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



- 4) Remove the lifting device and wire ropes.

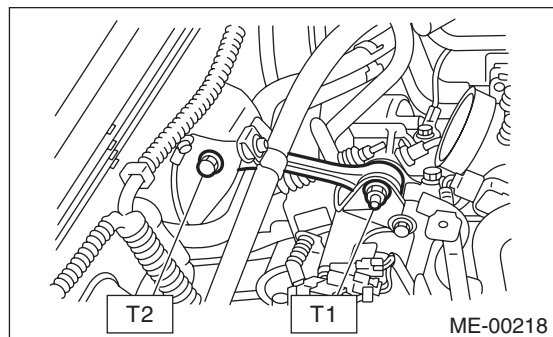


- 5) Remove the garage jack.
- 6) Install the pitching stopper.

Tightening torque:

T1: 50 N·m (5.1 kgf-m, 37 ft-lb)

T2: 58 N·m (5.9 kgf-m, 43 ft-lb)



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

NOTE:

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

ST 498277200 STOPPER SET

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

ENGINE ASSEMBLY

MECHANICAL

9) Install the torque converter clutch onto drive plate. (AT vehicles)

- (1) Tighten the bolts which hold torque converter clutch to drive plate.
- (2) Tighten other bolts while rotating the engine by using ST.

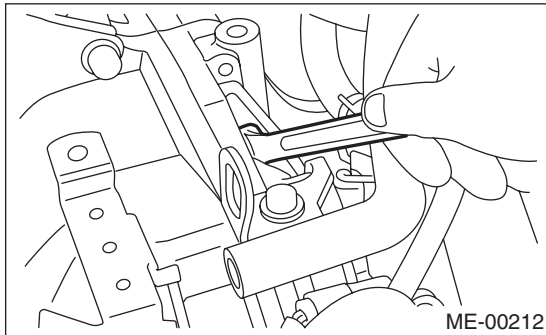
NOTE:

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

ST 499977100 CRANKSHAFT PULLEY WRENCH

Tightening torque:

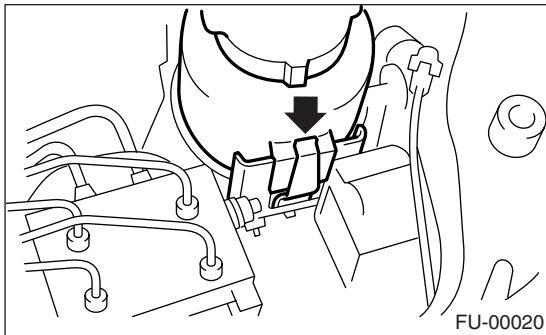
25 N·m (2.5 kgf-m, 18.1 ft-lb)



(3) Plug the service hole to prevent entry of foreign substances.

10) Install the power steering pump on bracket.

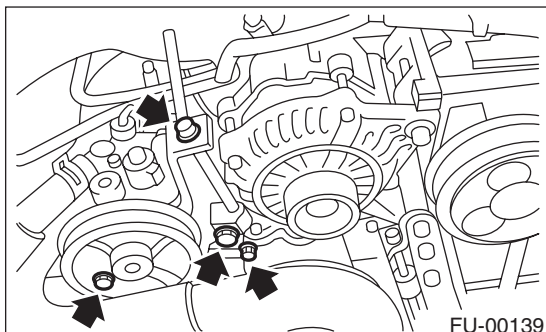
- (1) Install the power steering tank on bracket.



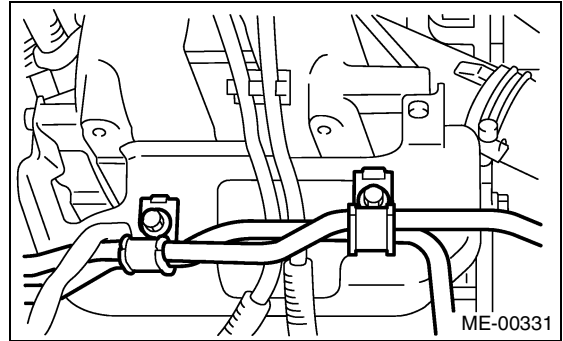
(2) Install the power steering pump on bracket, and then tighten the bolts.

Tightening torque:

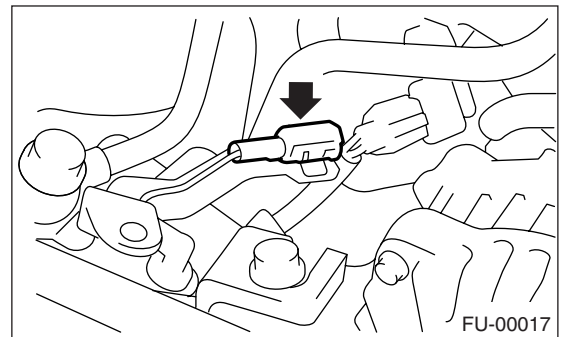
20.1 N·m (2.05 kgf-m, 14.8 ft-lb)



(3) Tighten the bolts which install power steering pump bracket, and then install the spark plug cords.



(4) Connect the power steering switch connector.

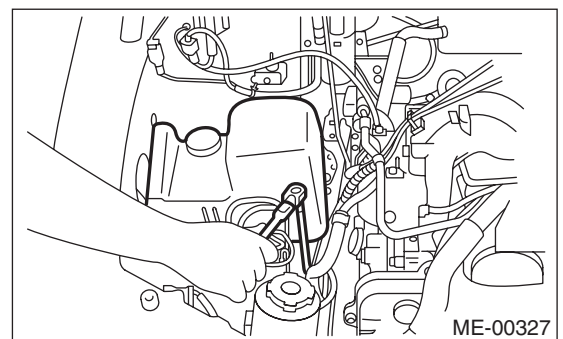


(5) Install the front side V-belt, and adjust it. <Ref. to ME(H4SO)-42, FRONT SIDE BELT, INSTALLATION, V-belt.>

(6) Install the resonator chamber.

Tightening torque:

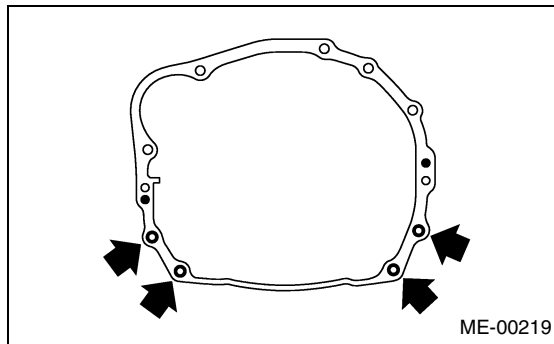
33 N·m (3.4 kgf-m, 24.6 ft-lb)



- 11) Tighten the nuts which hold lower side of transmission to engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



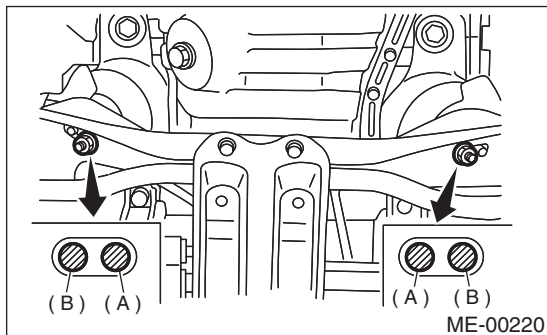
- 12) Tighten the nuts which install front cushion rubber onto crossmember.

Tightening torque:

85 N·m (8.7 kgf-m, 63 ft-lb)

NOTE:

Make sure the front cushion rubber mounting bolts (A) and locator (B) are securely installed.



- 13) Install the front and center exhaust pipe.
<Ref. to EX(H4SO)-6, INSTALLATION, Front Exhaust Pipe.>

- 14) Connect the following hoses.

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

- 15) Connect the following connectors.

- (1) Engine ground cable

Tightening torque:

14 N·m (1.4 kgf-m, 10.1 ft-lb)

- (2) Engine harness connectors
- (3) Generator connector and terminal
- (4) A/C compressor connector
- (5) Power steering pressure switch

- 16) Connect the following cables.

- (1) Accelerator cable
- (2) Cruise control cable (vehicles with cruise control)

- 17) Adjust each connected cable.

- 18) Install the air cleaner case stay.

Tightening torque:

16 N·m (1.6 kgf-m, 11.6 ft-lb)

- 19) Install the A/C pressure hoses.

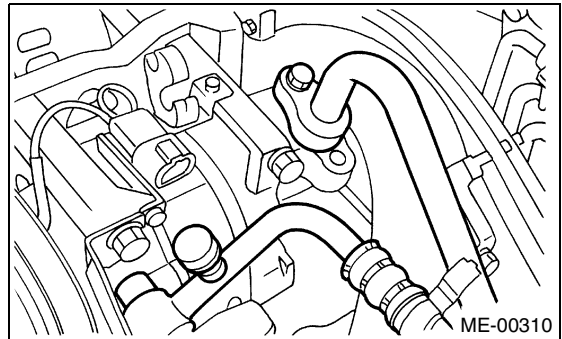
<Ref. to AC-31, INSTALLATION, Hose and Tube.>

NOTE:

Use new O-rings.

Tightening torque:

25 N·m (2.5 kgf-m, 18.1 ft-lb)



- 20) Install the radiator to vehicle. <Ref. to CO(H4SO)-42, INSTALLATION, Radiator.>

- 21) Install the air intake duct and air cleaner case.
<Ref. to IN(H4SO)-7, INSTALLATION, Air Intake Duct.>A<Ref. to IN(H4SO)-6, INSTALLATION, Air Cleaner Case.>

- 22) Install the under cover.

- 23) Install battery in the vehicle, and then connect the cables.

- 24) Fill engine coolant.

<Ref. to CO(H4SO)-29, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

- 25) Check the ATF level and correct if necessary. (AT vehicles)

<Ref. to AT-30, INSPECTION, ATF.>

- 26) Charge the A/C system with refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Charging Procedure.>

- 27) Remove the front hood stay, and then close the front hood.

- 28) Take off the vehicle from lift arms.

C: INSPECTION

- 1) Make sure the pipes and hoses are installed correctly.

- 2) Make sure the engine coolant and ATF are at specified levels.