

9. Engine Assembly

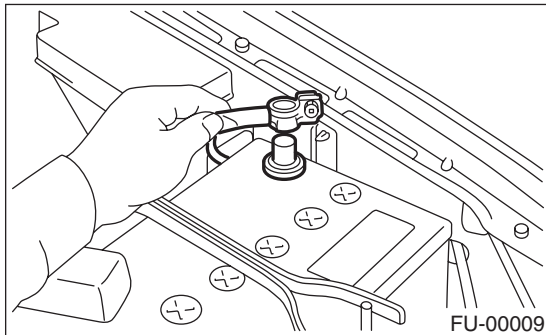
A: REMOVAL

- 1) Set the vehicle on lift arms.
- 2) Open the front hood fully and support with stay.
- 3) Raise the rear seat, and turn the floor mat up.
- 4) Release the fuel pressure.

- (1) Disconnect the fuel pump relay connector.



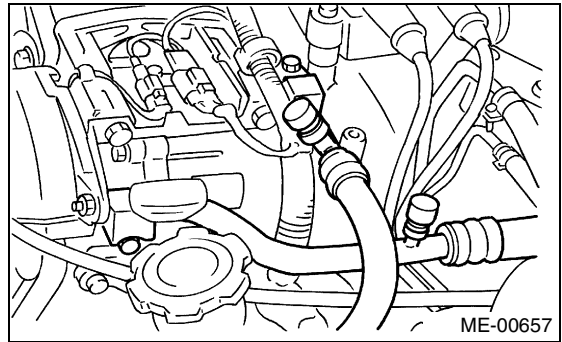
- (2) Start the engine, and run until stalls.
 - (3) After the engine stalls, crank it for five seconds more.
 - (4) Turn the ignition switch to "OFF".
- 5) Remove the filler cap.
 - 6) Disconnect the ground terminal from battery.



- 7) Remove the radiator from vehicle. <Ref. to CO(H4SO)-38, REMOVAL, Radiator.>
- 8) Remove the coolant filler tank. <Ref. to CO(H4SO)-52, REMOVAL, Coolant Filler Tank.>

- 9) Collect refrigerant, and remove the pressure hoses.

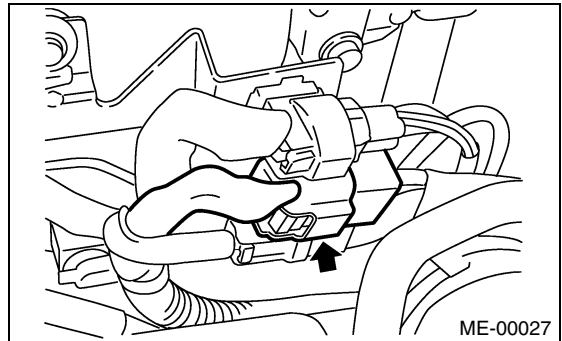
- (1) Place and connect the attachment hose to the refrigerant recycle system.
- (2) Collect the refrigerant from A/C system.
- (3) Disconnect the A/C pressure hoses from A/C compressor.



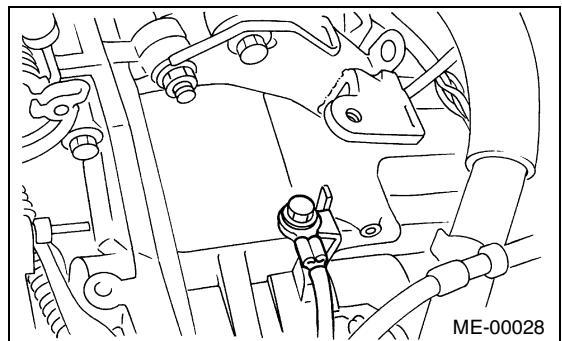
- 10) Remove the intercooler. <Ref. to IN(H4DOTC)-11, REMOVAL, Intercooler.>

- 11) Disconnect the following connectors and cable.

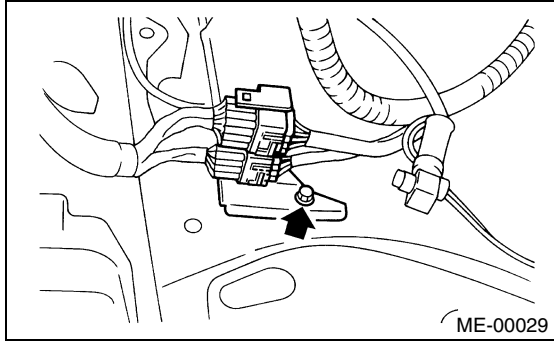
- (1) Engine harness connector



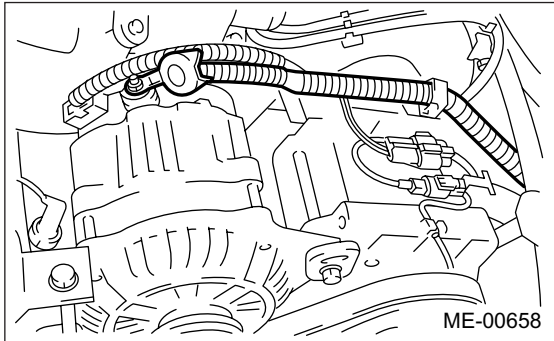
- (2) Engine ground terminal



(3) Engine harness connector

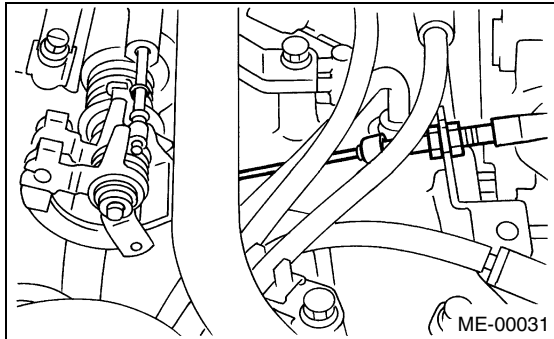


(4) Generator connector, terminal and A/C compressor connectors

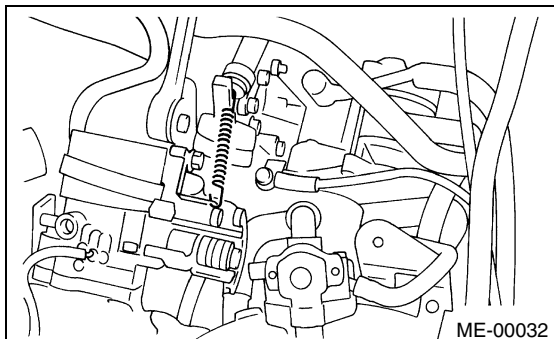


- (A) A/C compressor connector
- (B) Generator connector and terminal

(5) Accelerator cable

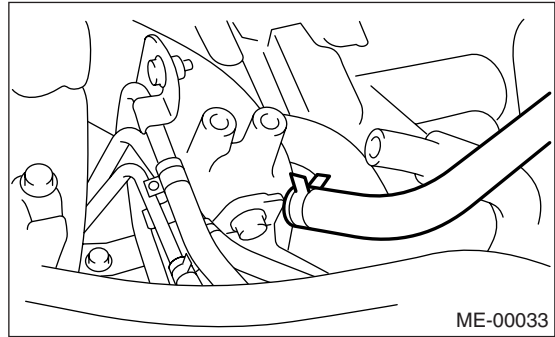


(6) Clutch release spring

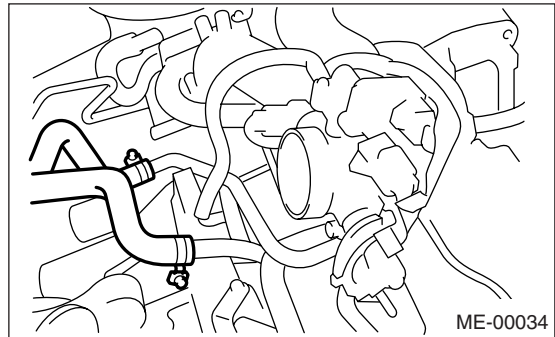


12) Disconnect the following hoses.

(1) Brake booster vacuum hose



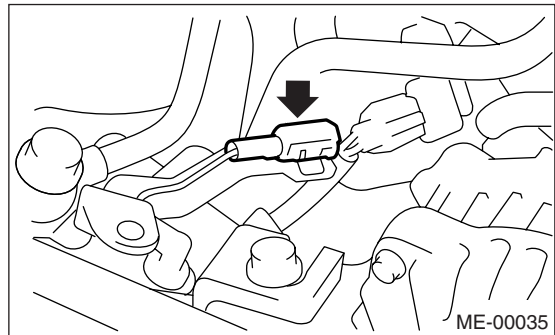
(2) Heater inlet outlet hose



13) Remove the power steering pump from bracket.

(1) Loosen lock bolt and slider bolt, and remove the front side V-belt. <Ref. to ME(H4DOTC)-44, FRONT SIDE BELT, REMOVAL, V-belt.>

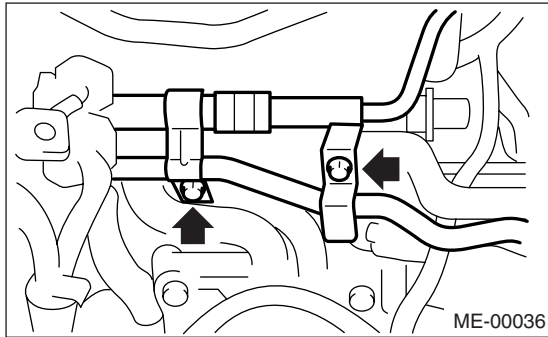
(2) Disconnect the power steering switch connector.



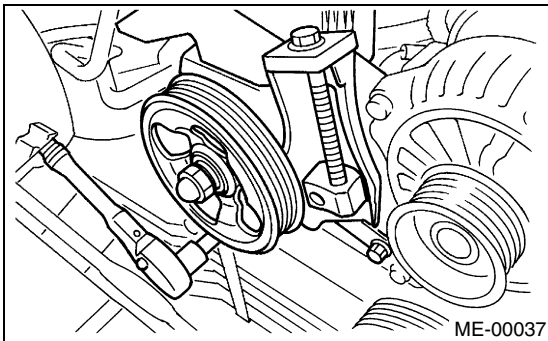
ENGINE ASSEMBLY

MECHANICAL

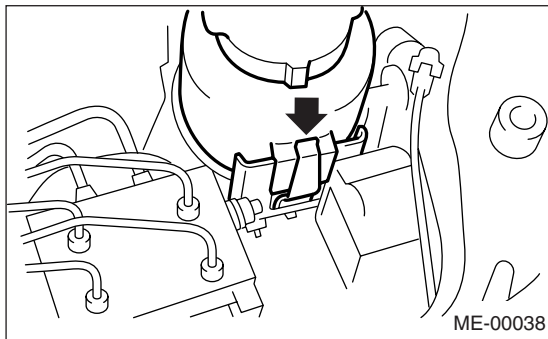
- (3) Remove the pipe with bracket from intake manifold.



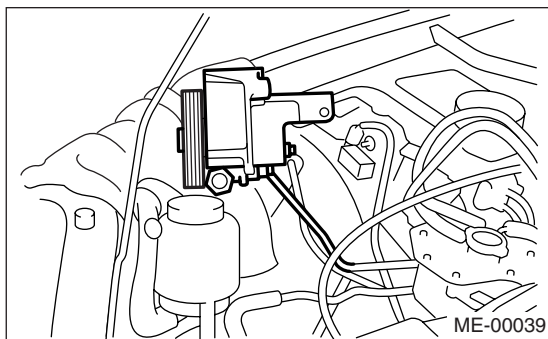
- (4) Remove the power steering pump from engine.



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



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

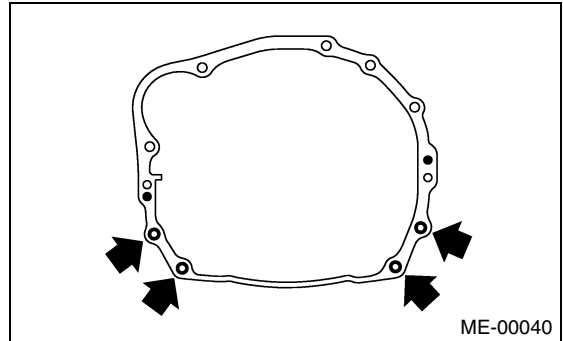


- 14) Lift-up the vehicle.

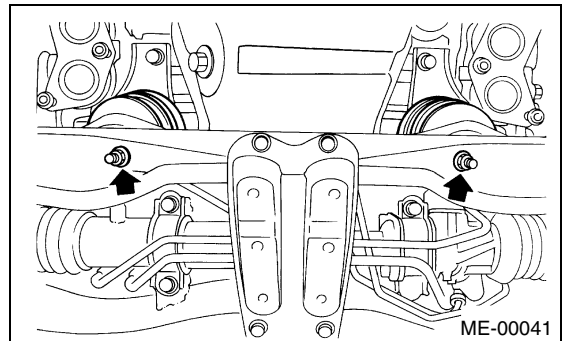
- 15) Remove the ATF cooler pipe from frame. (AT vehicles)

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

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



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

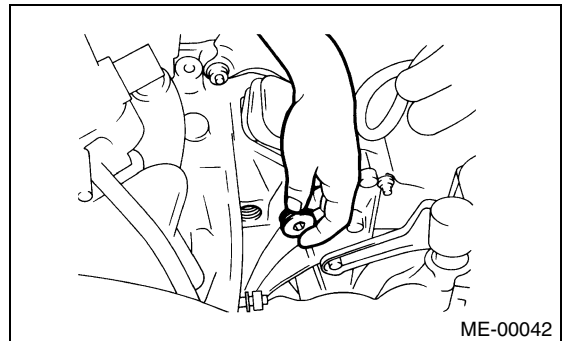


- 19) Lower the vehicle.

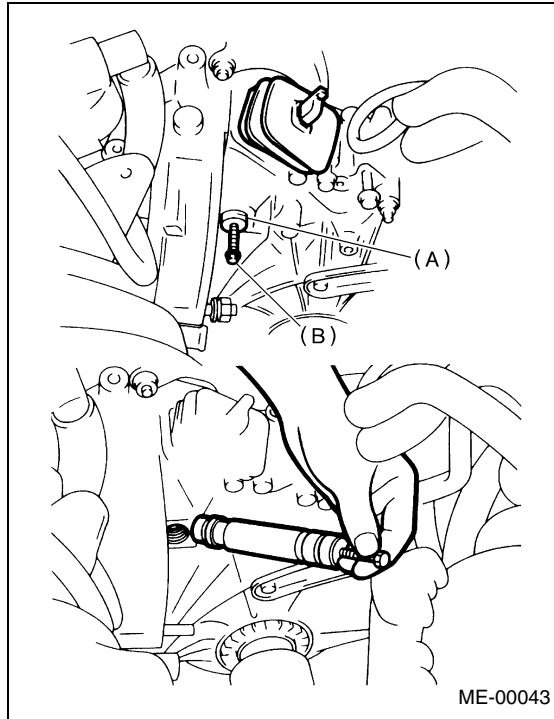
- 20) Separate the clutch release fork from release bearing. (MT vehicles)

- (1) Remove the clutch operating cylinder from transmission.

- (2) Remove the plug using a 10 mm hexagon wrench.



- (3) Screw the 6 mm dia. bolt into release fork shaft, and remove it.



(A) Shaft
(B) Bolt

- (4) Raise the release fork and unfasten the release bearing tabs to free release fork.

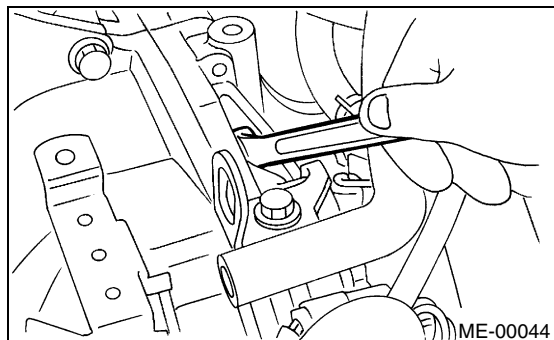
CAUTION:

Step (4) is required to prevent interference with engine when removing the engine from transmission.

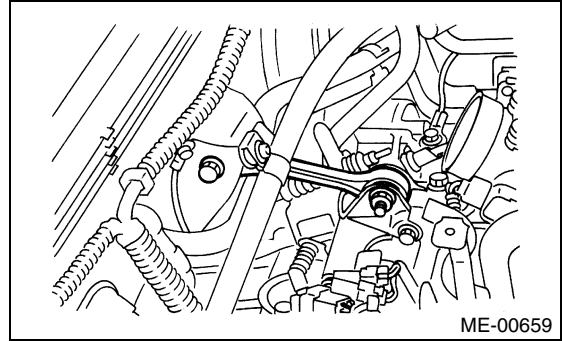
- 21) Separate the torque converter clutch from drive plate. (AT vehicles)

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

ST 499977400 CRANK PULLEY WRENCH



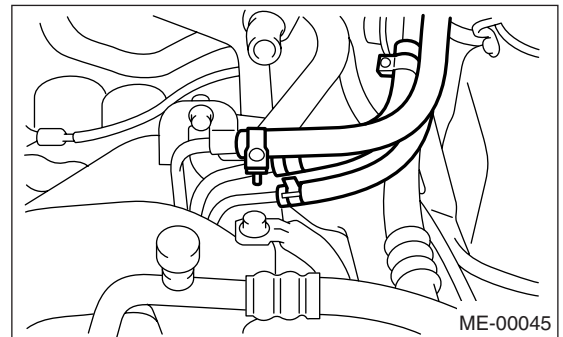
- 22) Remove the pitching stopper.



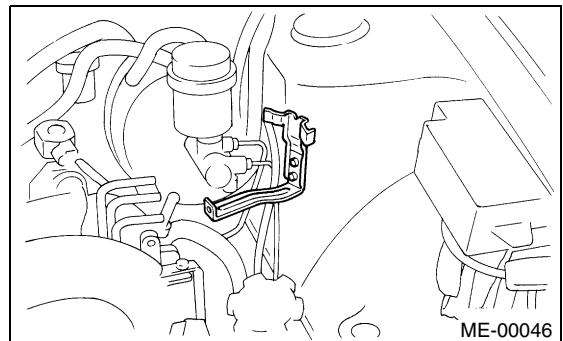
- 23) Disconnect the fuel delivery hose, return hose and evaporation hose.

CAUTION:

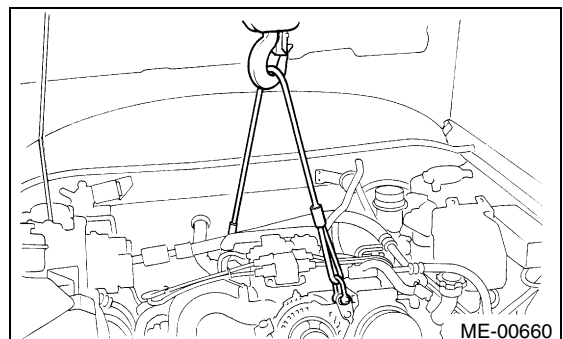
- Catch fuel from hose into container.
- Disconnect the hose with its end wrapped with cloth to prevent fuel from splashing.



- 24) Remove the fuel filter and bracket.



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



ENGINE ASSEMBLY

MECHANICAL

26) Support the transmission with a garage jack.

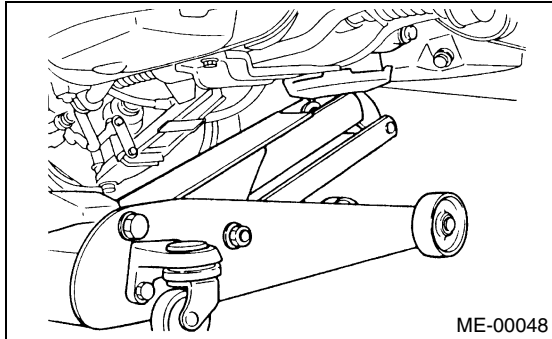
CAUTION:

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

CAUTION:

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

29) Remove the front cushion rubbers.

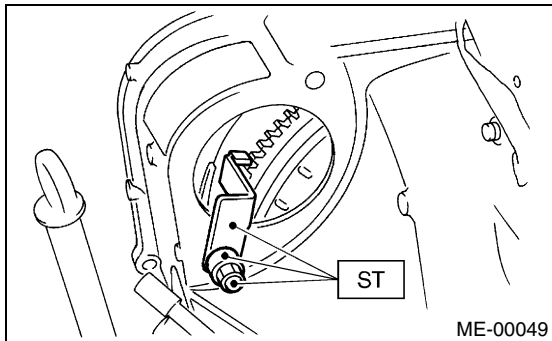


27) Separation of engine and transmission.

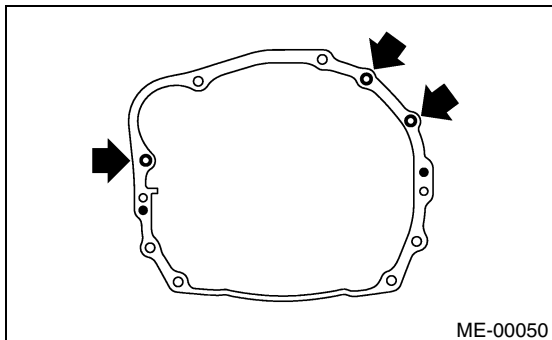
(1) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>

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

ST 498277200 STOPPER SET



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



28) Remove the engine from vehicle.

(1) Slightly raise the engine.

(2) Raise the transmission with garage jack.

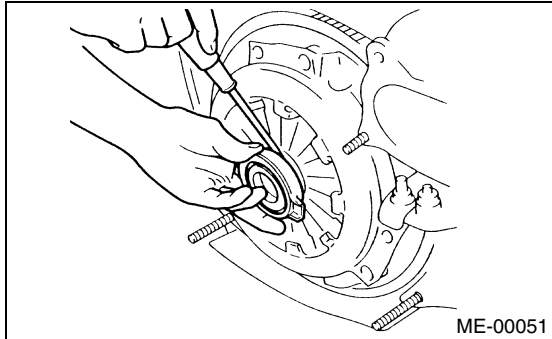
(3) Move the engine horizontally until the main-shaft is withdrawn from clutch cover.

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

B: INSTALLATION

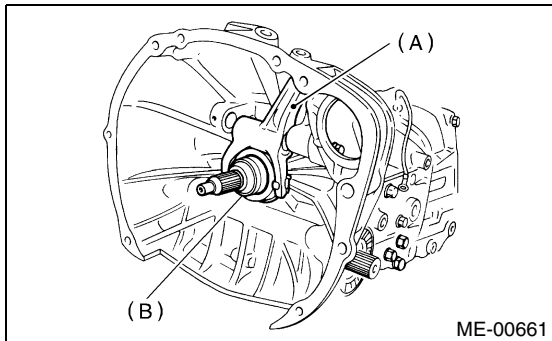
1) Install the clutch release fork and bearing onto transmission. (MT vehicles)

(1) Remove the release bearing from clutch cover with flat type screw driver.



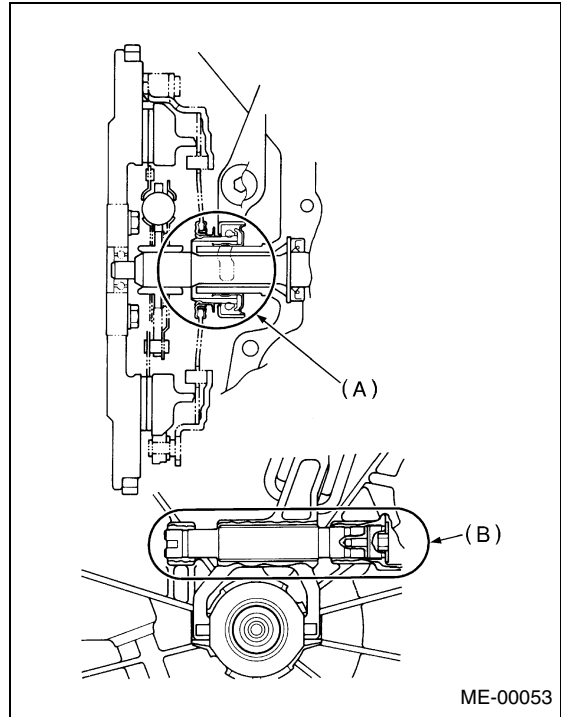
(2) Install the release bearing on transmission.

(3) Install the release fork into release bearing tab.



- (A) Release fork
- (B) Release bearing

- (4) Apply grease to the specified points.
 - Spline FX2200
 - Shaft SUNLIGHT 2

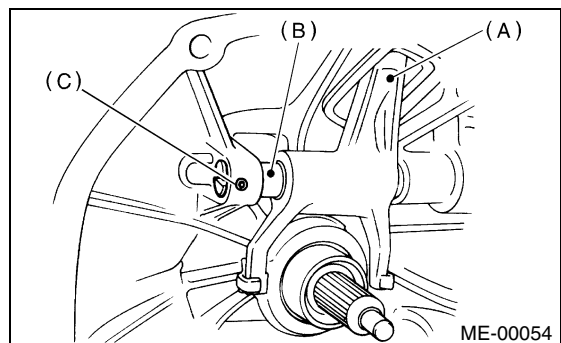


- (A) Spline (FX2200)
- (B) Shaft (SUNLIGHT 2)

(5) Insert the release fork shaft into release fork.

CAUTION:

Make sure the cutout portion of release fork shaft contacts spring pin.



- (A) Release fork
- (B) Release shaft
- (C) Spring pin

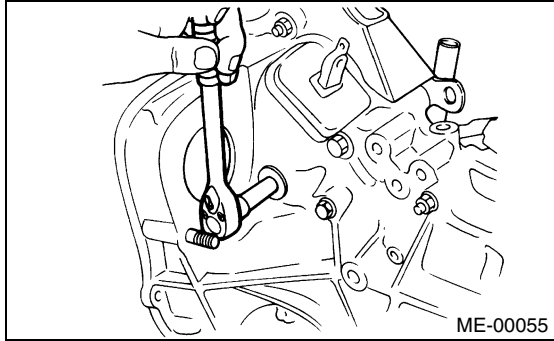
ENGINE ASSEMBLY

MECHANICAL

- (6) Tighten the plug.

Tightening torque:

44 N·m (4.5 kgf-m, 32.5 ft-lb)



- 2) Install the front cushion rubbers to engine.

Tightening torque:

34 N·m (3.5 kgf-m, 25.3 ft-lb)

- 3) Install the engine onto transmission.

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

CAUTION:

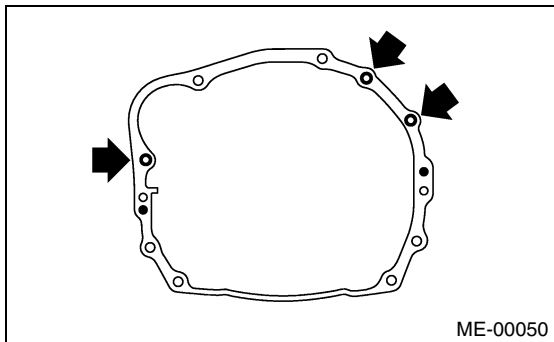
Be careful not to damage adjacent parts or body panels with crank pulley, oil pressure gauge, etc.

- (2) Apply a small amount of grease to splines of mainshaft. (MT vehicles)

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

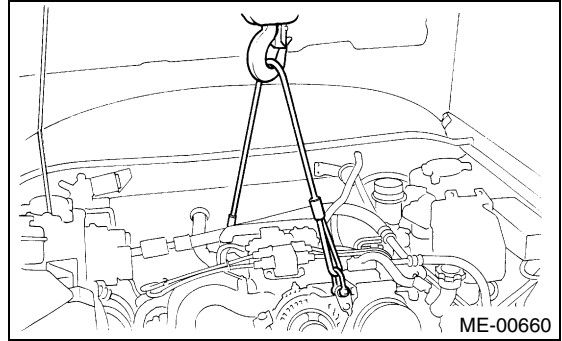
Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



- 5) Remove the lifting device and wire ropes.

- 6) Remove the garage jack.

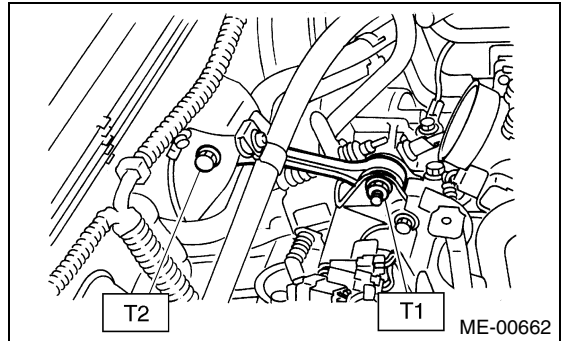


- 7) Install the pitching stopper.

Tightening torque:

T1: 50 N·m (5.1 kgf-m, 37 ft-lb)

T2: 58 N·m (5.9 kgf-m, 43 ft-lb)



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

NOTE:

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

ST 498277200 STOPPER SET

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

10) 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.

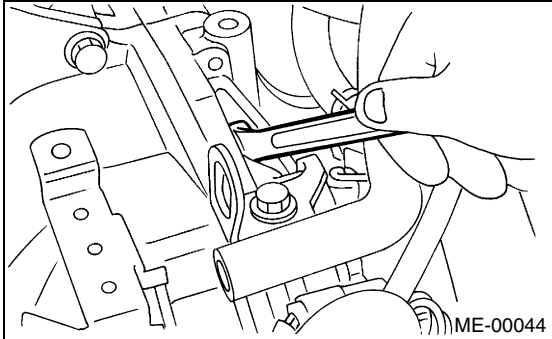
CAUTION:

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

ST 499977300 CRANK PULLEY WRENCH

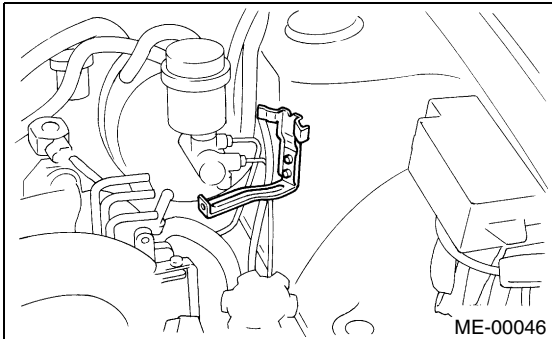
Tightening torque:

25 N·m (2.5 kgf-m, 18.1 ft-lb)



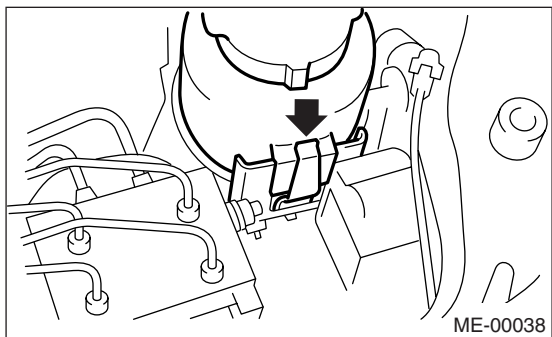
(3) Clog the service hole with plug.

11) Install the fuel filter and bracket.



12) Install the power steering pump on bracket.

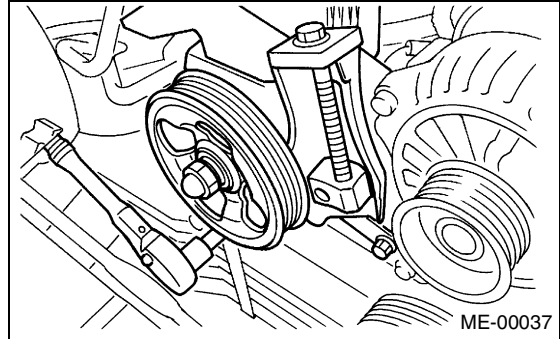
(1) Install the power steering tank on bracket.



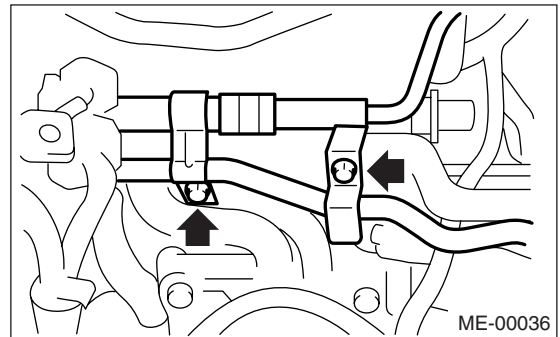
(2) Install the power steering pump.

Tightening torque:

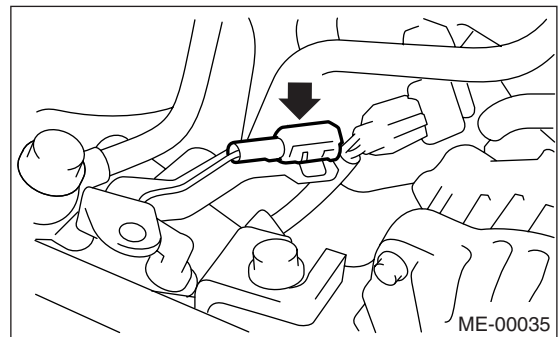
20.1 N·m (2.05 kgf-m, 14.8 ft-lb)



(3) Install the power steering pipe bracket on right side intake manifold, and install the spark plug codes.



(4) Connect the power steering switch connector.



(5) Install the front side V-belt, and adjust it.
<Ref. to ME(H4DOTC)-44, FRONT SIDE BELT, INSTALLATION, V-belt.>

13) Lift-up the vehicle.

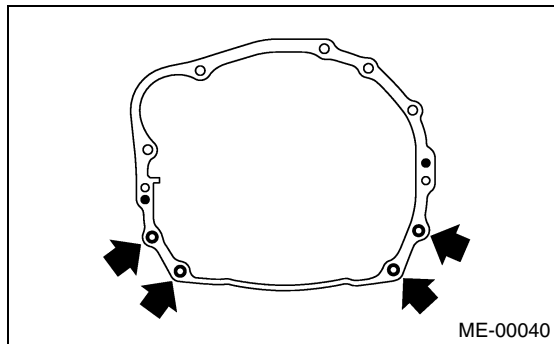
ENGINE ASSEMBLY

MECHANICAL

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

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



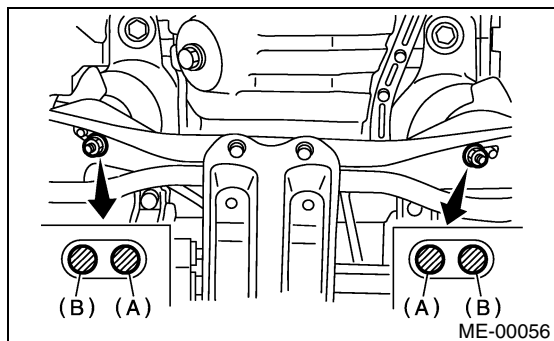
15) Tighten the nuts which install the front cushion rubber onto crossmember.

Tightening torque:

83 N·m (8.5 kgf-m, 61 ft-lb)

CAUTION:

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



16) Install the ATF cooler pipe to frame. (AT vehicles)

17) Install the center exhaust pipe.

<Ref. to EX(H4DOTC)-9, INSTALLATION, Center Exhaust Pipe.>

18) Lower the vehicle.

19) Connect the following hoses:

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

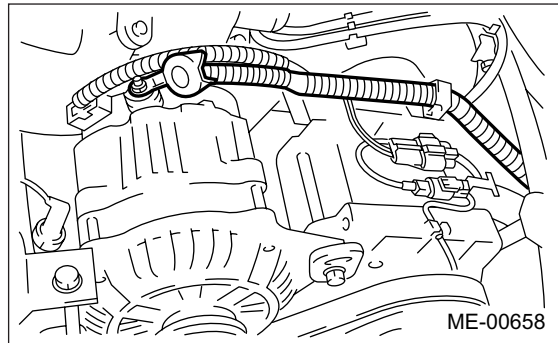
20) Connect the following connectors and terminals:

- (1) Engine ground terminal
- (2) Engine harness connectors
- (3) Generator connector

(4) Generator terminal

Tightening torque:

5.88 N·m (0.60 kgf-m, 4.34 ft-lb)



(5) A/C compressor connectors

21) Connect the following cables:

- (1) Accelerator cable
- (2) Clutch release spring

CAUTION:

After connecting each cable, adjust them.

22) Install the air intake system.

- (1) Install the intercooler. <Ref. to IN(H4DOTC)-12, INSTALLATION, Intercooler.>
- (2) Install the air cleaner element and air cleaner upper cover.
- (3) Install the engine harness connector bracket.
- (4) Install the filler hose to air cleaner case.

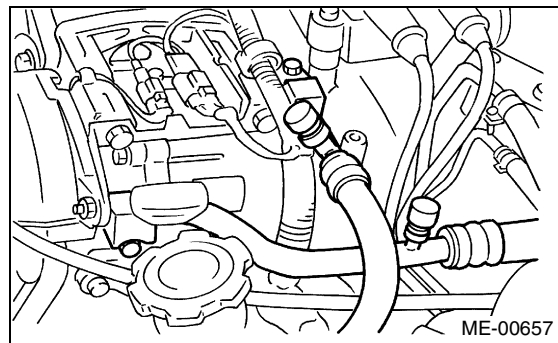
23) Install the A/C pressure hoses.

CAUTION:

Use new O-rings.

Tightening torque:

25 N·m (2.5 kgf-m, 18.1 ft-lb)



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

25) Install the coolant filler tank. <Ref. to CO(H4SO)-52, INSTALLATION, Coolant Filler Tank.>

26) Install the window washer tank.

27) Install the battery in the vehicle, and connect cables.

28) Fill coolant.

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

29) Charge the A/C system with refrigerant.

<Ref. to AC-17, OPERATION, Refrigerant Charging Procedure.>

30) Remove the front hood stay, and close the front hood.

31) Take off the vehicle from lift arms.