

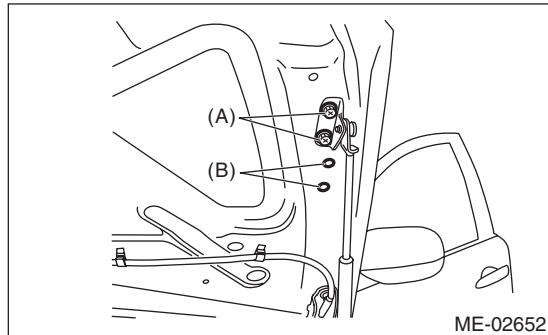
## 9. Engine Assembly

### A: REMOVAL

1) Change the bolt mounting position from (A) to (B), then completely open the front hood.

**Tightening torque:**

**7.5 N·m (0.8 kgf-m, 5.5 ft-lb)**



2) Remove the collector cover.

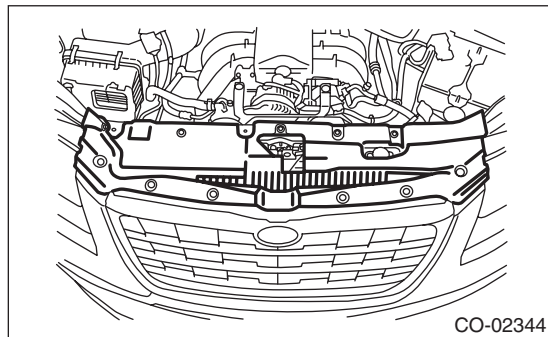
3) Collect the refrigerant from A/C system. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>

4) Release the fuel pressure. <Ref. to FU(H6DO)-62, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>

5) Remove the battery from vehicle. <Ref. to SC(H6DO)-19, REMOVAL, Battery.>

6) Remove the air intake duct, air cleaner case and air intake chamber. <Ref. to IN(H6DO)-9, REMOVAL, Air Intake Duct.> <Ref. to IN(H6DO)-6, REMOVAL, Air Cleaner Case.> <Ref. to IN(H6DO)-8, REMOVAL, Air Intake Chamber.>

7) Remove the front upper cover.

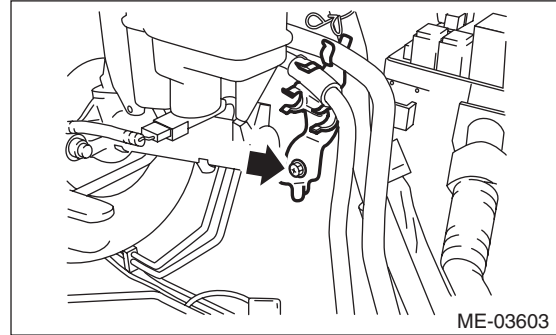


8) Remove the front bumper. <Ref. to EI-22, FRONT BUMPER FACE, REMOVAL, Front Bumper.>

9) Remove the radiator main fan & fan motor and radiator sub fan & fan motor. <Ref. to CO(H6DO)-23, REMOVAL, Radiator Main Fan and Fan Motor.> <Ref. to CO(H6DO)-27, REMOVAL, Radiator Sub Fan and Fan Motor.>

10) Remove the radiator. <Ref. to CO(H6DO)-17, REMOVAL, Radiator.>

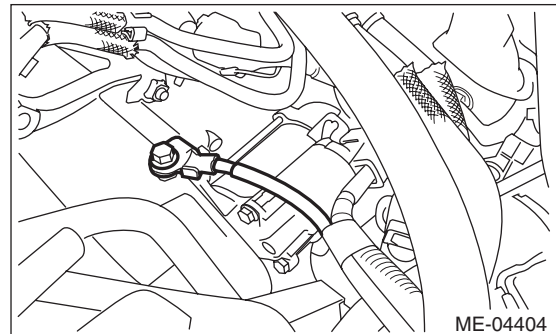
11) Remove the fuel hose bracket.



12) Remove the V-belts. <Ref. to ME(H6DO)-46, REMOVAL, V-belt.>

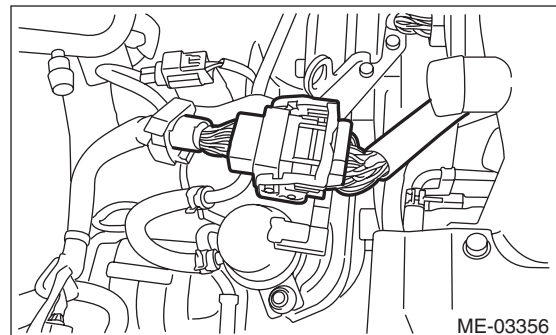
13) Disconnect the A/C pressure hoses from A/C compressor. <Ref. to AC-41, REMOVAL, Hose and Pipe.>

14) Remove the engine ground.



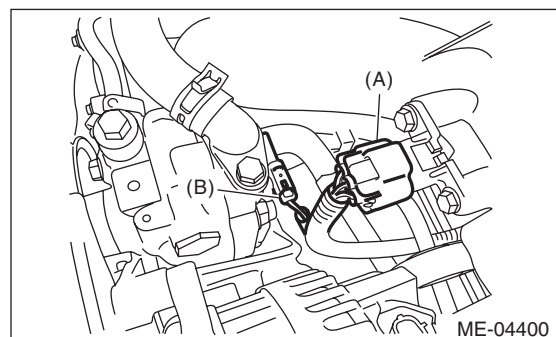
15) Disconnect the following connector.

(1) Engine harness connectors



(2) Generator connector, terminal B and magnet clutch connector

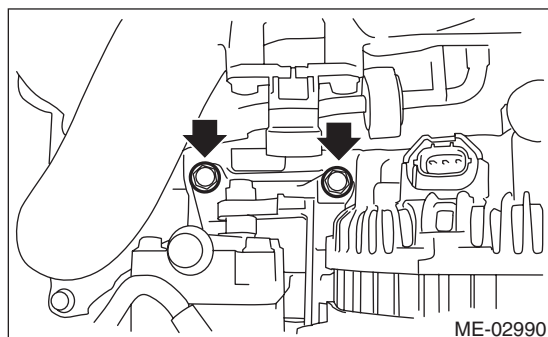
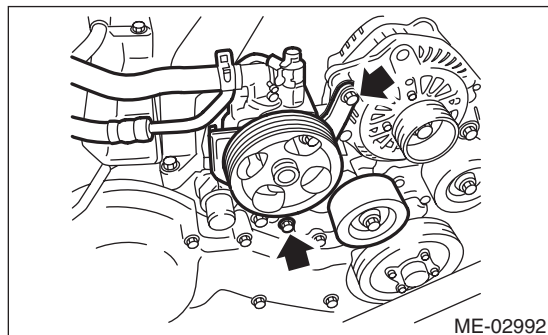
(3) Manifold absolute pressure sensor connector (A) and power steering pump connector (B)



- 16) Remove the power steering pump together with the bracket.

**NOTE:**

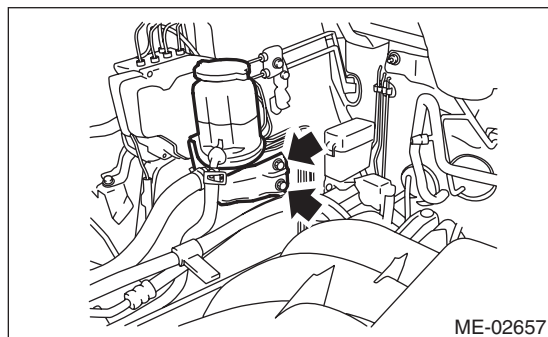
Do not disconnect the hose and pipe from the power steering pump body.



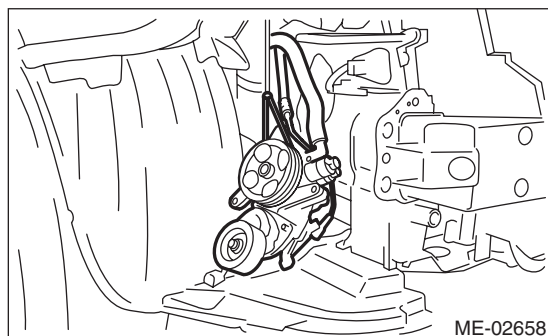
- 17) Remove the power reserve tank together with the bracket.

**NOTE:**

Do not disconnect the hose from the reservoir tank body.

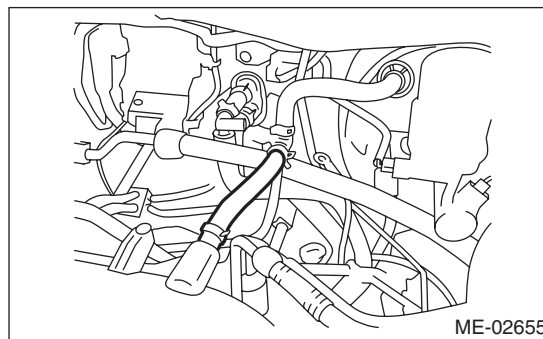


- 18) Suspend the power steering pump using wire, etc.



- 19) Disconnect the following hoses.

- (1) Brake booster vacuum hose



- (2) Heater inlet and outlet hoses

- 20) Remove the bolts which hold the vacuum pump bracket to the engine. <Ref. to BR-10, BRAKE VACUUM PUMP, COMPONENT, General Description.>

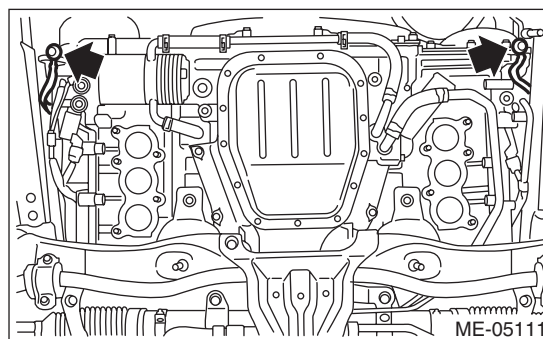
- 21) Lift up the vehicle.

- 22) Remove the front exhaust pipe. <Ref. to EX(H6DO)-5, REMOVAL, Front Exhaust Pipe.>

**NOTE:**

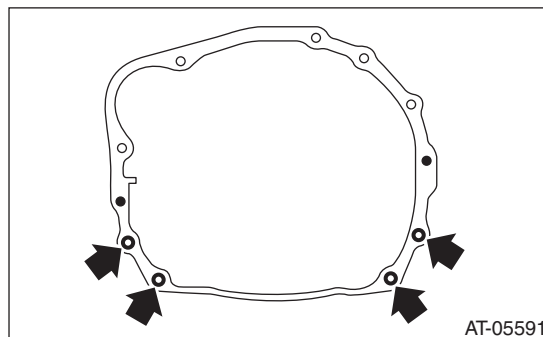
Be careful not to let the front exhaust pipe interfere with water pipes on engine side.

- 23) Remove the ground cable from the underside of chain cover.



- 24) Remove the bolts which hold the vacuum pump bracket to the transmission, then remove the vacuum pump together with the bracket. <Ref. to BR-10, BRAKE VACUUM PUMP, COMPONENT, General Description.>

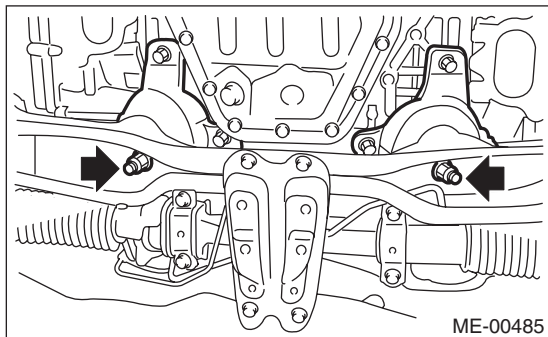
- 25) Remove the bolts and nuts which hold lower side of transmission to engine.



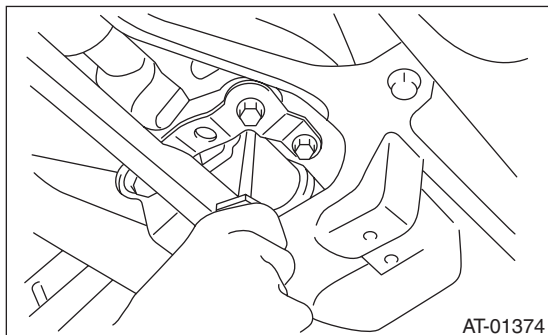
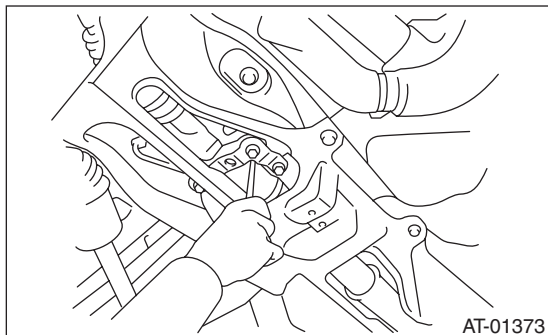
# Engine Assembly

## MECHANICAL

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



27) Remove the two clutch housing cover securing bolts.



28) Lower the vehicle.

29) Remove the throttle body from the intake manifold.

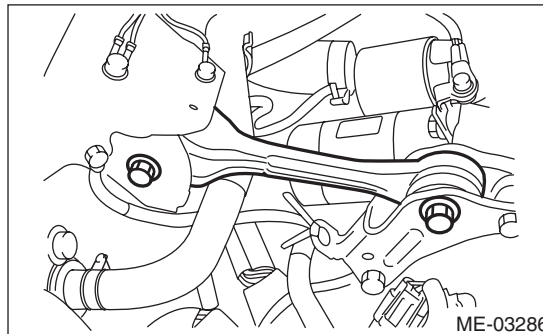
### NOTE:

Do not disconnect the inlet and outlet hoses of engine coolant.

30) Separate the torque converter clutch from drive plate.

- (1) Remove the service hole plug.
- (2) Rotate the crank pulley to align the drive plate to the service hole, and remove four bolts.

31) Remove the pitching stopper.



32) Disconnect the fuel delivery hose and evaporation hose.

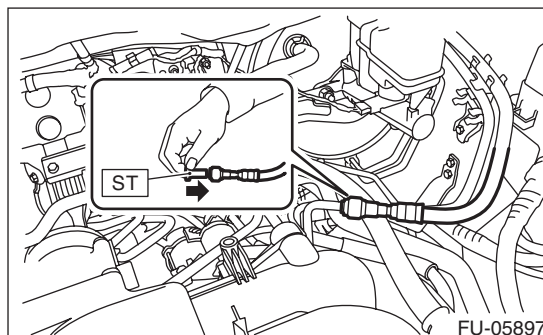
### CAUTION:

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

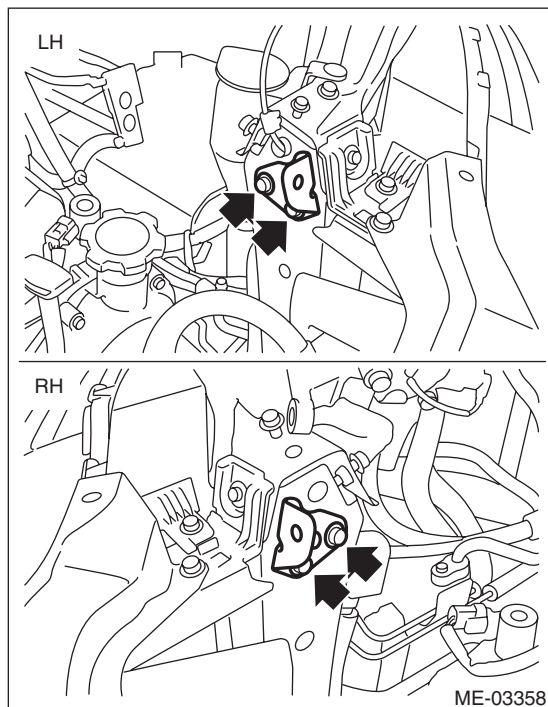
(1) Disconnect the connector of fuel pipe by pushing the ST in the direction of arrow.

ST 42099AE000 QUICK CONNECTOR RELEASE

(2) Remove the clamp and disconnect the evaporation hose.



33) Remove the radiator center bracket.

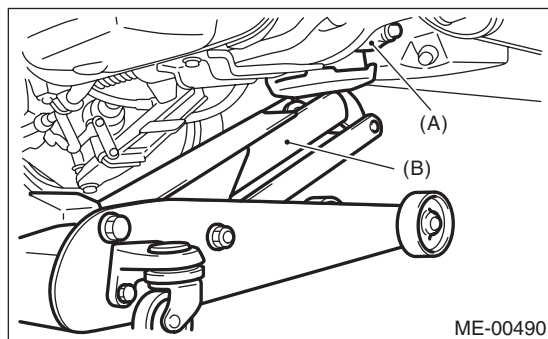


34) Support the engine with a lifting device and wire ropes.

35) 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

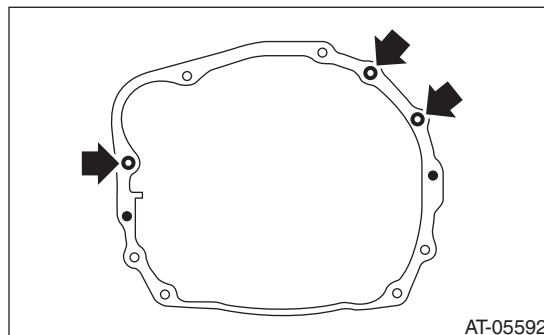
36) Separate the engine and transmission.

**CAUTION:**

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

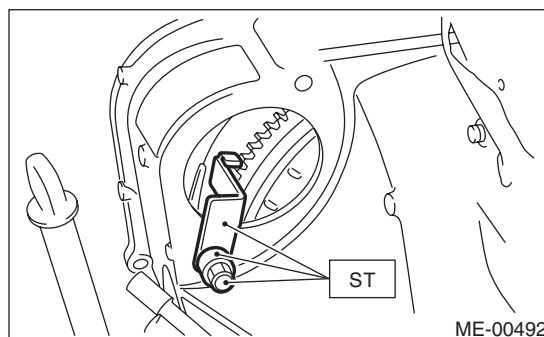
(1) Remove the starter. <Ref. to SC(H6DO)-6, REMOVAL, Starter.>

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



37) Attach the ST to converter case.

ST 498277200 STOPPER SET



38) Remove the engine from vehicle.

(1) Slightly raise the engine.

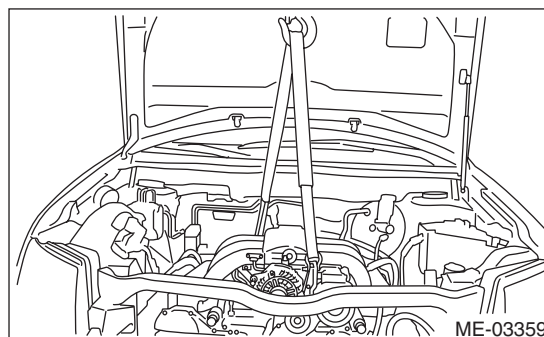
(2) Raise the transmission with garage jack.

(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 adjacent parts or body panels with crank pulley, oil level gauge, etc.



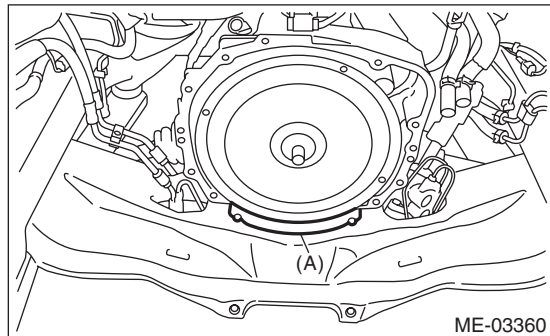
39) Remove the engine mounting.



# Engine Assembly

## MECHANICAL

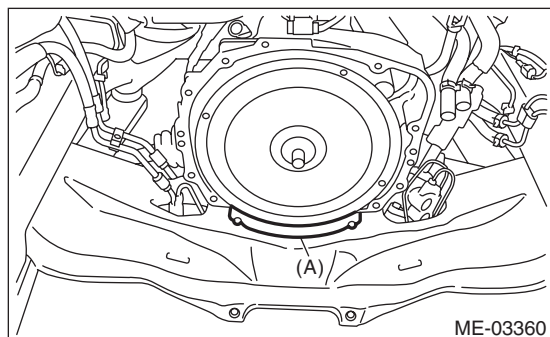
- 40) Remove the clutch housing cover from vehicle.



(A) Clutch housing cover

## B: INSTALLATION

- 1) Set the clutch housing cover to the vehicle.



(A) Clutch housing cover

- 2) Install the engine mount.

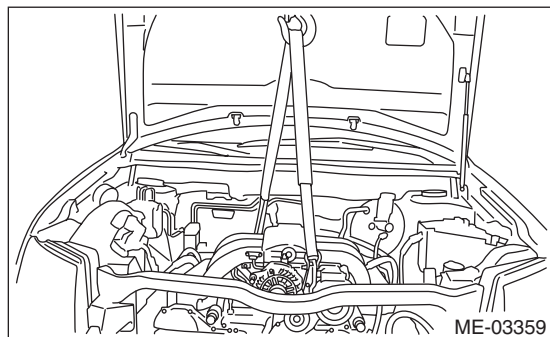
**Tightening torque:**

**35 N·m (3.6 kgf-m, 25.8 ft-lb)**

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

### NOTE:

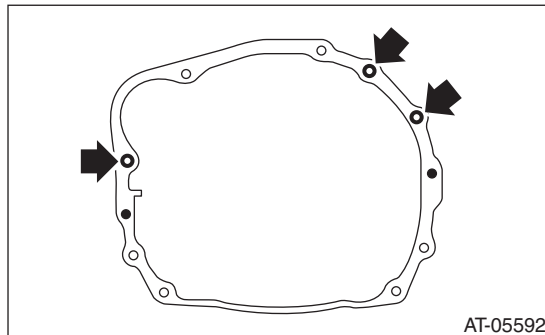
Be careful not to damage adjacent parts or body panels with crank pulley, oil level gauge, etc.



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

**Tightening torque:**

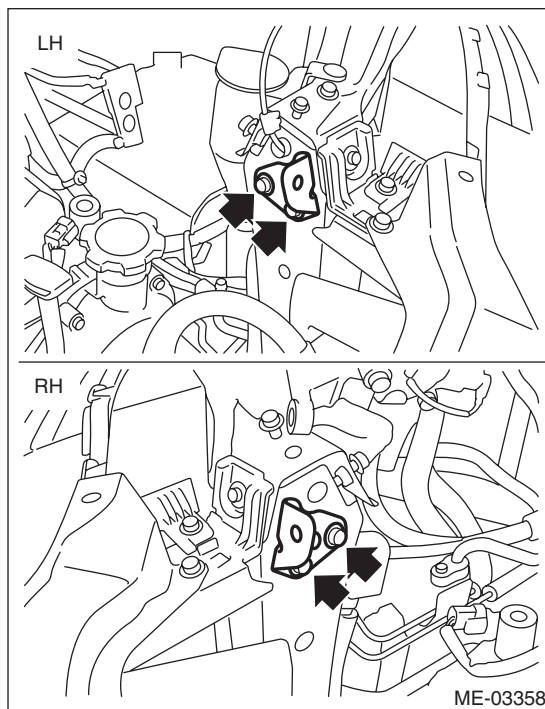
**50 N·m (5.1 kgf-m, 36.9 ft-lb)**



- 5) Remove the lifting device and wire ropes.  
6) Remove the garage jack.  
7) Install the radiator center bracket.

**Tightening torque:**

**18 N·m (1.8 kgf-m, 13.3 ft-lb)**

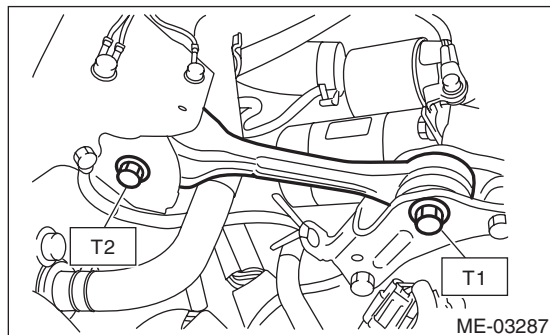


8) Install the pitching stopper.

**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)**



9) Remove the ST from converter case.

**NOTE:**

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

10) Install the starter. <Ref. to SC(H6DO)-6, INSTALLATION, Starter.>

11) Connect the torque converter clutch to the drive plate.

- (1) Rotate the clank pulley to align the drive plate to the service hole, and tighten four bolts.

**Tightening torque:**

**25 N·m (2.5 kgf-m, 18.4 ft-lb)**

- (2) Install the service hole plug.

12) Install the throttle body to intake manifold.

**NOTE:**

Use a new gasket.

**Tightening torque:**

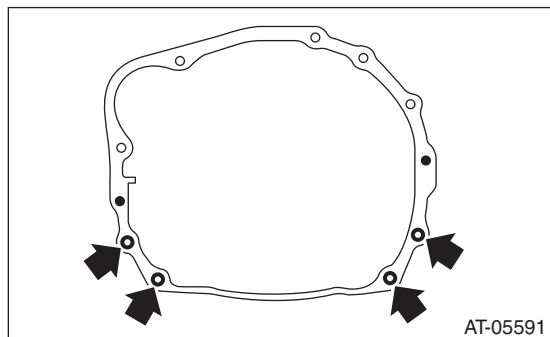
**8 N·m (0.8 kgf-m, 5.9 ft-lb)**

13) Lift up the vehicle.

14) 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)**



15) Tighten the bolts which holds the vacuum pump bracket to the transmission. <Ref. to BR-10, BRAKE VACUUM PUMP, COMPONENT, General Description.>

**Tightening torque:**

**25 N·m (2.5 kgf-m, 18.4 ft-lb)**

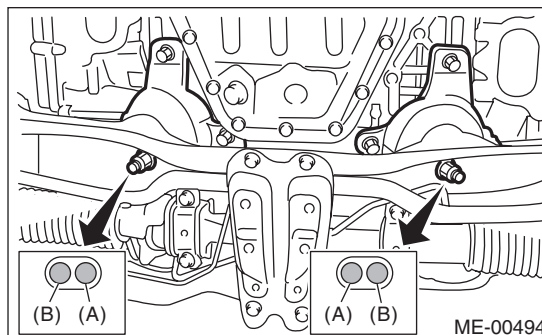
16) Tighten the nuts which install the front cushion rubber onto crossmember.

**NOTE:**

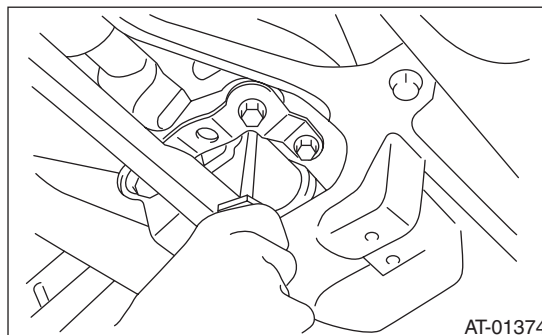
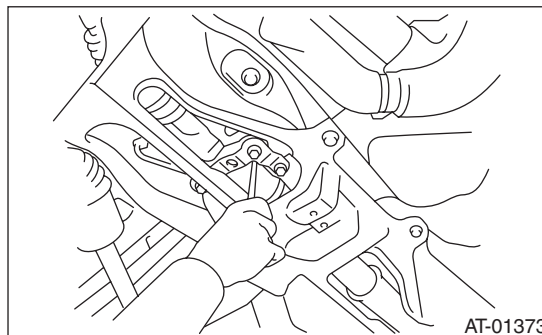
Make sure the front cushion rubber mounting bolts (A) and locator (B) are securely installed.

**Tightening torque:**

**75 N·m (7.6 kgf-m, 55.3 ft-lb)**



17) Install the clutch housing cover securing bolts.



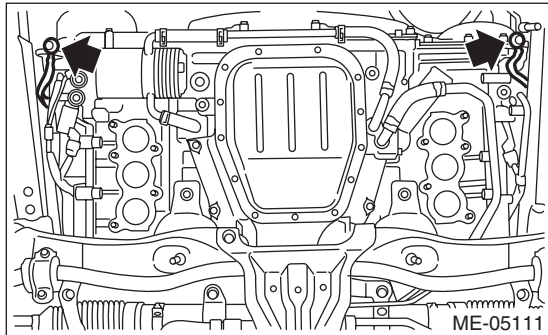
# Engine Assembly

## MECHANICAL

18) Install the ground cable to the underside of chain cover.

**Tightening torque:**

**7.5 N·m (0.8 kgf-m, 5.5 ft-lb)**



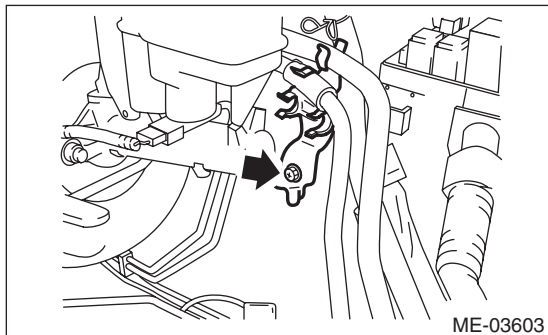
19) Install the front exhaust pipe. <Ref. to EX(H6DO)-5, INSTALLATION, Front Exhaust Pipe.>

20) Lower the vehicle.

21) Install the fuel hose bracket.

**Tightening torque:**

**7.5 N·m (0.8 kgf-m, 5.5 ft-lb)**



22) Tighten the bolts which holds the vacuum pump bracket to the engine. <Ref. to BR-10, BRAKE VACUUM PUMP, COMPONENT, General Description.>

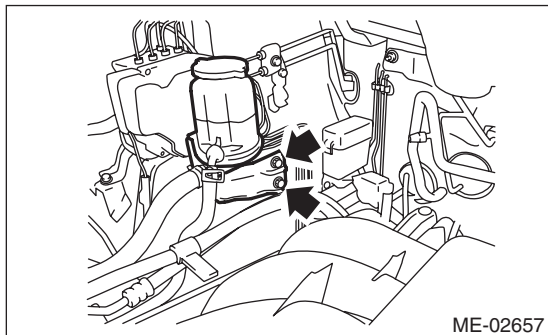
**Tightening torque:**

**25 N·m (2.5 kgf-m, 18.4 ft-lb)**

23) Install the reservoir tank.

**Tightening torque:**

**33 N·m (3.4 kgf-m, 24.3 ft-lb)**

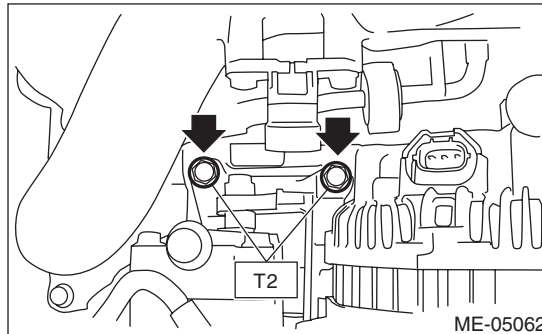
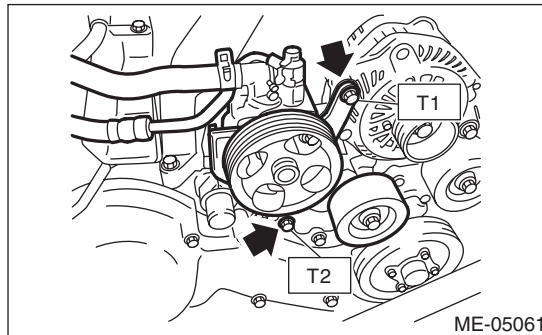


24) Install the power steering pump.

**Tightening torque:**

**T1: 25 N·m (2.5 kgf-m, 18.4 ft-lb)**

**T2: 33 N·m (3.4 kgf-m, 24.3 ft-lb)**



25) Connect the following hoses.

(1) Fuel delivery hose and evaporation hose  
<Ref. to FU(H6DO)-81, EVAPORATION HOSE CONNECTION, INSTALLATION, Fuel Delivery and Evaporation Lines.>

**NOTE:**

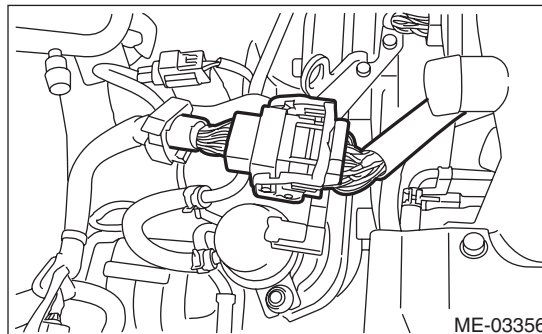
If fuel hoses or clamps are damaged, replace them with new parts.

(2) Heater inlet and outlet hoses

(3) Brake booster vacuum hose

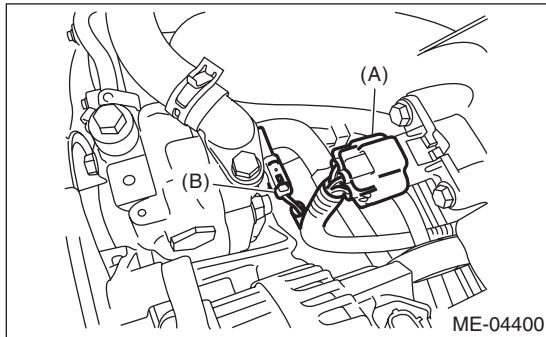
26) Connect the following connectors.

(1) Engine harness connectors



(2) Generator connector, terminal B and magnet clutch connector

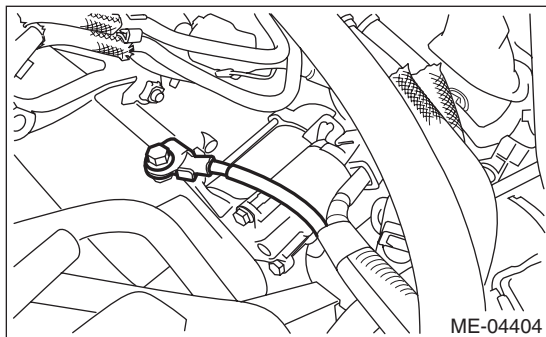
- (3) Manifold absolute pressure sensor connector (A) and power steering pump connector (B)



- 27) Install the engine ground.

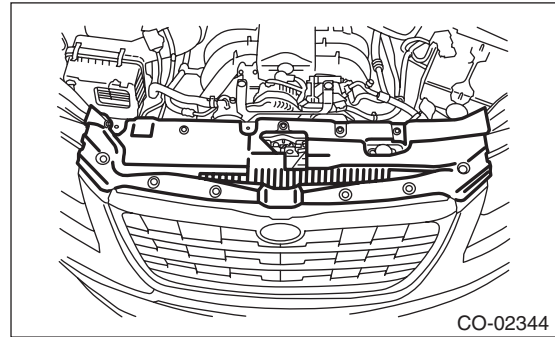
**Tightening torque:**

**14 N·m (1.4 kgf-m, 10.3 ft-lb)**



- 28) Install the A/C pressure hoses. <Ref. to AC-43, INSTALLATION, Hose and Pipe.>  
 29) Install the V-belts. <Ref. to ME(H6DO)-46, INSTALLATION, V-belt.>  
 30) Install the radiator to vehicle. <Ref. to CO(H6DO)-19, INSTALLATION, Radiator.>  
 31) Install the radiator main fan & fan motor and radiator sub fan & fan motor. <Ref. to CO(H6DO)-24, INSTALLATION, Radiator Main Fan and Fan Motor.> <Ref. to CO(H6DO)-27, INSTALLATION, Radiator Sub Fan and Fan Motor.>  
 32) Install the front bumper. <Ref. to EI-23, FRONT BUMPER FACE, INSTALLATION, Front Bumper.>  
 33) Install the battery to the vehicle. <Ref. to SC(H6DO)-19, INSTALLATION, Battery.>  
 34) Fill engine coolant. <Ref. to CO(H6DO)-12, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>  
 35) Check the ATF level and replenish it if necessary. <Ref. to 5AT-29, INSPECTION, Automatic Transmission Fluid.>  
 36) Charge the A/C system with refrigerant. <Ref. to AC-22, PROCEDURE, Refrigerant Charging Procedure.>

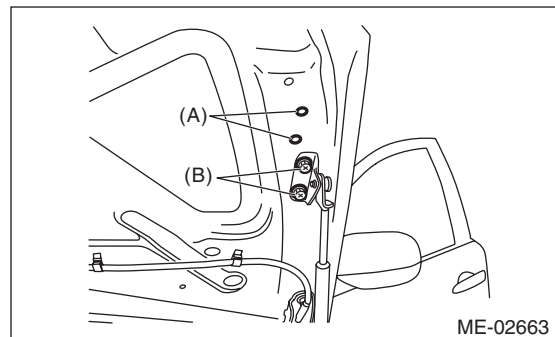
- 37) Install the front upper cover.



- 38) Install the air intake duct, air cleaner case and air intake chamber. <Ref. to IN(H6DO)-9, INSTALLATION, Air Intake Duct.> <Ref. to IN(H6DO)-7, INSTALLATION, Air Cleaner Case.> <Ref. to IN(H6DO)-8, INSTALLATION, Air Intake Chamber.>  
 39) Install the collector cover.  
 40) Change the bolt mounting position from (B) to (A), then close the front hood.

**Tightening torque:**

**7.5 N·m (0.8 kgf-m, 5.5 ft-lb)**



- 41) Lower the vehicle from lift.

## C: INSPECTION

- 1) Check that the pipes, hoses, connectors and clips are securely connected.
- 2) Check the engine coolant is at specified level.
- 3) Check that the ATF is at specified level.
- 4) Start the engine, and then check exhaust gas and engine coolant. And check for fuel leakage, noise, vibrations, etc.