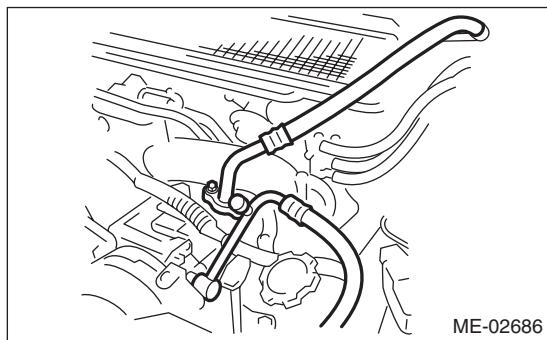


## 9. Engine Assembly

### A: REMOVAL

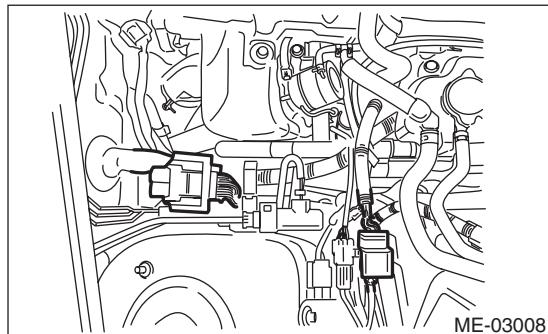
- 1) Set the vehicle on a lift.
- 2) Open the front hood fully and support with the front hood stay.
- 3) Remove the collector cover.
- 4) Collect the refrigerant from A/C system. <Ref. to AC-21, Refrigerant Recovery Procedure.>
- 5) Release the fuel pressure. <Ref. to FU(H4SO)-45, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 6) Disconnect the battery cable, and remove the battery from the vehicle.
- 7) Open the fuel filler flap lid, and remove the fuel filler cap.
- 8) Remove the air cleaner case and air intake boot. <Ref. to IN(H4DOTC)-8, REMOVAL, Air Cleaner Case.>
- 9) Remove the under cover.
- 10) Remove the radiator from the vehicle. <Ref. to CO(H4SO)-25, REMOVAL, Radiator.>
- 11) Remove the coolant filler tank. <Ref. to CO(H4SO)-40, REMOVAL, Coolant Filler Tank.>
- 12) Remove the secondary air pump. <Ref. to EC(H4DOTC)-9, INSPECTION, Secondary Air Pump.>
- 13) Disconnect the A/C pressure hoses from A/C compressor.



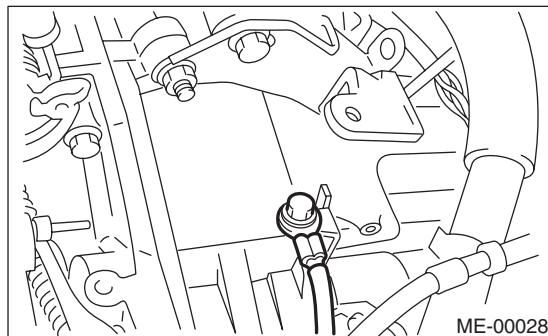
- 14) Remove the intercooler. <Ref. to IN(H4DOTC)-11, REMOVAL, Intercooler.>

- 15) Disconnect the following connectors and cables.

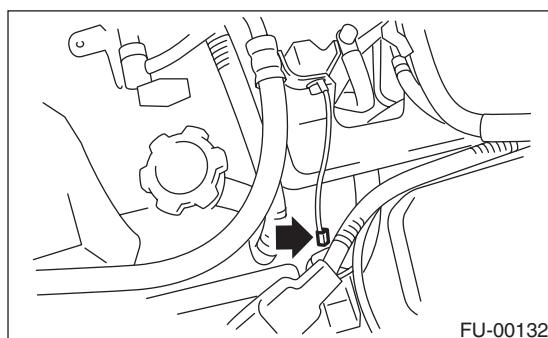
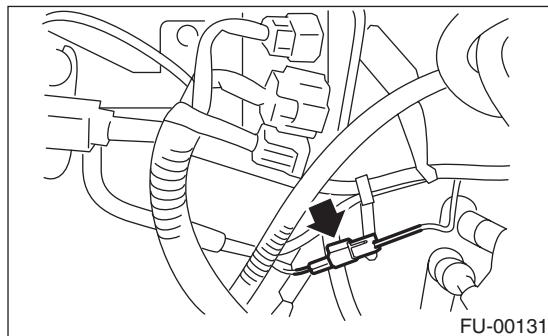
- (1) Engine harness connectors



- (2) Engine ground terminal



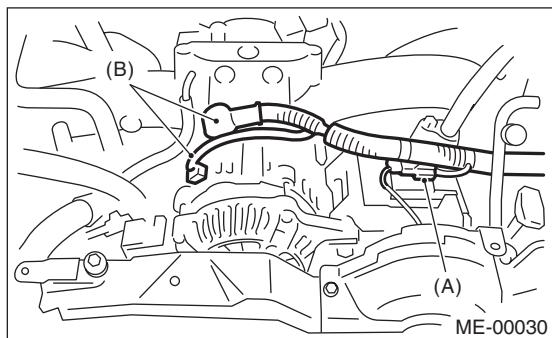
- (3) Right and left engine ground cables



# Engine Assembly

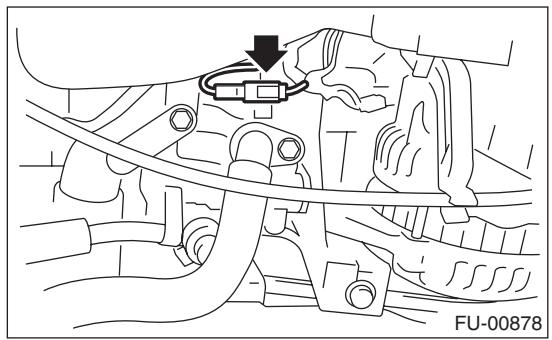
## MECHANICAL

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



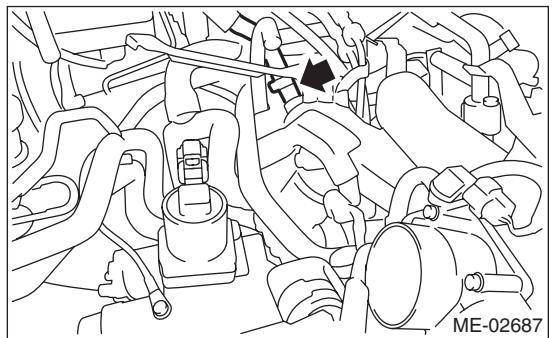
(A) A/C compressor connector  
(B) Generator connector and terminal

(5) Power steering switch connector



16) Disconnect the following hoses.

(1) Brake booster vacuum hose

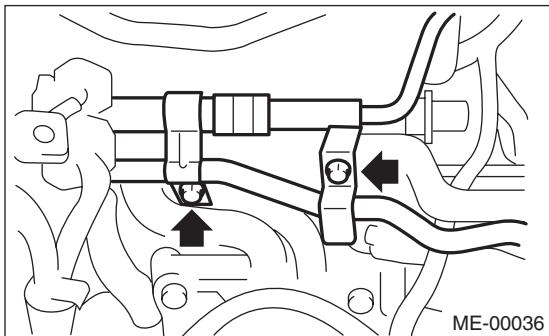


(2) Heater inlet and outlet hoses

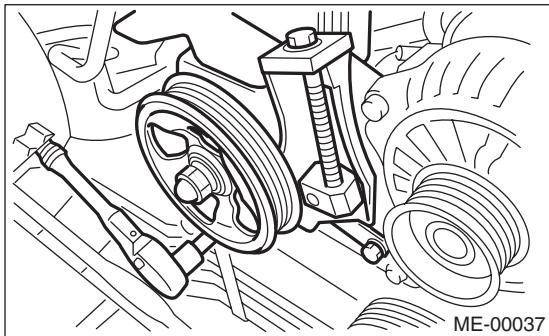
17) Remove the power steering pump.

(1) Remove the front side belts. <Ref. to ME(H4DOTC)-39, FRONT SIDE BELT, REMOVAL, V-belt.>

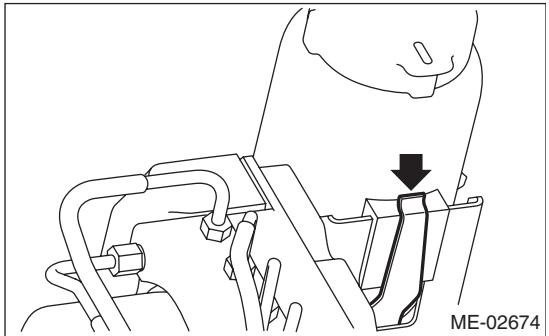
(2) Remove the power steering pipe from the fuel pip protector RH along with the bracket.



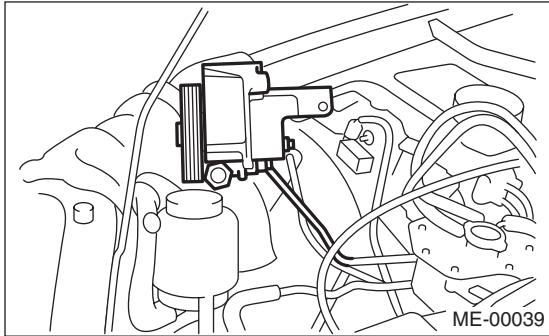
(3) Remove the power steering pump from the engine.



(4) Remove the power steering reservoir tank from the bracket by pulling it upwards.



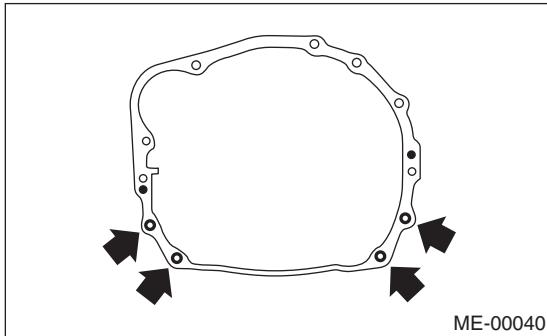
(5) Place the power steering pump on the right side wheel apron.



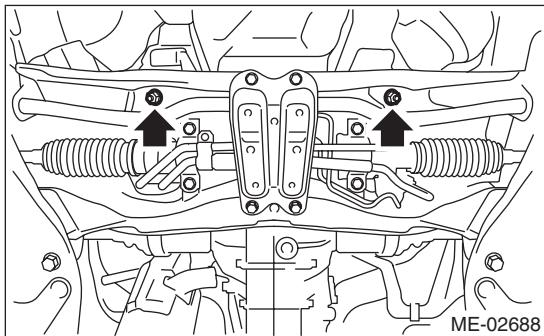
18) Lift up the vehicle.

19) Remove the front and center exhaust pipes.  
 <Ref. to EX(H4DOTC)-8, REMOVAL, Center Exhaust Pipe. > <Ref. to EX(H4DOTC)-6, REMOVAL, Front Exhaust Pipe. >

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

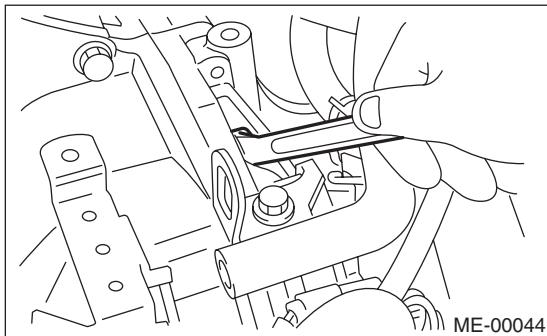


21) Remove the nuts which install front cushion rubber onto front crossmember.

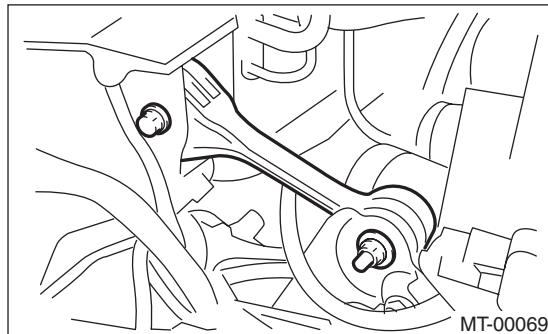


22) Separate the torque converter clutch from drive plate. (AT model)

- (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 crank-shaft using socket wrench.



23) Remove the pitching stopper.

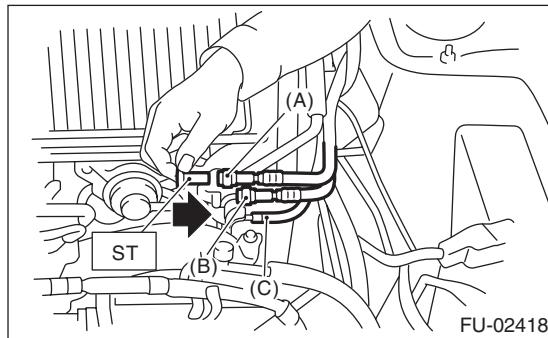


24) Using the ST to remove the fuel hose from each fuel pipe. <Ref. to FU(H4DOTC)-66, REMOVAL, Fuel Delivery, Return and Evaporation Lines. >

**CAUTION:**

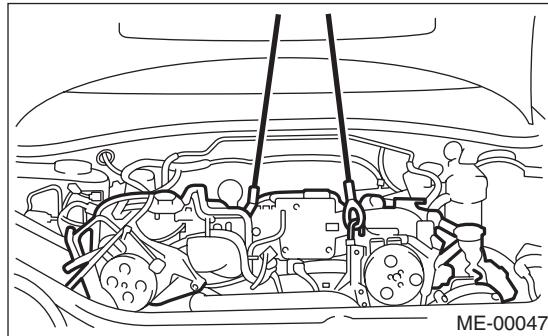
- Be careful not to spill fuel.
- Catch the fuel from hoses using a container or cloth.

ST 42099AE000 CONNECTOR REMOVER



(A) Fuel delivery hose  
 (B) Return hose  
 (C) Evaporation hose

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



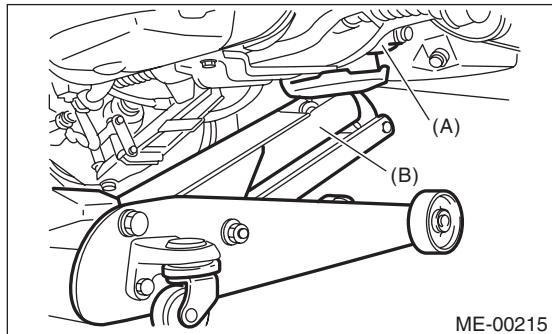
# Engine Assembly

## MECHANICAL

26) 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.



ME-00215

(A) Transmission

(B) Garage jack

27) Separation of engine and transmission.

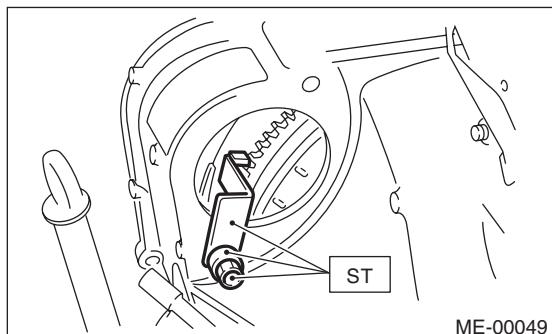
**CAUTION:**

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

(1) Remove the starter. <Ref. to SC(H4SO)-6, REMOVAL, Starter.>

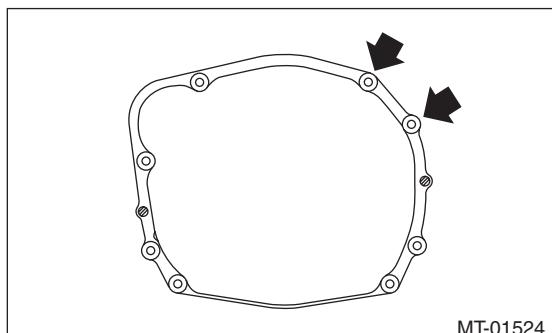
(2) Set the ST to torque converter clutch case. (AT model)

ST 498277200 STOPPER SET



ME-00049

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



MT-01524

28) 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.

29) Remove the front cushion rubbers.

## B: INSTALLATION

1) Install the front cushion rubbers.

**Tightening torque:**

**35 N·m (3.6 kgf·m, 25.8 ft-lb)**

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

3) Position the engine in engine compartment and connect the engine to the transmission.

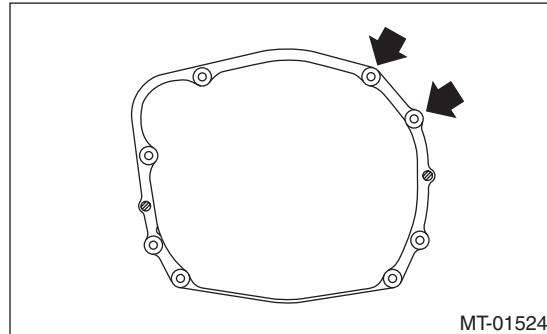
**NOTE:**

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.

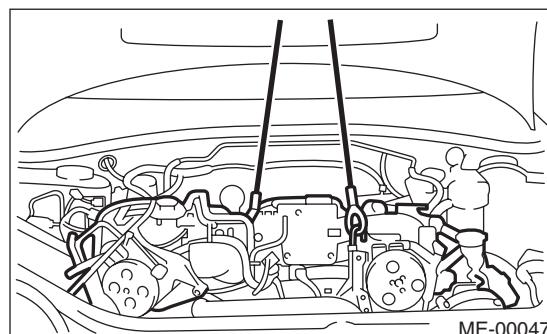
**Tightening torque:**

**50 N·m (5.1 kgf·m, 36.9 ft-lb)**



MT-01524

5) Remove the lifting device and wire ropes.



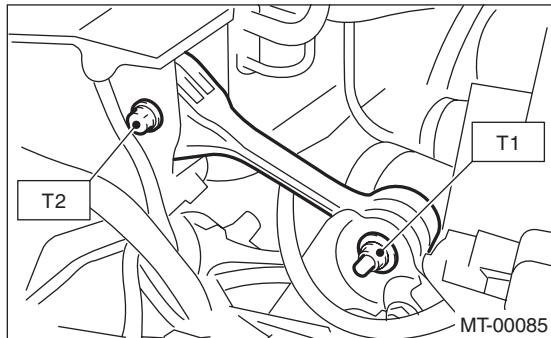
ME-00047

- 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 converter case. (AT model)

### NOTE:

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

ST 498277200 STOPPER SET

- 9) Install the starter. <Ref. to SC(H4SO)-6, INSTALLATION, Starter.>

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

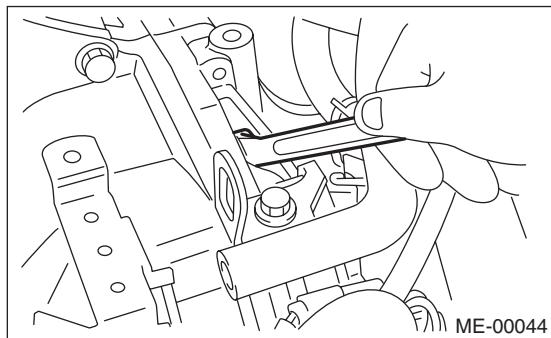
- (1) Tighten the bolts which hold torque converter clutch to drive plate.
- (2) Tighten other bolts while rotating the crank-shaft using socket wrench.

### NOTE:

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

### Tightening torque:

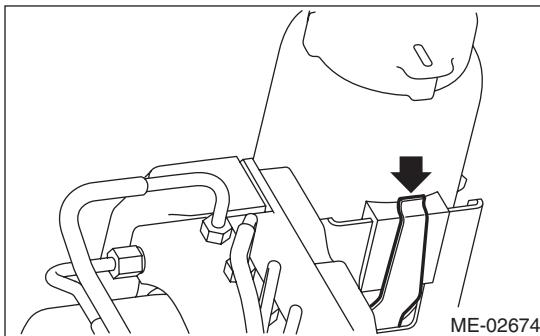
**25 N·m (2.5 kgf-m, 18.4 ft-lb)**



- (3) Install the service hole plug.

- 11) Install the power steering pump.

- (1) Install the power steering reservoir tank to the bracket.

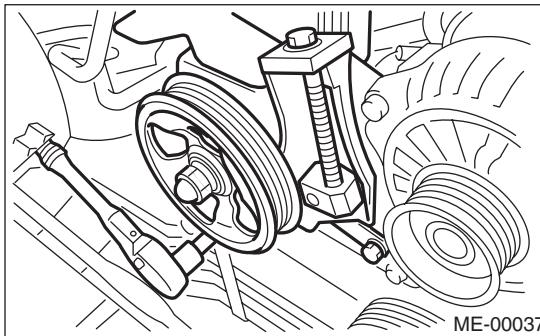


- (2) Install the power steering pump.

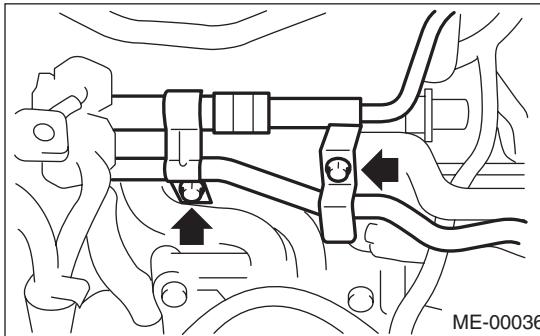
### Tightening torque:

Refer to "COMPONENT" of "Power Steering" section for the tightening torque.

<Ref. to PS-4, COMPONENT, General Description. >



- (3) Install the power steering pipes onto the fuel pipe protector RH.



- (4) Install and adjust the front side belt. <Ref. to ME(H4DOTC)-39, FRONT SIDE BELT, INSTALLATION, V-belt.>

- 12) Lift up the vehicle.

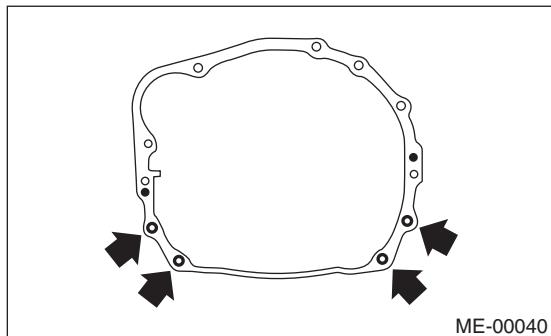
# Engine Assembly

## MECHANICAL

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

### Tightening torque:

**50 N·m (5.1 kgf·m, 36.9 ft-lb)**



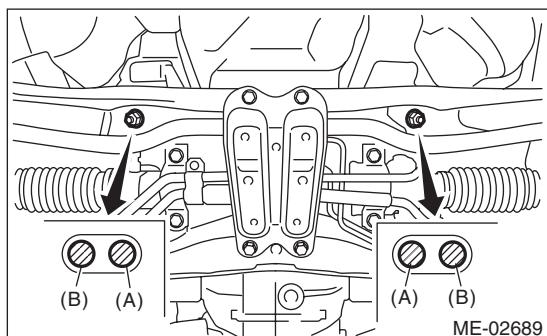
14) Tighten the nuts which install the front cushion rubber onto crossmember.

### NOTE:

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

### Tightening torque:

**85 N·m (8.7 kgf·m, 62.7 ft-lb)**



15) Install the front and center exhaust pipe.

<Ref. to EX(H4DOTC)-7, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H4DOTC)-9, INSTALLATION, Center Exhaust Pipe.>

16) Lower the vehicle.

17) Connect the following hoses.

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

18) Connect the following connectors and terminals.

- (1) Engine ground terminal

### 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 switch connector

19) Install the intercooler. <Ref. to IN(H4DOTC)-11, INSTALLATION, Intercooler.>

20) Install the air cleaner case and air intake boot. <Ref. to IN(H4DOTC)-8, INSTALLATION, Air Cleaner Case.>

21) Install the A/C pressure hoses. <Ref. to AC-36, INSTALLATION, Hose and Tube.>

22) Install the radiator. <Ref. to CO(H4SO)-27, INSTALLATION, Radiator.>

23) Install the under cover.

24) Install the coolant filler tank.

<Ref. to CO(H4SO)-40, INSTALLATION, Coolant Filler Tank.>

25) Install the secondary air pump. <Ref. to EC(H4DOTC)-9, INSTALLATION, Secondary Air Pump.>

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

27) Fill engine coolant.

<Ref. to CO(H4SO)-17, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

28) Check the ATF level and replenish it if necessary. (AT model) <Ref. to 4AT-28, INSPECTION, Automatic Transmission Fluid.>

29) Charge the A/C system with refrigerant.

<Ref. to AC-22, PROCEDURE, Refrigerant Charging Procedure.>

30) Install the collector cover.

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

32) Lower the vehicle from lift.

## C: INSPECTION

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

2) Check that 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.