

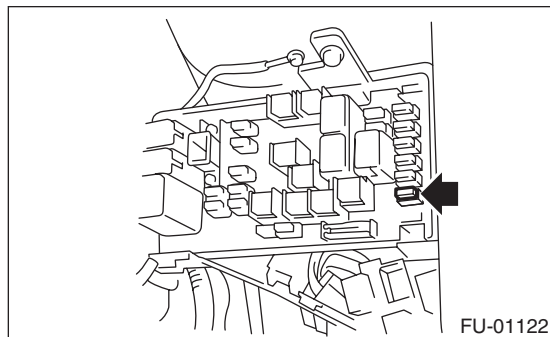
# Engine Assembly

MECHANICAL

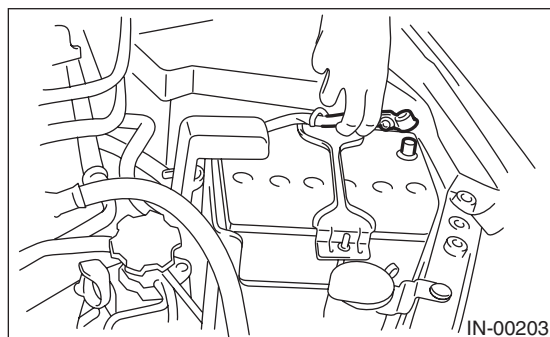
## 9. Engine Assembly

### A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Open the front hood fully and support with the front food stay.
- 3) Collect the refrigerant from A/C system. <Ref. to AC-19, Refrigerant Recovery Procedure.>
- 4) Release the fuel pressure.
  - (1) Remove the fuse of fuel pump from main fuse box.

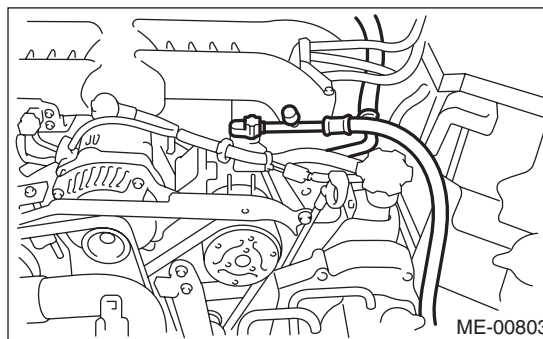


- (2) Start the engine and run it until it stalls.
  - (3) After the engine stalls, crank it for five more seconds.
  - (4) Turn the ignition switch to OFF.
- 5) Remove the fuel filler cap.
- 6) Remove the collector cover.
- 7) Disconnect the ground cable from battery.



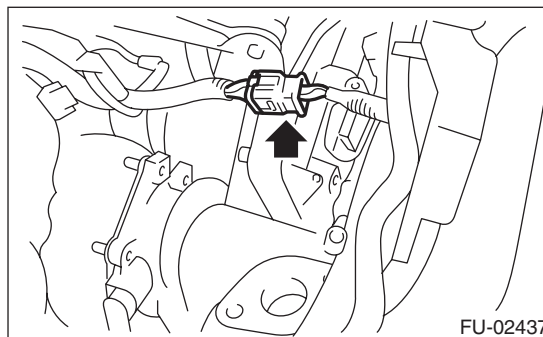
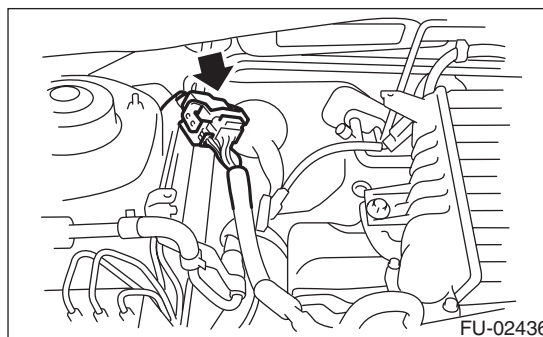
- 8) Remove the radiator from vehicle. <Ref. to CO(H4DOTC)-19, REMOVAL, Radiator.>
- 9) Remove the coolant filler tank. <Ref. to CO(H4DOTC)-31, REMOVAL, Coolant Filler Tank.>

- 10) Disconnect the A/C pressure hoses from A/C compressor.

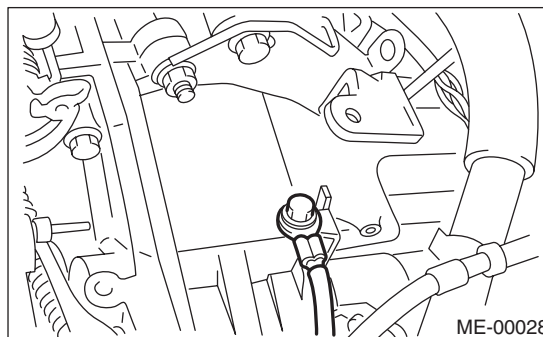


- 11) Remove the air intake system.
  - (1) Remove the intercooler. <Ref. to IN(H4DOTC)-12, REMOVAL, Intercooler.>
  - (2) Remove the air cleaner element and air cleaner case. <Ref. to IN(H4DOTC)-8, REMOVAL, Air Cleaner Case.>
- 12) Disconnect the following connectors and cables.

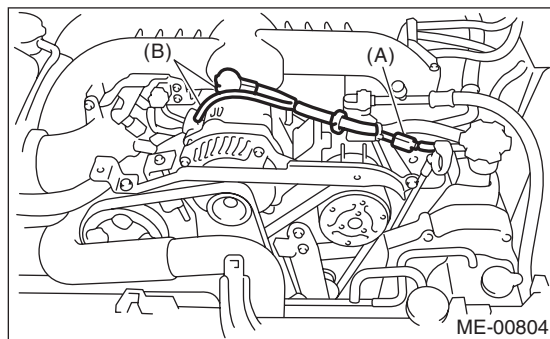
- (1) Engine harness connectors



- (2) Engine ground terminal



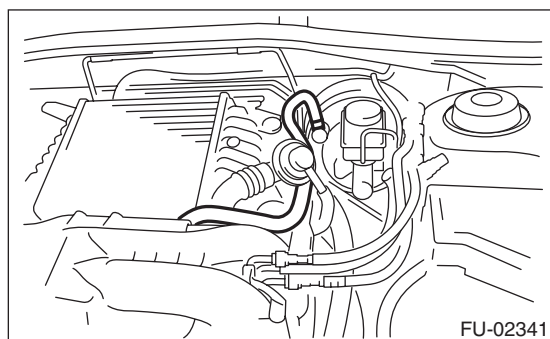
(3) Generator connector, terminal and A/C compressor connector



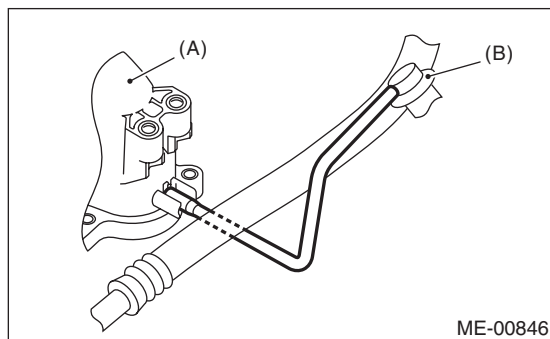
- (A) A/C compressor connector
- (B) Generator connector and terminal

13) Disconnect the following hoses.

(1) Brake booster vacuum hose

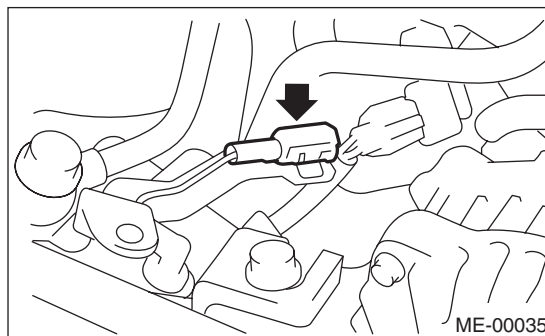


- (2) Heater inlet and outlet hoses
- (3) Remove the hose between intake manifold (A) and pressure regulator (B).

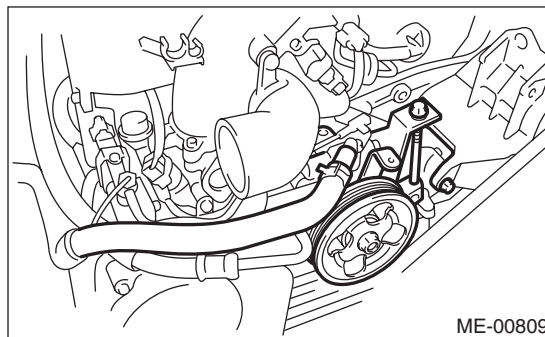


14) Remove the power steering pump from the bracket.

- (1) Loosen the lock bolt and slider bolt, and remove the front side belt. <Ref. to ME(H4DOTC)-36, FRONT SIDE BELT, REMOVAL, V-belt.>
- (2) Disconnect the power steering pressure switch connector.

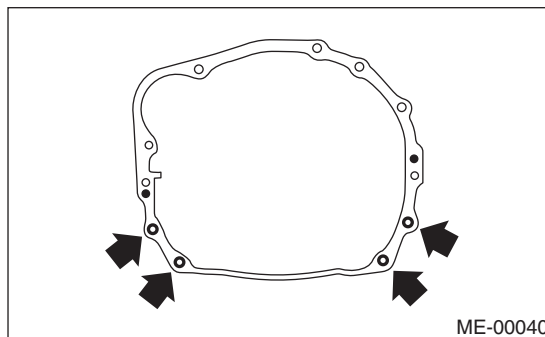


(3) Remove the power steering pump from the engine. <Ref. to PS-45, REMOVAL, Oil Pump.>



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

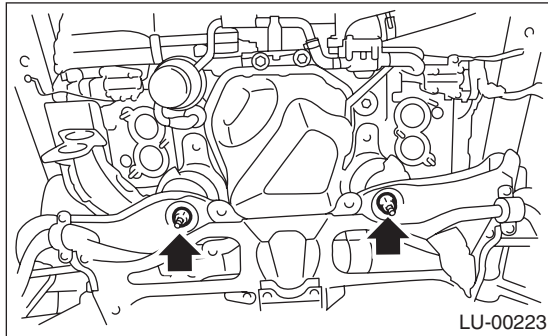
- 15) Lift-up the vehicle.
- 16) Remove the center exhaust pipe. <Ref. to EX(H4DOTC)-8, REMOVAL, Center Exhaust Pipe.>
- 17) Remove the nuts which hold lower side of the transmission to the engine.



# Engine Assembly

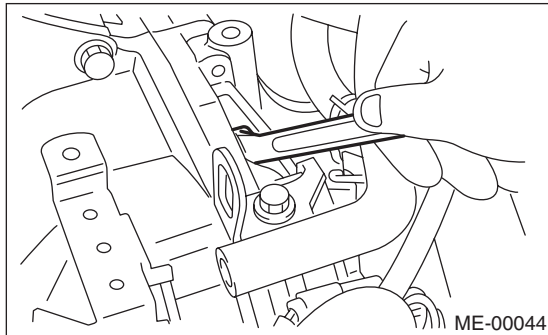
## MECHANICAL

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

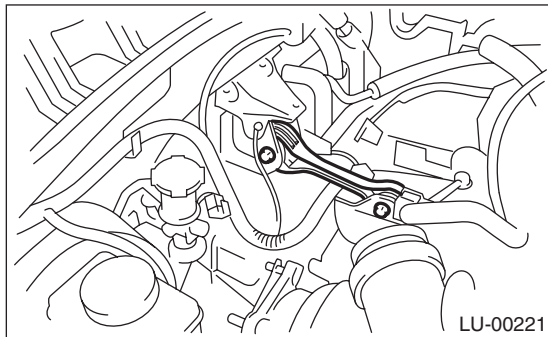


- 19) Separate the torque converter clutch from drive plate. (AT model)

- (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 engine using socket wrench.



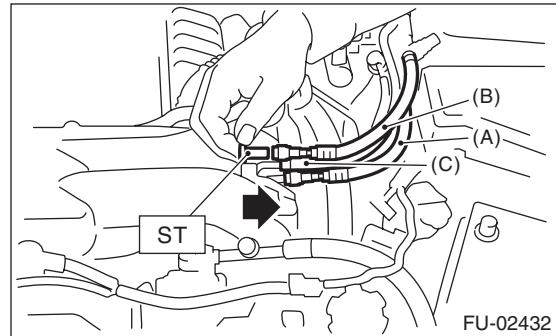
- 20) Remove the pitching stopper.



- 21) Disconnect the fuel hoses from fuel pipe.
- (1) Disconnect the connector of fuel pipe by pushing the ST in the direction of arrow.
- ST 42099AE000 CONNECTOR REMOVER
- (2) Remove the clip and disconnect the evaporation hose from the pipe.

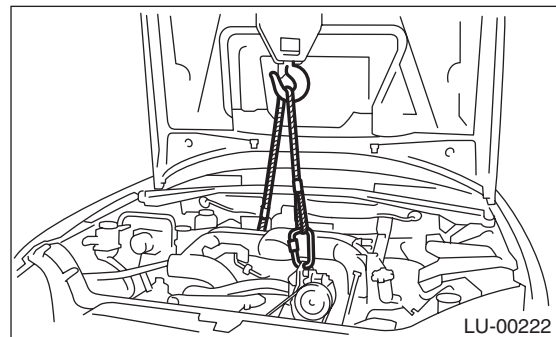
### CAUTION:

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



- (A) Fuel delivery hose  
(B) Fuel return hose  
(C) Evaporation hose

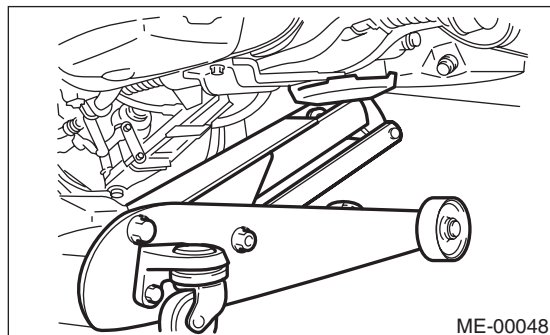
- 22) Support the engine with a lifting device and wire ropes.



23) Support the transmission with a garage jack.

**CAUTION:**

**Doing this is very important because the transmission lowers for its own weight. This work is also of great importance for facilitating reinstallation.**



**CAUTION:**

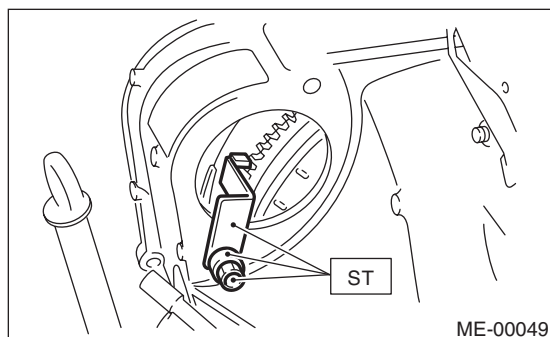
**Before removing the engine away from transmission, check to be sure no work has been overlooked.**

24) Separation of engine and transmission.

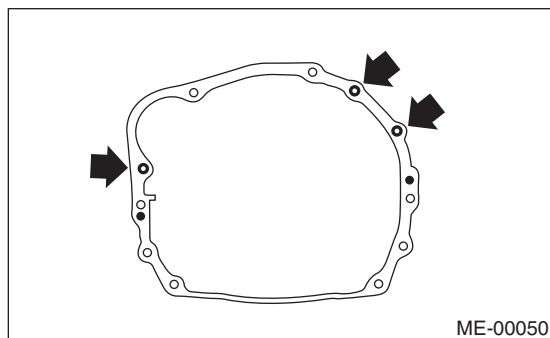
(1) Remove the starter. <Ref. to SC(H4SO)-6, REMOVAL, Starter.>

(2) Attach the ST to converter case. (AT model)

ST 498277200 STOPPER SET



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



25) 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.

26) Remove the front cushion rubbers.

**B: INSTALLATION**

1) Install the front cushion rubbers to engine.

**Tightening torque:**

**35 N·m (3.6 kgf·m, 25.8 ft·lb)**

2) Install the transmission onto the engine.

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

**NOTE:**

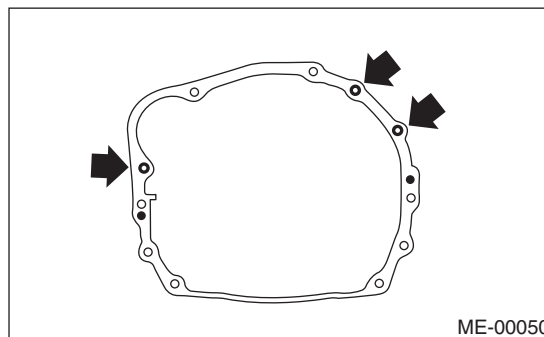
Be careful not to damage adjacent parts or body panels with the crank pulley, oil pressure gauge, etc.

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

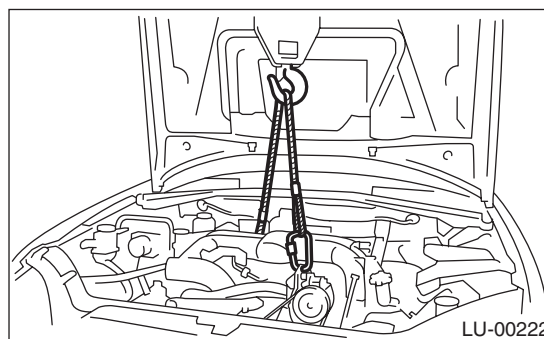
3) Tighten the bolts which hold upper side of transmission to engine.

**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.

# Engine Assembly

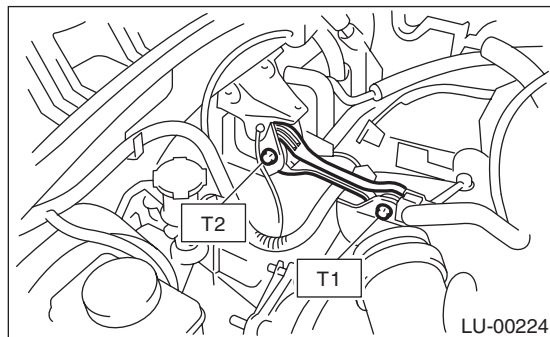
## MECHANICAL

6) Attach 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, 43 ft·lb)**



7) 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

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

9) 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 engine using the ST.

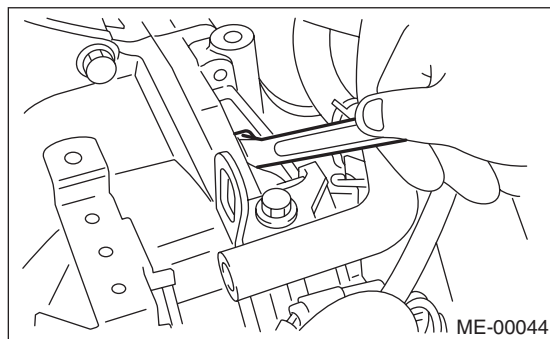
**CAUTION:**

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

ST 499977400 CRANK PULLEY WRENCH

**Tightening torque:**

**25 N·m (2.5 kgf·m, 18.1 ft·lb)**

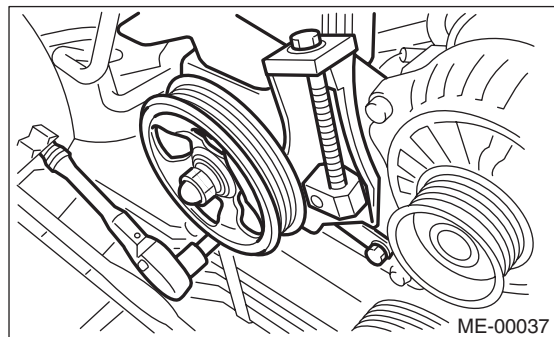


10) Install the power steering pump to the bracket.

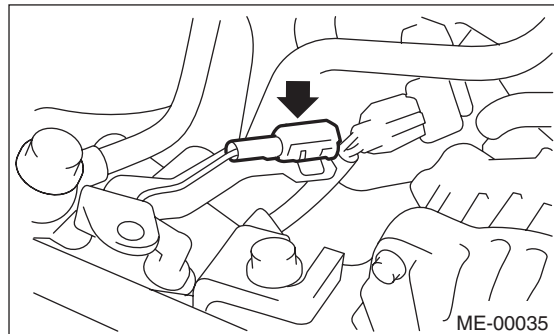
(1) Install the power steering pump.

**Tightening torque:**

**20.1 N·m (2.05 kgf·m, 14.8 ft·lb)**



(2) Connect the power steering pressure switch connector.



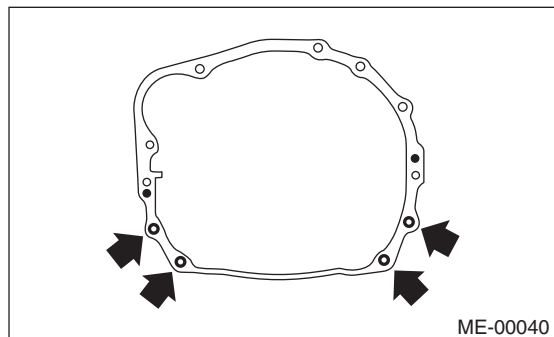
(3) Install and adjust the front side belt. <Ref. to ME(H4DOTC)-37, FRONT SIDE BELT, INSTALLATION, V-belt.>

11) Lift-up the vehicle.

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

**Tightening torque:**

**50 N·m (5.1 kgf·m, 36.9 ft·lb)**



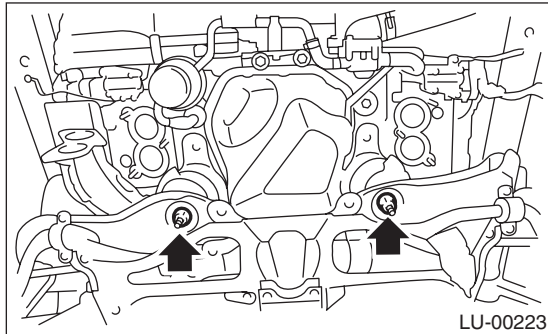
13) Tighten the nuts which install the front cushion rubber onto crossmember.

**Tightening torque:**

**75 N·m (7.6 kgf-m, 55.3 ft-lb)**

**NOTE:**

Make sure that the front cushion rubber mounting bolts and locator are securely installed.



14) Install the center exhaust pipe. <Ref. to EX(H4DOTC)-9, INSTALLATION, Center Exhaust Pipe.>

15) Lower the vehicle.

16) Connect the following hoses.

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

17) Connect the following connectors and terminals.

- (1) Engine ground terminal
- (2) Engine harness connectors
- (3) Generator connector and terminal
- (4) A/C compressor connector

18) 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 case. <Ref. to IN(H4DOTC)-8, INSTALLATION, Air Cleaner Case.>

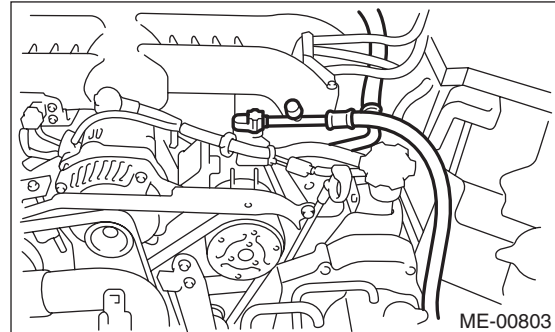
19) Install the A/C pressure hoses.

**NOTE:**

Use new O-rings.

**Tightening torque:**

**25 N·m (2.5 kgf-m, 18.1 ft-lb)**



20) Install the radiator. <Ref. to CO(H4DOTC)-20, INSTALLATION, Radiator.>

21) Install the coolant filler tank. <Ref. to CO(H4DOTC)-31, INSTALLATION, Coolant Filler Tank.>

22) Install the window washer tank.

23) Install the battery to the vehicle, and connect the battery ground terminal.

24) Fill engine coolant. <Ref. to CO(H4DOTC)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

25) Charge the A/C system with refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Charging Procedure.>

26) Install the collector cover.

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

28) Take off the vehicle from lift.

**C: INSPECTION**

1) Check that the pipes and hoses are connected securely.

2) Check the engine coolant and ATF are at specified levels.