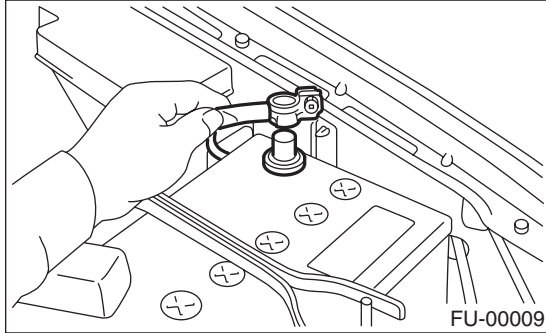


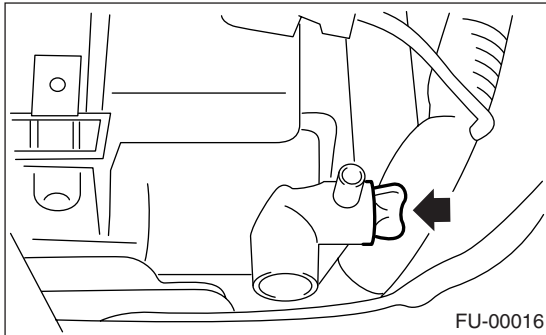
3. Intake Manifold

A: REMOVAL

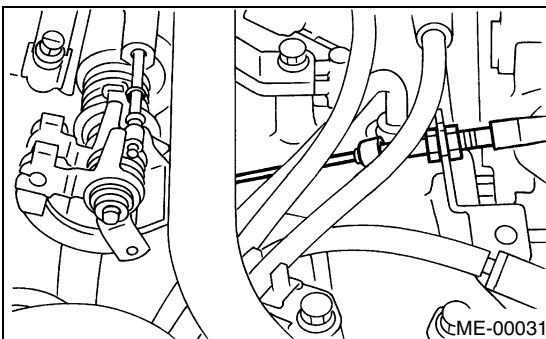
- 1) Release the fuel pressure. <Ref. to FU(H4DOTC)-54, RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
- 2) Open the fuel filler lid and remove the fuel filler cap.
- 3) Disconnect the battery ground cable.



- 4) Lift up the vehicle.
- 5) Remove the under cover.
- 6) Drain the coolant about 3.0 ℓ (3.2 US qt, 2.6 Imp qt).

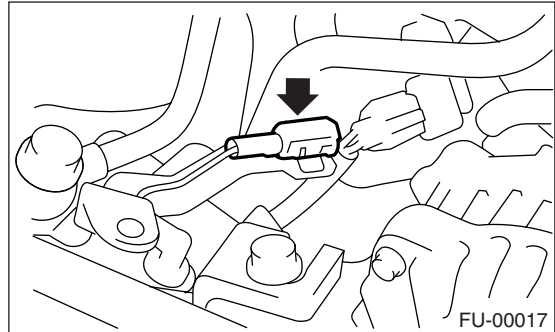


- 7) Remove the air cleaner upper cover and air intake boot. <Ref. to IN(H4DOTC)-7, REMOVAL, Air Cleaner.>
- 8) Remove the air cleaner element.
- 9) Remove the intercooler. <Ref. to IN(H4DOTC)-11, REMOVAL, Intercooler.>
- 10) Disconnect the accelerator cable.



- 11) Remove the coolant filler tank. <Ref. to CO(H4SO)-52, REMOVAL, Coolant Filler Tank.>

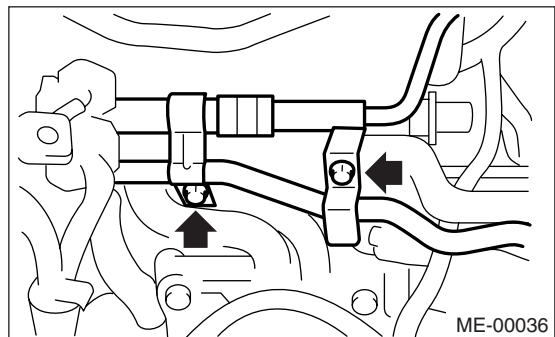
- 12) Remove the power steering pump.
 - (1) Remove the front side V-belt. <Ref. to ME(H4DOTC)-44, REMOVAL, V-belt.>
 - (2) Disconnect the power steering switch connector.



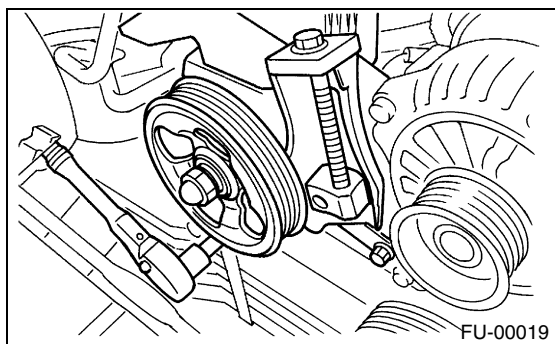
- (3) Remove the bolts which secure the power steering pipe brackets to the intake manifold.

NOTE:

Do not disconnect the power steering hose.



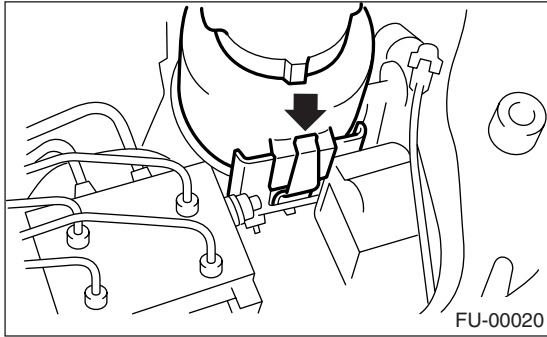
- (4) Remove the bolts which secure the power steering pump bracket.



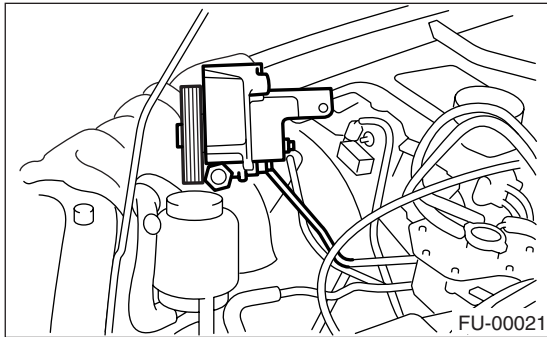
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

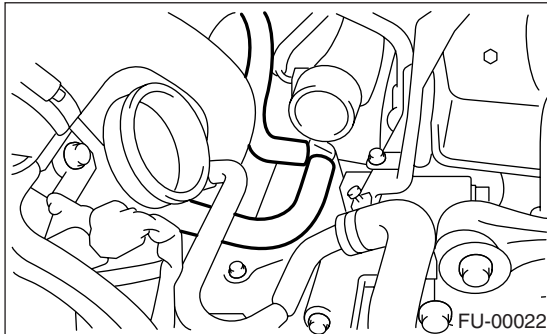
- (5) Remove the power steering tank from the bracket by pulling it upward.



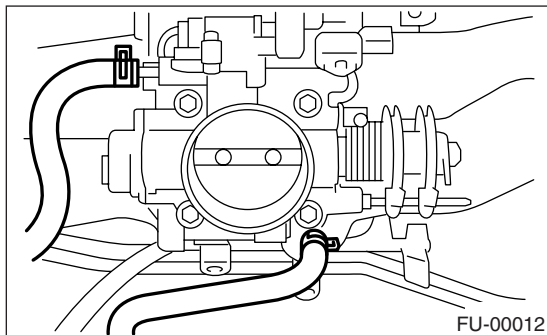
- (6) Place the power steering pump on the right side wheel apron.



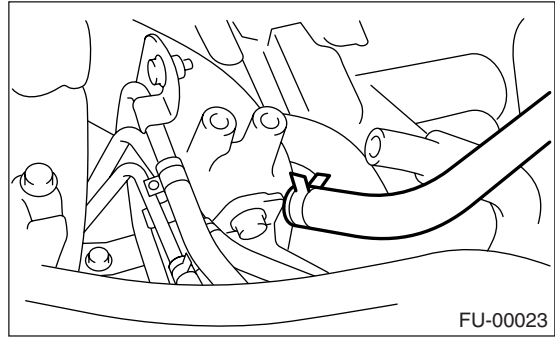
- 13) Disconnect the emission hose from the PCV valve.



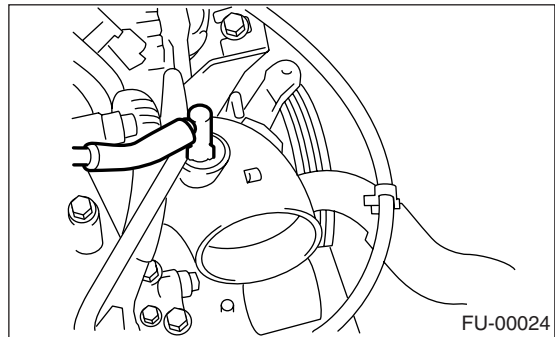
- 14) Disconnect the engine coolant hoses from the throttle body.



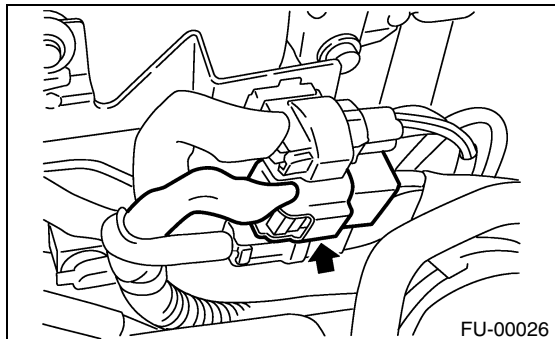
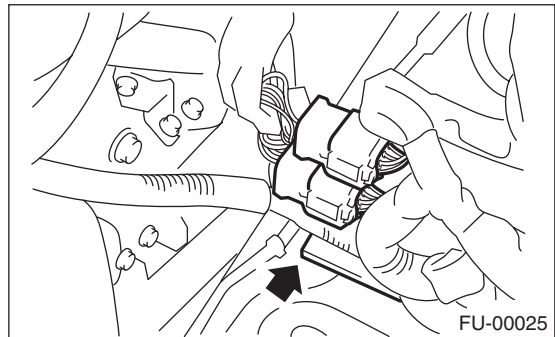
- 15) Disconnect the brake booster hose.



- 16) Disconnect the pressure hose from the intake duct.



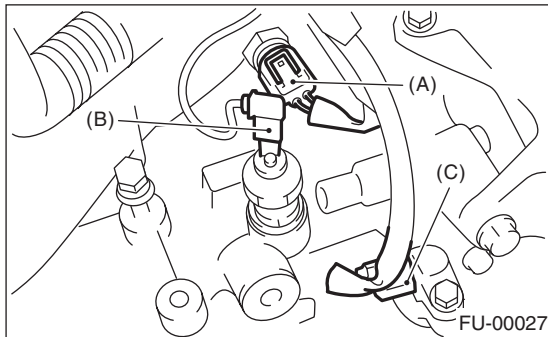
- 17) Disconnect the engine harness connectors from the bulkhead harness connectors.



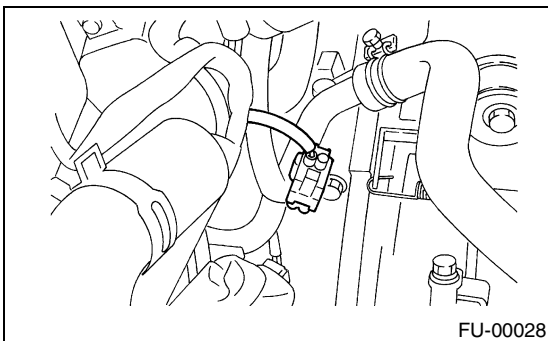
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

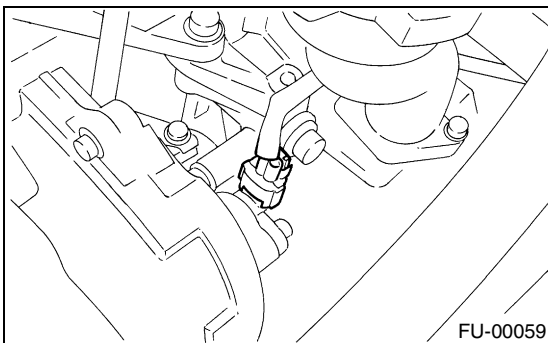
18) Disconnect the connectors from the engine coolant temperature sensor (A), oil pressure switch (B) and crankshaft position sensor (C).



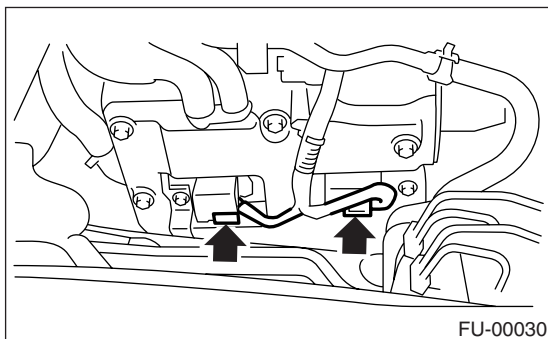
19) Disconnect the knock sensor connector.



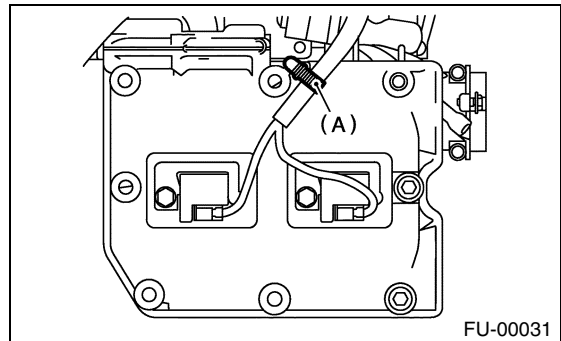
20) Disconnect the connector from the camshaft position sensor.



21) Disconnect the connector from the ignition coil.



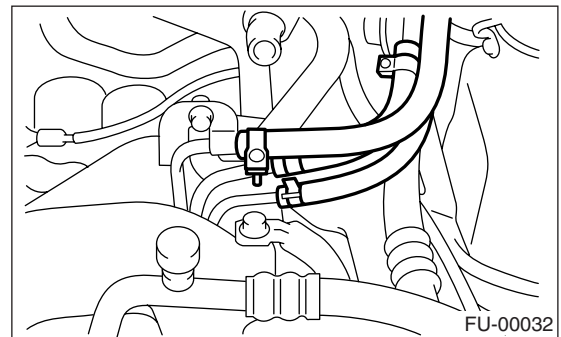
22) Disconnect the engine harness fixed by clip (A) from the bracket.



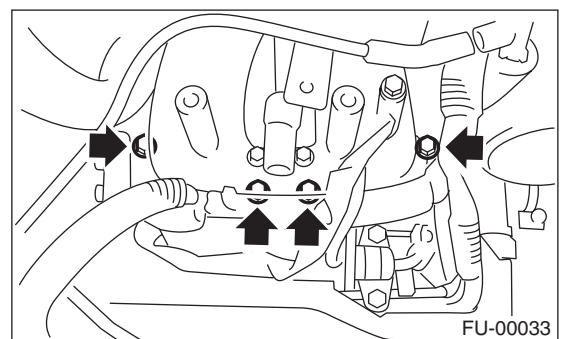
23) Disconnect the fuel delivery hose, return hose and evaporation hose.

CAUTION:

- Do not spill fuel.
- Catch fuel from hoses in a container or cloth.



24) Remove the bolts which secure the intake manifold to the cylinder heads.



25) Remove the intake manifold.

INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

B: INSTALLATION

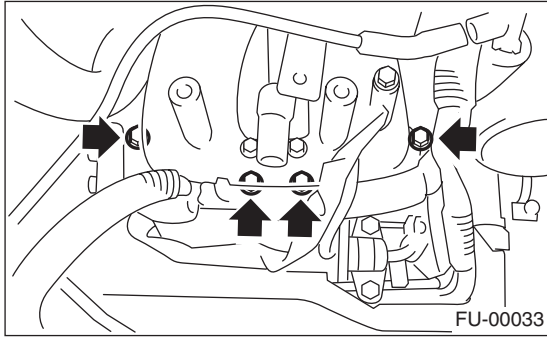
1) Install the intake manifold onto cylinder heads.

NOTE:

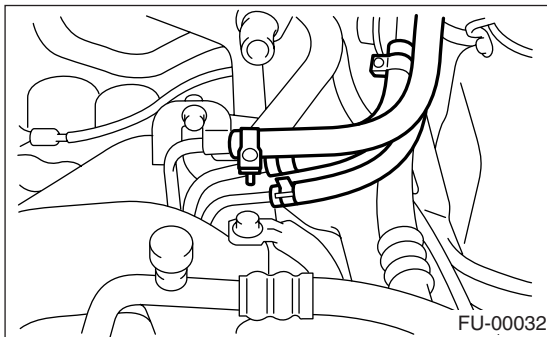
Always use new gaskets.

Tightening torque:

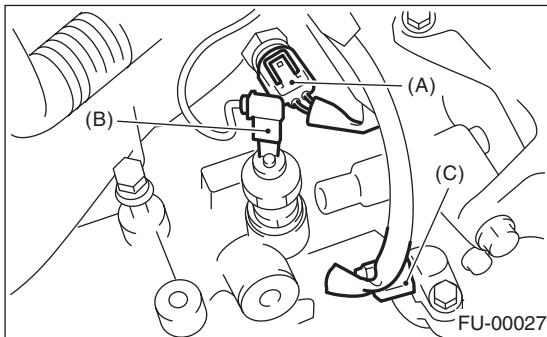
25 N·m (2.5 kgf-m, 18.1 ft-lb)



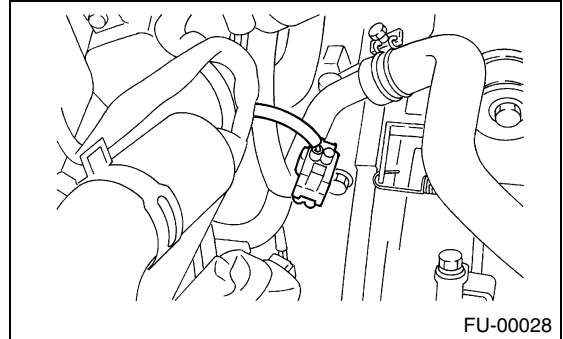
2) Connect the fuel delivery hose, return hose, and evaporation hose.



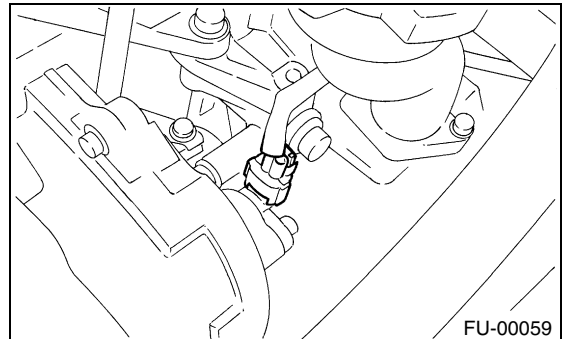
3) Connect the connector to the oil pressure switch (B), crankshaft position sensor (C) and engine coolant temperature sensor (A).



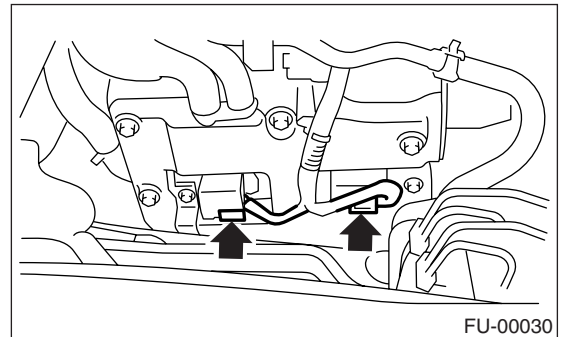
4) Connect the connector to the knock sensor.



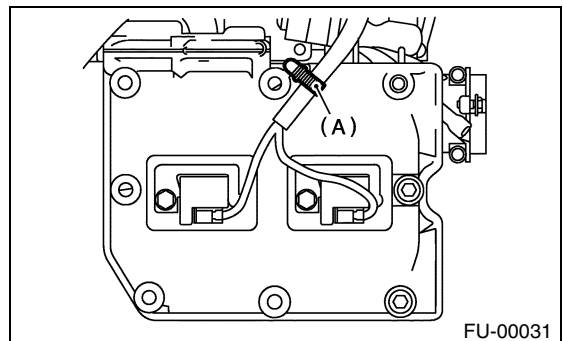
5) Connect the connector to the camshaft position sensor.



6) Connect the connector to the ignition coil.



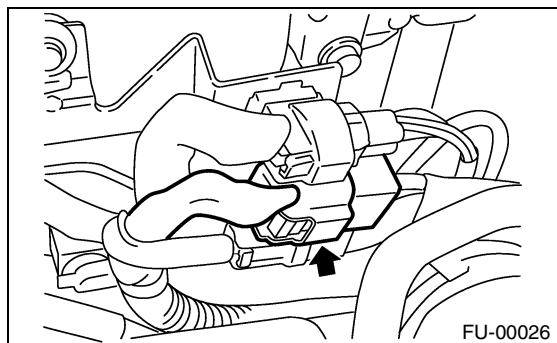
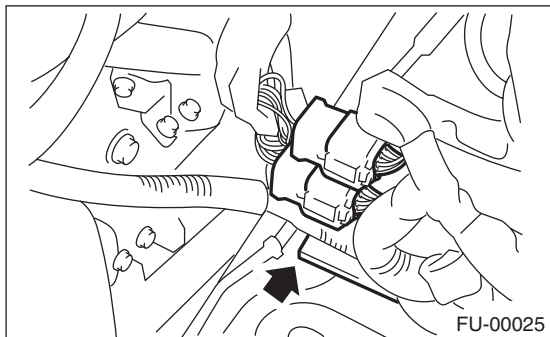
7) Connect the engine harness with clip (A) to the bracket.



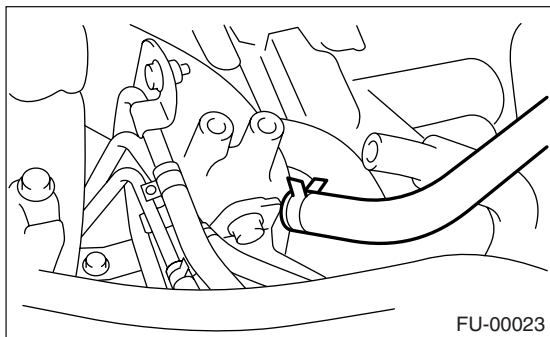
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

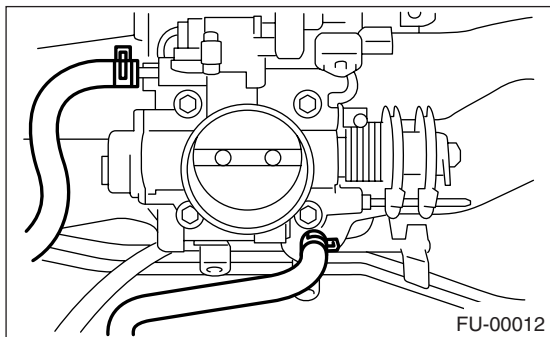
8) Connect the engine harness connector to the bulkhead harness connectors.



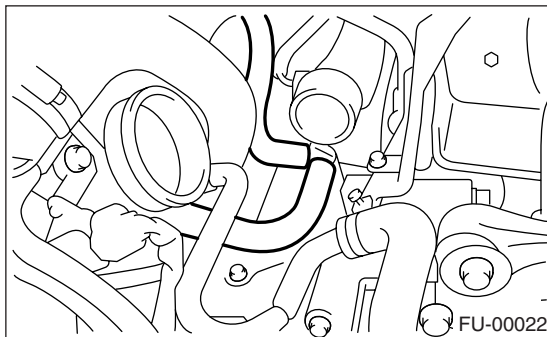
9) Connect the brake booster vacuum hose.



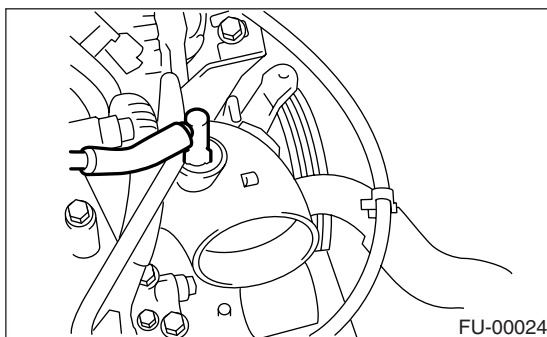
10) Connect the engine coolant hoses to the throttle body.



11) Connect the emission hose to the PCV valve.

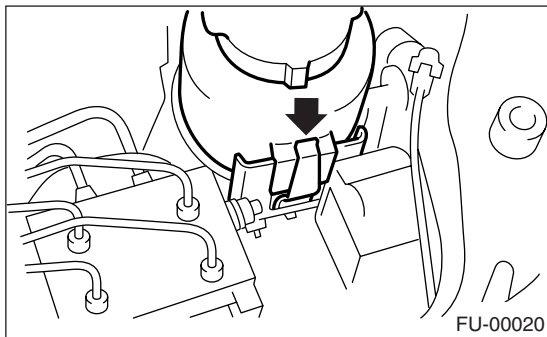


12) Connect the pressure hose to the intake duct.

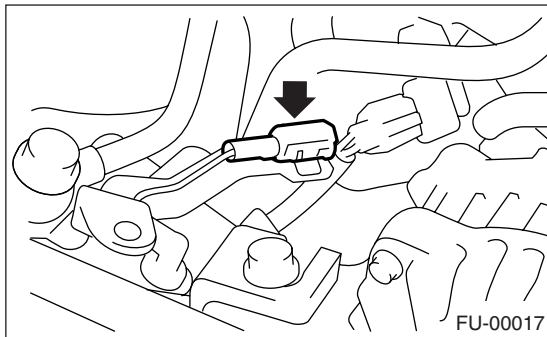


13) Install the power steering pump.

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



(2) Connect the connector to the power steering pump switch.



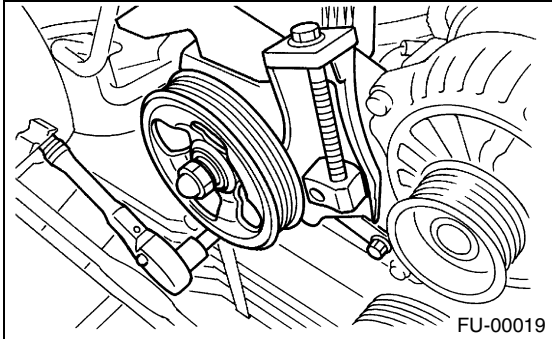
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

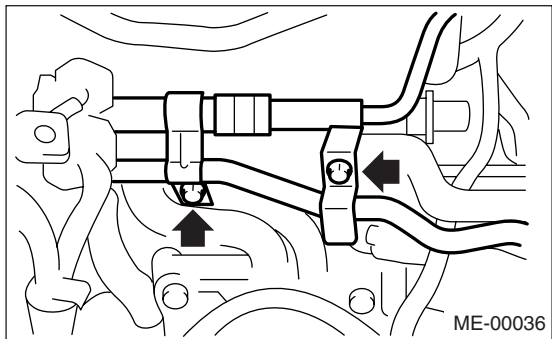
- (3) Install the power steering pump, and tighten the bolts.

Tightening torque:

22 N·m (2.2 kgf-m, 15.9 ft-lb)



- (4) Install the power steering pipe brackets on the right side intake manifold.

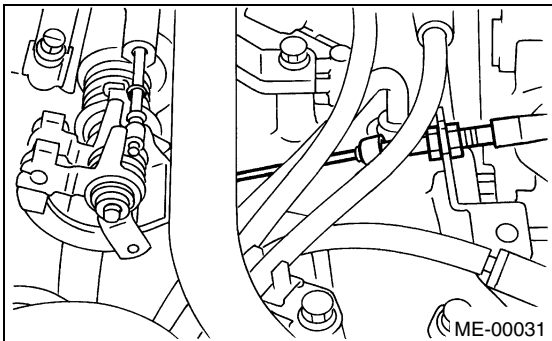


- (5) Install the front side V-belt.

<Ref. to ME(H4DOTC)-44, REMOVAL, V-belt.>

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

- 15) Connect the accelerator cable.

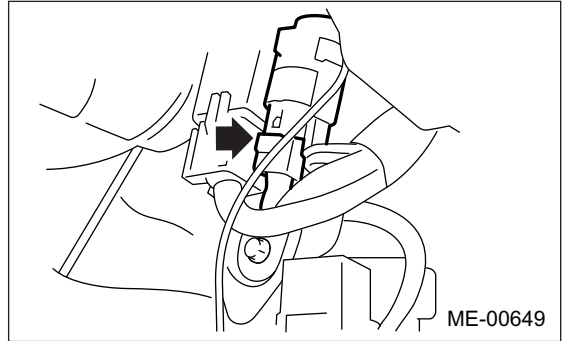


- 16) Install the intercooler. <Ref. to IN(H4DOTC)-12, INSTALLATION, Intercooler.>

- 17) Install the air cleaner element.

- 18) Install the air cleaner upper cover and air intake duct as a unit. <Ref. to IN(H4DOTC)-7, INSTALLATION, Air Cleaner.>

- 19) Connect the connector to the fuel pump relay.



- 20) Connect the battery ground cable.

- 21) Lift up the vehicle.

- 22) Install the under cover.

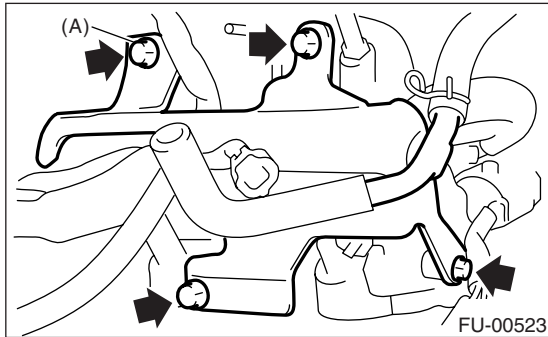
- 23) Fill the coolant. <Ref. to CO(H4SO)-29, FILLING OF ENGINE COOLANT, Engine Coolant.>

INTAKE MANIFOLD

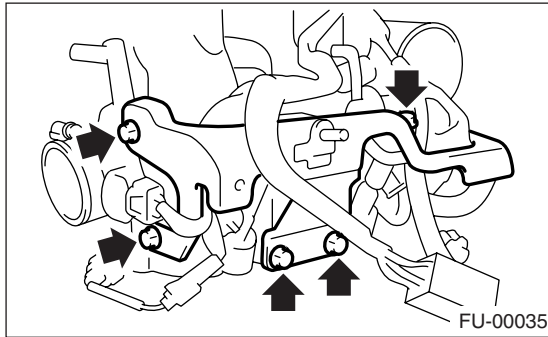
FUEL INJECTION (FUEL SYSTEMS)

C: DISASSEMBLY

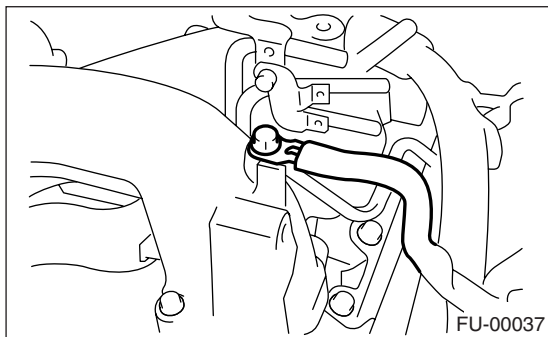
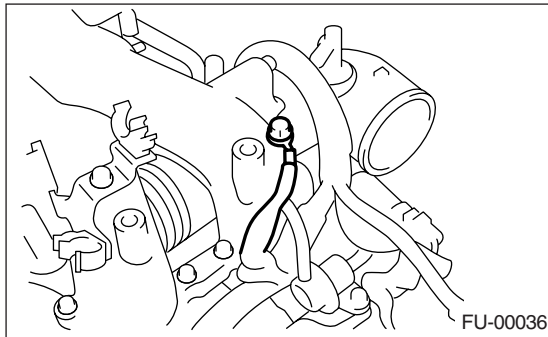
1) Remove the fuel pipe protector LH.



2) Remove the fuel pipe protector RH.

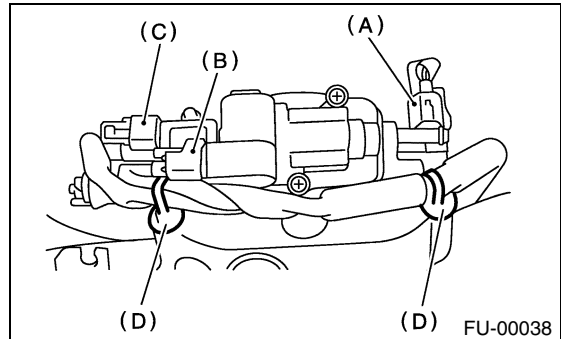


3) Remove the engine ground terminal from the intake manifold.

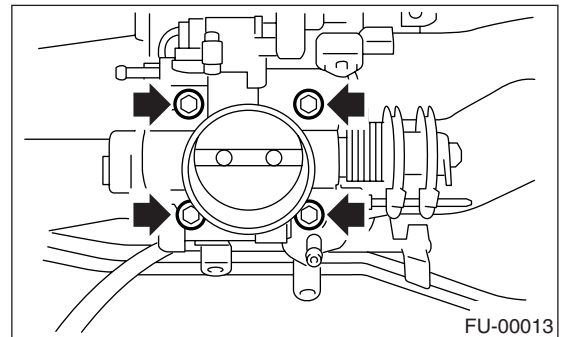


4) Disconnect the connector from the throttle position sensor (A), idle air control solenoid valve (B) and pressure sensor (C).

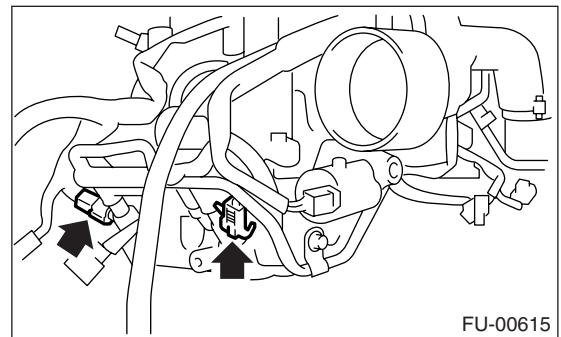
5) Disconnect the engine harness fixed by clip (D) from the intake manifold.



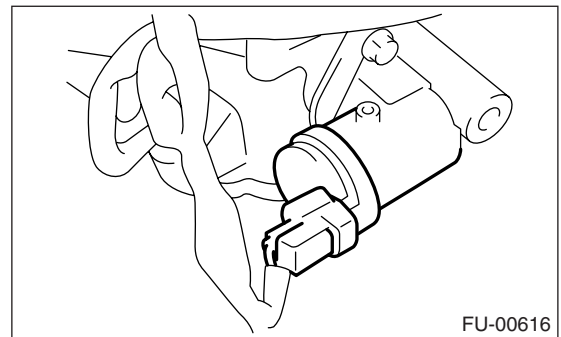
6) Remove the throttle body from the intake manifold.



7) Disconnect the connector from the fuel injector.



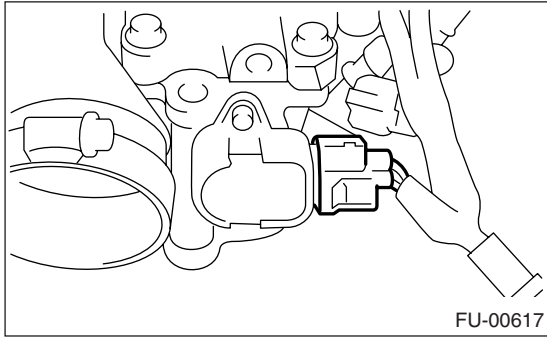
8) Disconnect the connector from the tumble generator valve actuator.



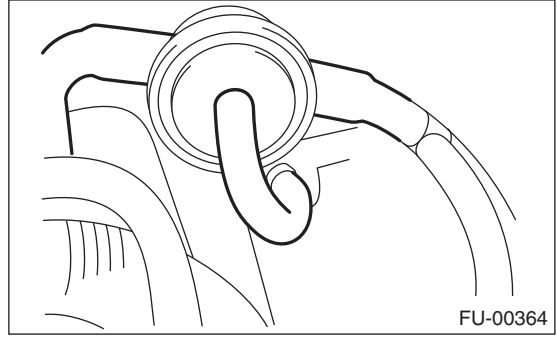
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

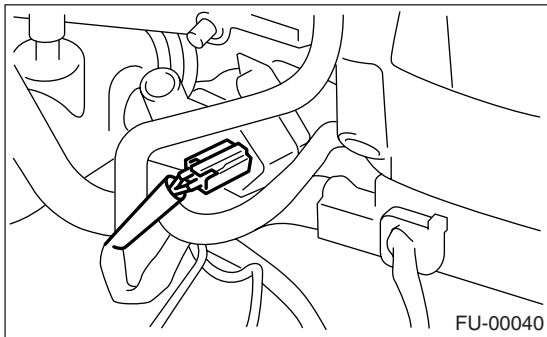
9) Disconnect the connector from the tumble generator valve sensor.



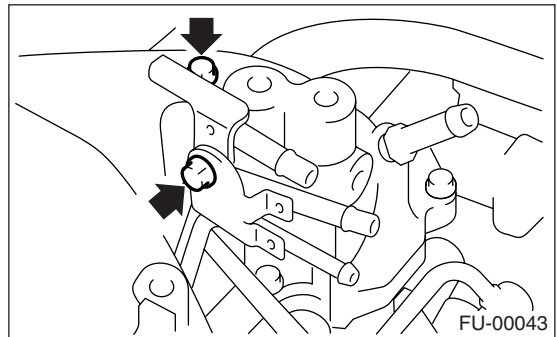
13) Disconnect the evaporation hoses from the purge valve.



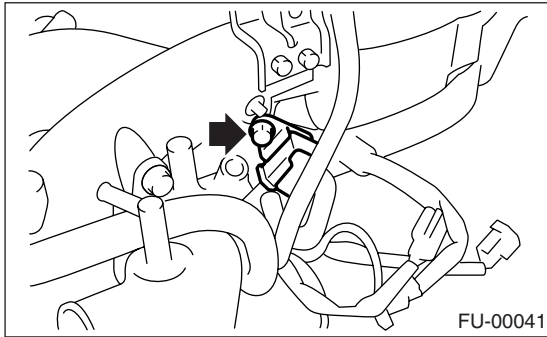
10) Disconnect the connector from the purge control solenoid valve.



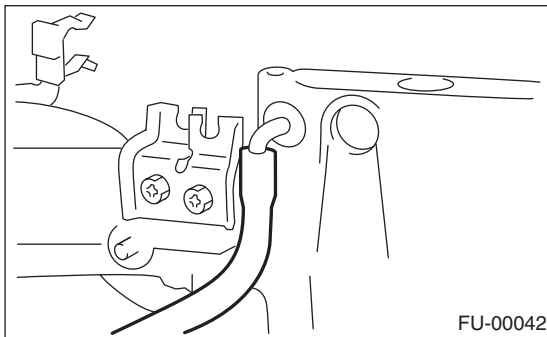
14) Remove the two bolts which hold the fuel pipes on the left side of intake manifold.



11) Remove the purge control solenoid valve.



12) Disconnect the evaporation hose from the intake manifold.

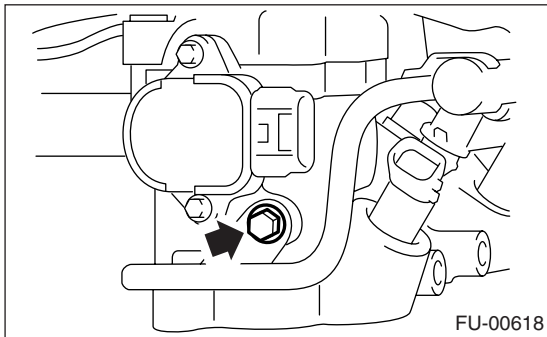
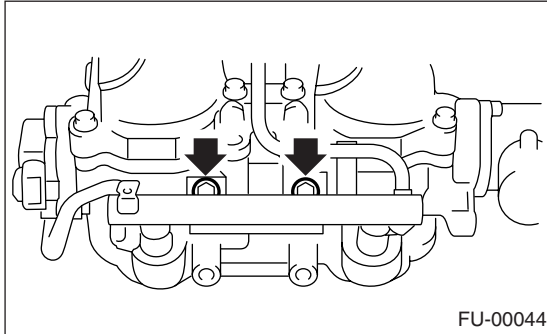


INTAKE MANIFOLD

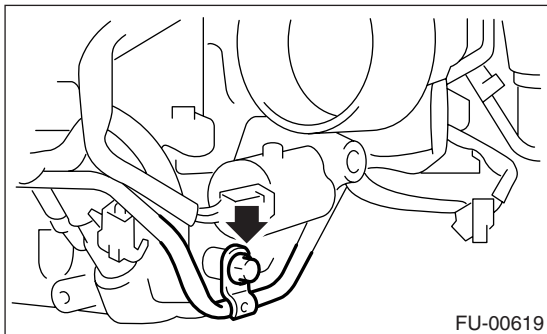
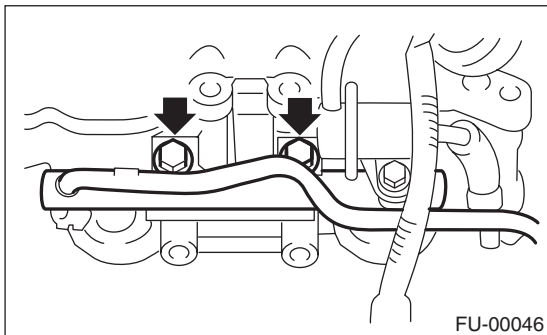
FUEL INJECTION (FUEL SYSTEMS)

15) Remove the bolt which hold the fuel injector pipe onto intake manifold.

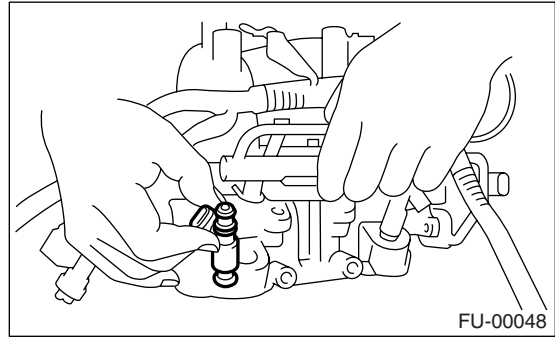
• LH SIDE



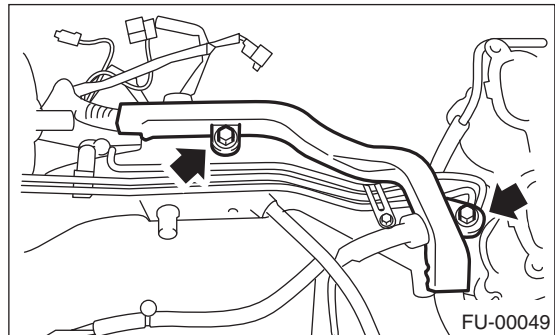
• RH SIDE



16) Remove the fuel injector.

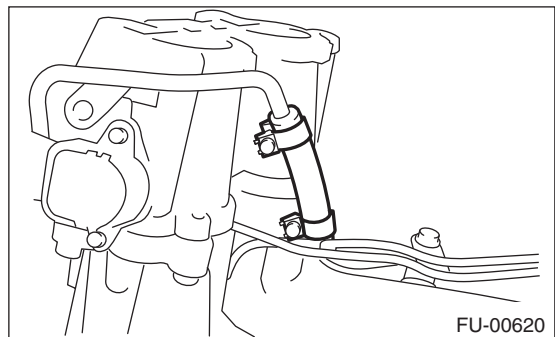


17) Remove the harness bracket which hold the engine harness onto intake manifold.



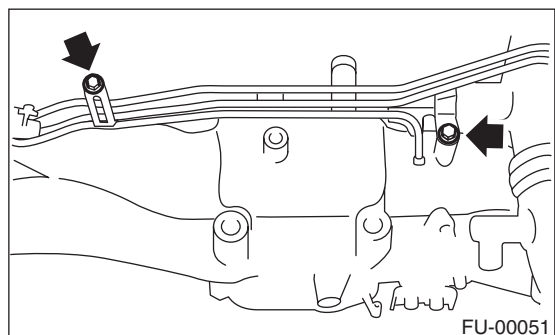
18) Remove the engine harness from the intake manifold.

19) Loosen the clamp which holds the front left side fuel hose to injector pipe and remove the pipe from clamp.



20) Remove the fuel injector pipe LH.

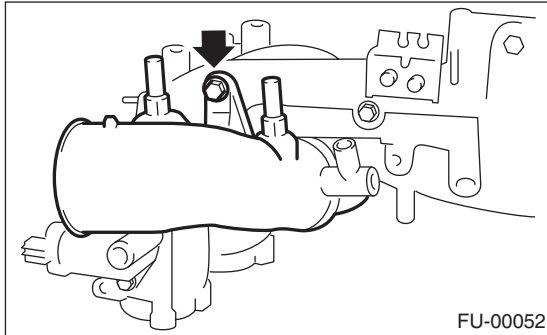
21) Remove the bolts which installs the fuel pipe on intake manifold.



INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

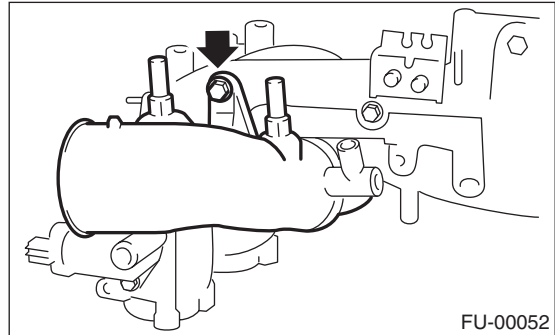
- 22) Remove the fuel pipe assembly and pressure regulator, from the intake manifold.
23) Remove the intake duct from the intake manifold.



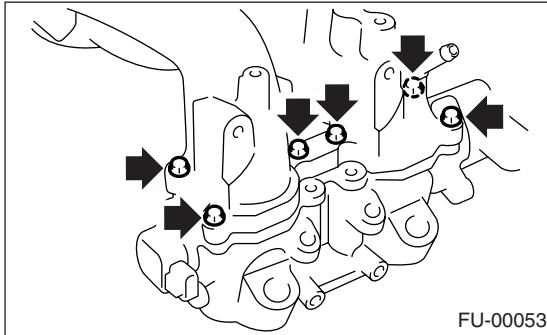
- 2) Install the air intake duct to the intake manifold.

Tightening torque:

19 N·m (1.94 kgf-m, 13.7 ft-lb)



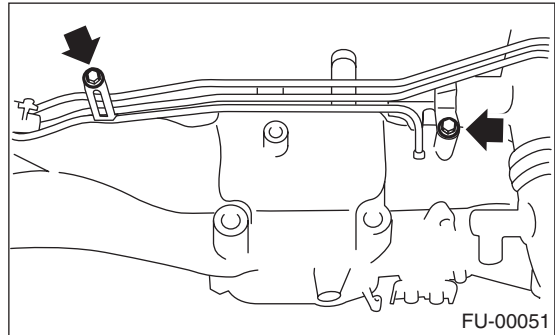
- 24) Remove the tumble generator valve assembly from the intake manifold.



- 3) Install the fuel pipe assembly and pressure regulator, to the intake manifold.

Tightening torque:

4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



D: ASSEMBLY

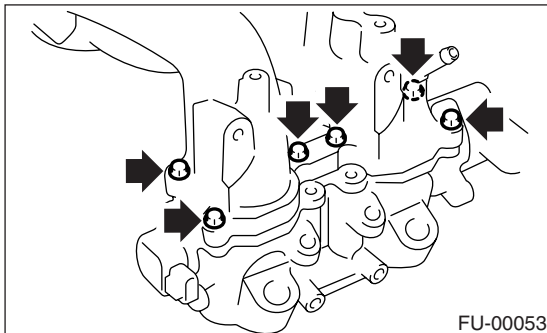
NOTE:

Replace the gasket with a new one.

- 1) Install the tumble generator valve assembly to the intake manifold.

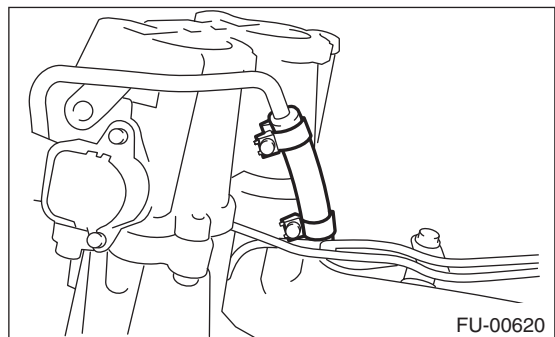
Tightening torque:

8.25 N·m (0.84 kgf-m, 6.1 ft-lb)



- 4) Install the fuel injector pipe LH.

- 5) Connect the left side fuel hose to injector pipe, and tighten the clamp screw.



- 6) Install the engine harness to the intake manifold.

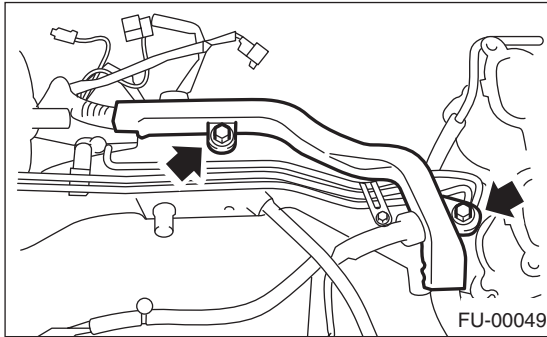
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

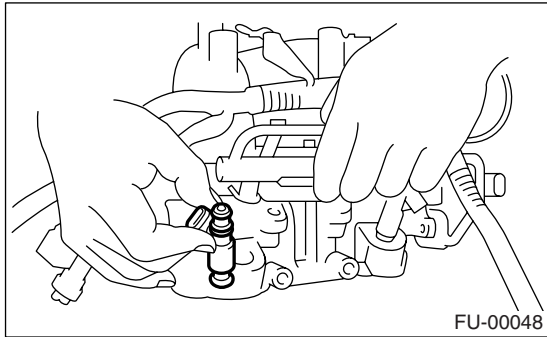
7) Install the harness bracket which hold the engine harness onto intake manifold.

Tightening torque:

19 N·m (1.94 kgf-m, 13.7 ft-lb)



8) Install the fuel injector.

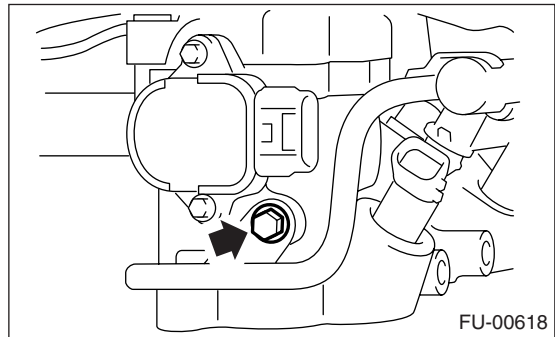
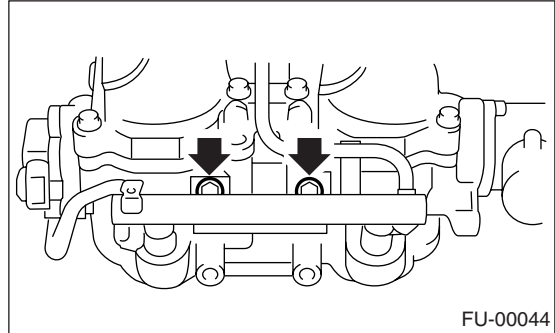


9) Tighten the bolt which install the fuel injector pipe onto intake manifold.

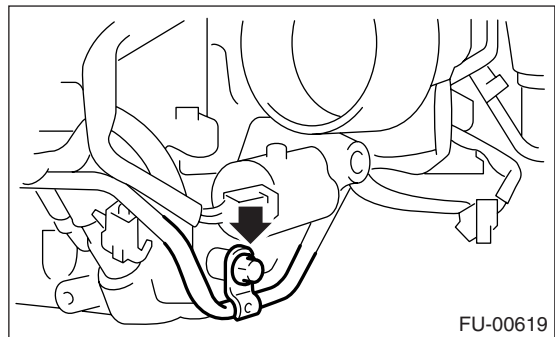
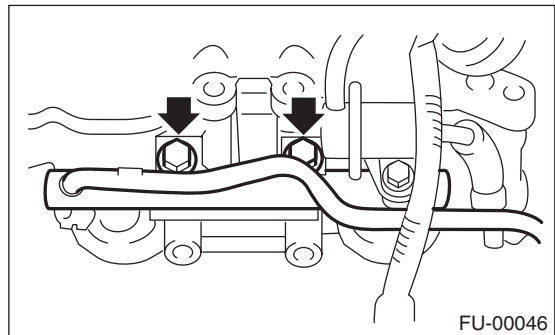
Tightening torque:

19 N·m (1.94 kgf-m, 13.7 ft-lb)

• LH SIDE



• RH SIDE



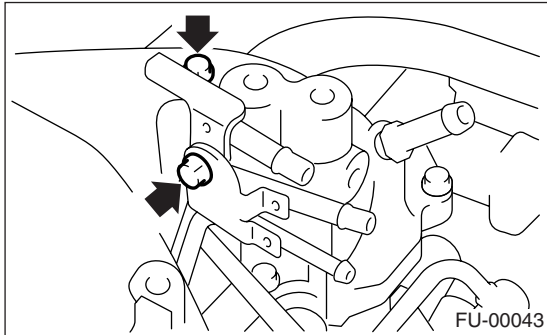
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

10) Tighten the two bolts which install the fuel pipes on the left side of intake manifold.

Tightening torque:

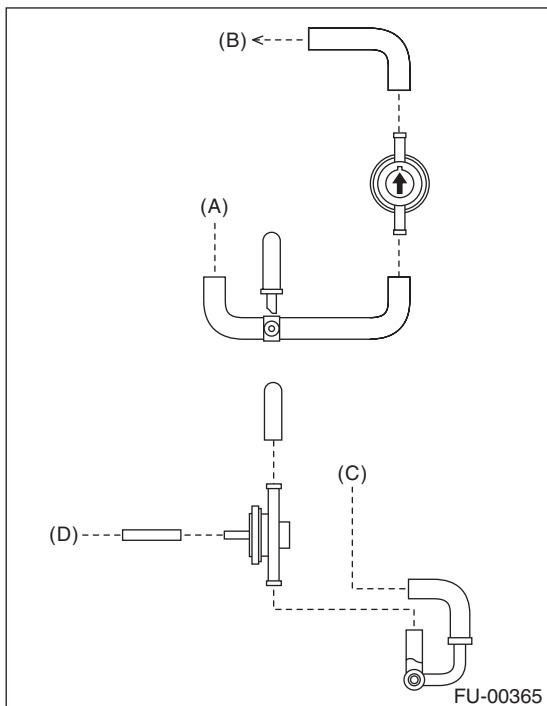
4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



11) Connect the evaporation hoses to the purge valve.

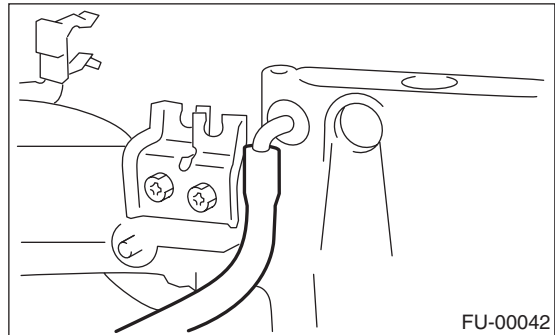
CAUTION:

Carefully connect the evaporation hoses.



- (A) To fuel pipe ASSY
- (B) To intake duct
- (C) To purge control solenoid valve
- (D) To intake manifold

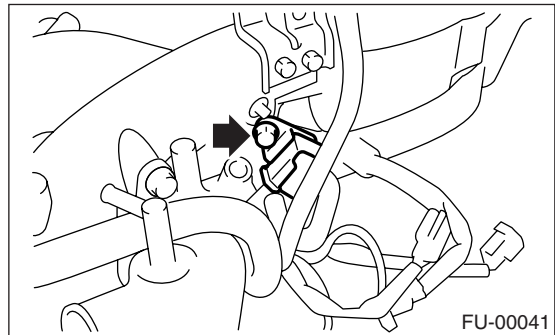
12) Connect the evaporation hose to the intake manifold.



13) Install the purge control solenoid valve.

Tightening torque:

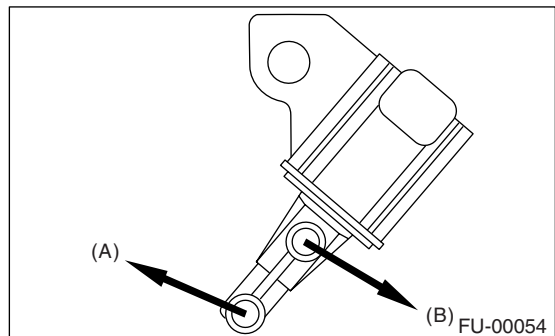
16 N·m (1.6 kgf-m, 11.8 ft-lb)



14) Connect the hoses to the purge control solenoid valve.

CAUTION:

Carefully connect the evaporation hoses.

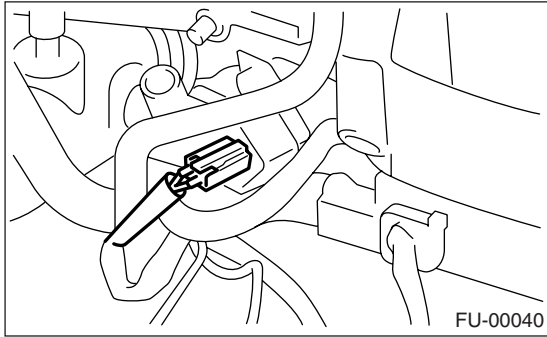


- (A) To intake manifold
- (B) To purge valve

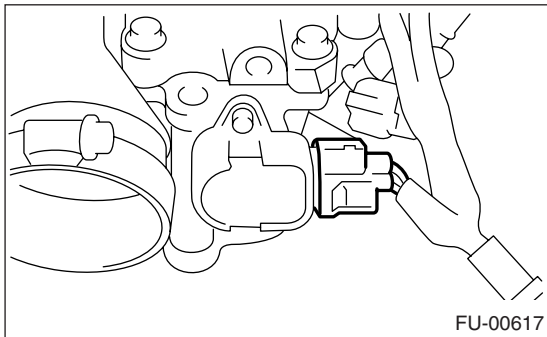
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

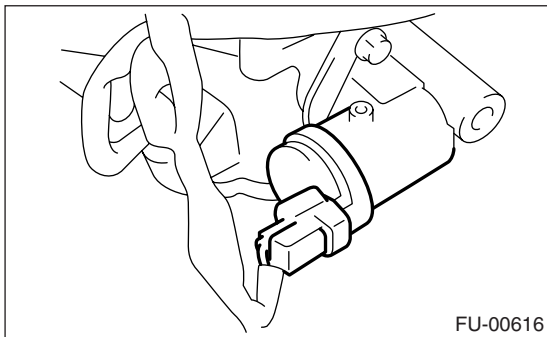
- 15) Connect the connector to the purge control solenoid valve.



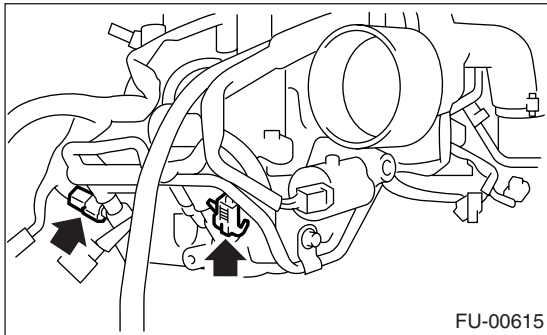
- 16) Connect the connector to the tumble generator valve sensor.



- 17) Connect the connector to the tumble generator valve actuator.



- 18) Connect the connector to the fuel injector.



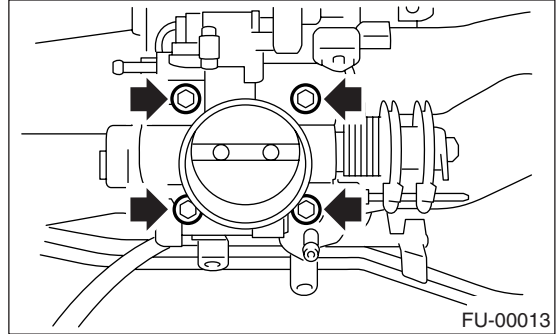
- 19) Install the throttle body to the intake manifold.

NOTE:

Replace gasket with a new one.

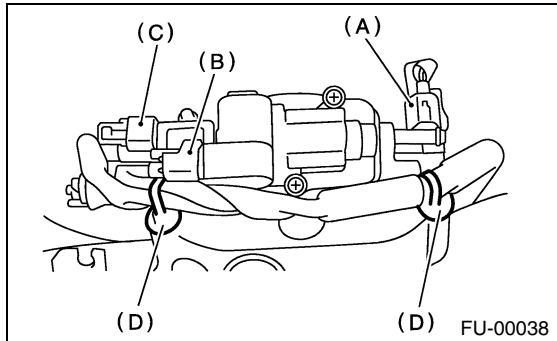
Tightening torque:

22 N·m (2.2 kgf-m, 15.9 ft-lb)



- 20) Connect the connector to the throttle position sensor (A), idle air control solenoid valve (B) and pressure sensor (C).

- 21) Connect the engine harness with clip (D) to the intake manifold.



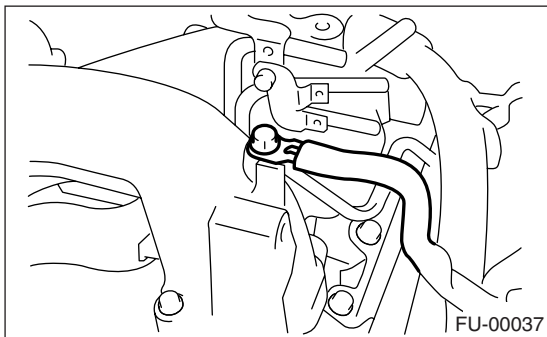
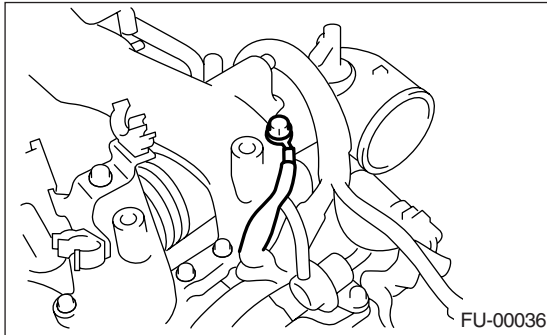
INTAKE MANIFOLD

FUEL INJECTION (FUEL SYSTEMS)

22) Install the engine ground terminal to the intake manifold.

Tightening torque:

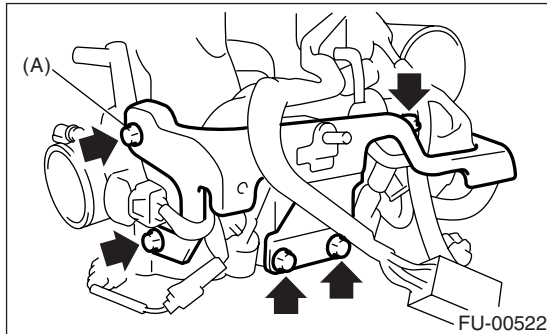
19 N·m (1.94 kgf-m, 13.7 ft-lb)



23) Install the fuel pipe protector RH.

Tightening torque:

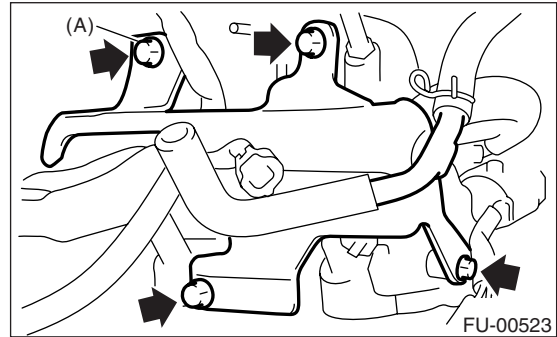
19 N·m (1.94 kgf-m, 13.7 ft-lb)



24) Install the fuel pipe protector LH.

Tightening torque:

19 N·m (1.94 kgf-m, 13.7 ft-lb)



E: INSPECTION

Make sure the fuel pipe and fuel hoses are not cracked and that connections are tight.