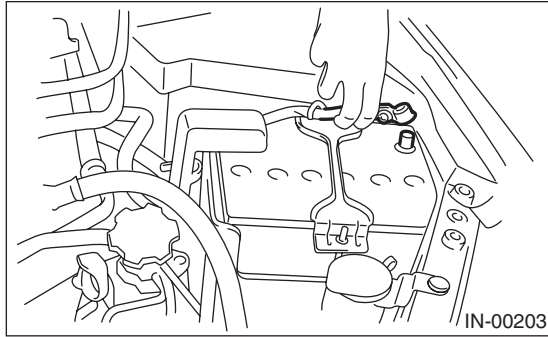


3. Intake Manifold

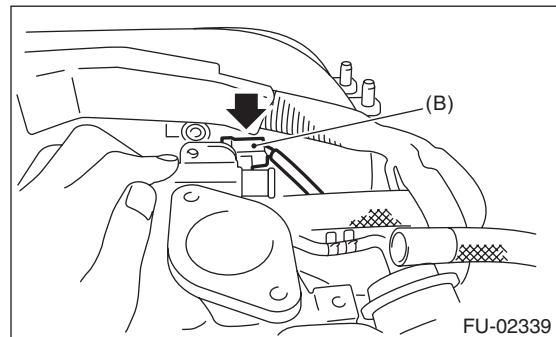
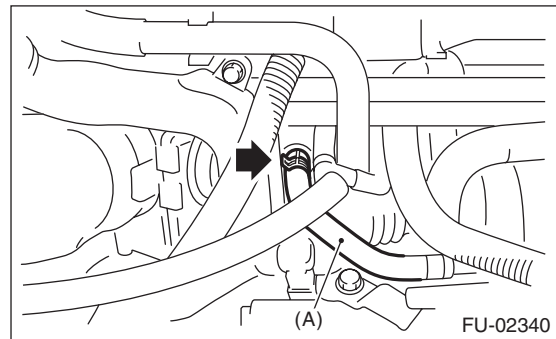
A: REMOVAL

- 1) Release the fuel pressure.
<Ref. to FU(H4DOTC)-43, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 2) Open the fuel filler flap lid, and remove the fuel filler cap.
- 3) Remove the collector cover.
- 4) Disconnect the ground cable from battery.

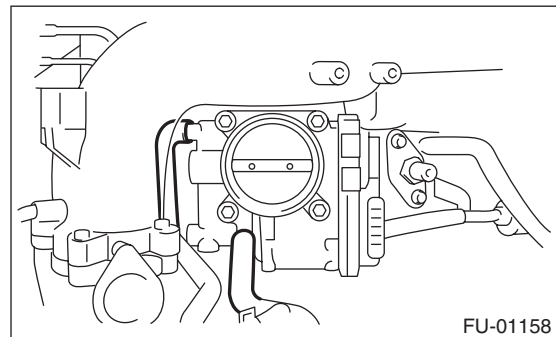


- 5) Lift-up the vehicle.
- 6) Remove the under cover.
- 7) Drain approximately 3.0 ℓ (3.2 US qt, 2.6 Imp qt) of coolant.
- 8) Remove the intake duct from the air cleaner case.
- 9) Remove the intercooler. <Ref. to IN(H4DOTC)-12, REMOVAL, Intercooler.>
- 10) Remove the generator. <Ref. to SC(H4SO)-21, REMOVAL, Generator.>
- 11) Remove the coolant filler tank. <Ref. to CO(H4DOTC)-31, REMOVAL, Coolant Filler Tank.>

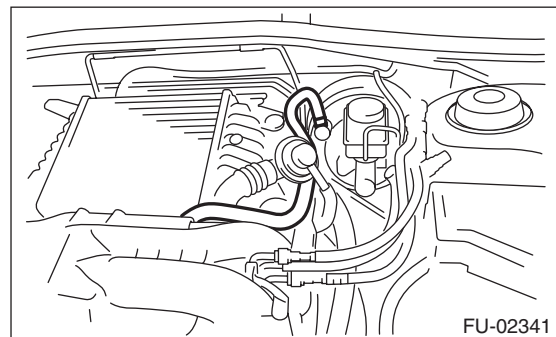
- 12) Disconnect the emission hose (A) and the connector (B) from the PCV hose assembly.



- 13) Disconnect the engine coolant hose from throttle body.



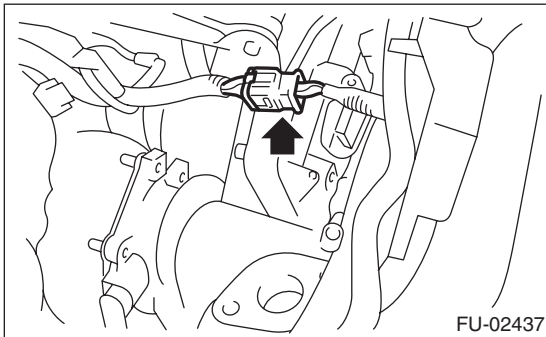
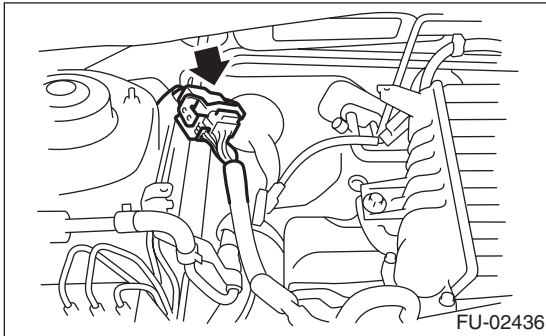
- 14) Disconnect the brake booster hose.



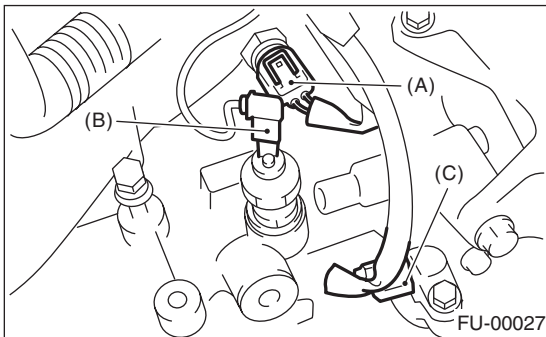
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

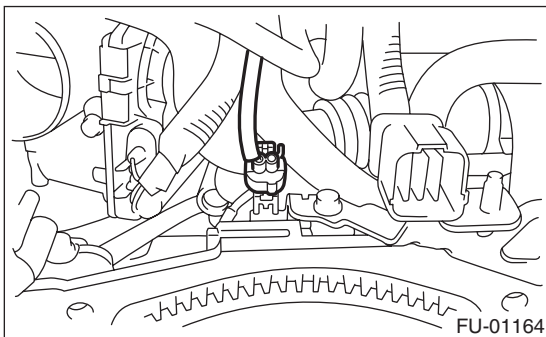
15) Disconnect the engine harness connectors from the bulk head harness connector.



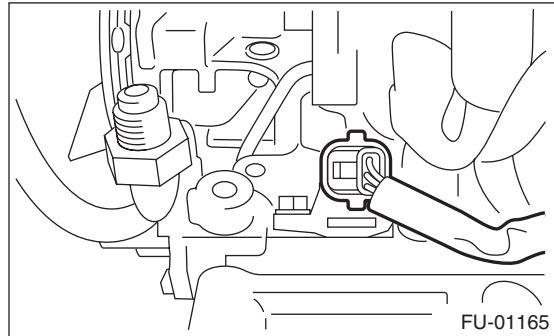
16) Disconnect the connectors from the engine coolant temperature sensor (A), oil pressure switch (B) and crankshaft position sensor (C).



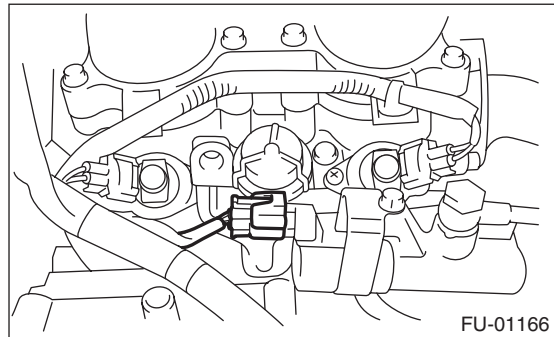
17) Disconnect the knock sensor connector.



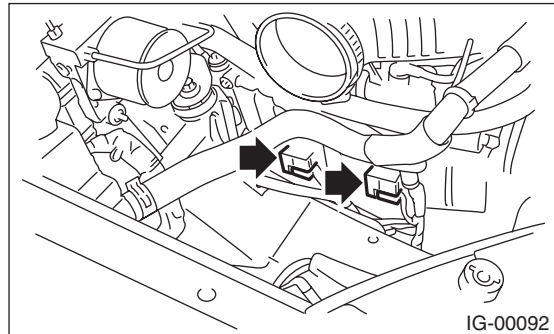
18) Disconnect the connector from camshaft position sensor.



19) Disconnect the connector from the oil flow control solenoid valve.



20) Disconnect the connector from ignition coil.



Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

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

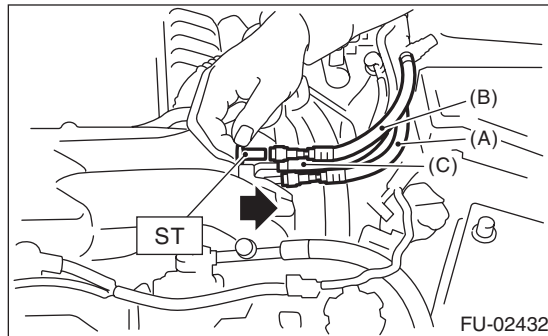
(1) Disconnect the connector on the fuel delivery line and return line by pushing the ST in the direction of the arrow.

ST 42099AE000 CONNECTOR REMOVER

(2) Remove the clip and disconnect the evaporation hose from the pipe.

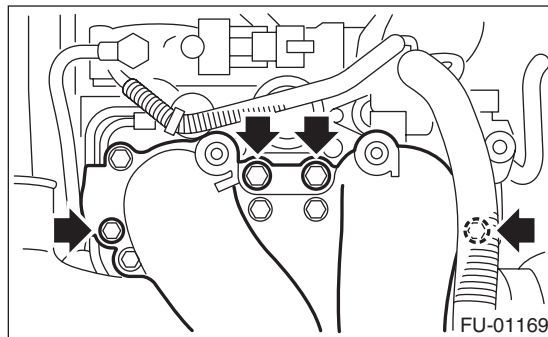
CAUTION:

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



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

22) Remove the bolts which hold intake manifold onto the cylinder heads.



23) Remove the intake manifold.

B: INSTALLATION

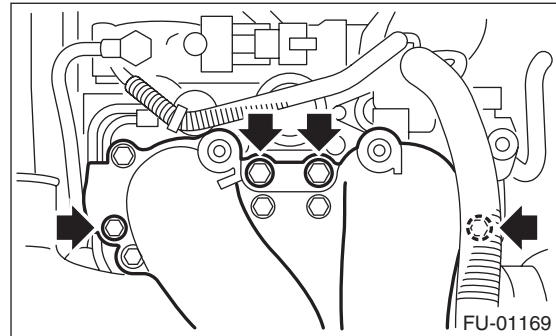
1) Install the intake manifold onto cylinder heads.

NOTE:

Use a new gasket.

Tightening torque:

25 N·m (2.5 kgf-m, 18 ft-lb)

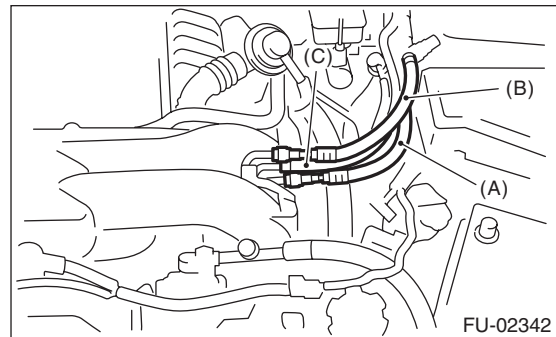


2) Connect the fuel delivery hose, return hose, and evaporation hose.

<Ref. to FU(H4DOTC)-61, INSTALLATION, Fuel Delivery, Return and Evaporation Lines.>

NOTE:

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



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

3) Tighten the hose clamp screw.

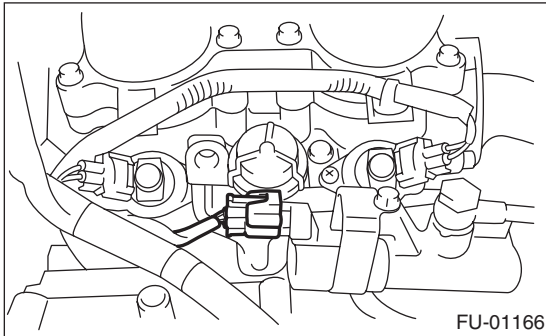
Tightening torque:

1.25 N·m (0.13 kgf-m, 0.94 ft-lb)

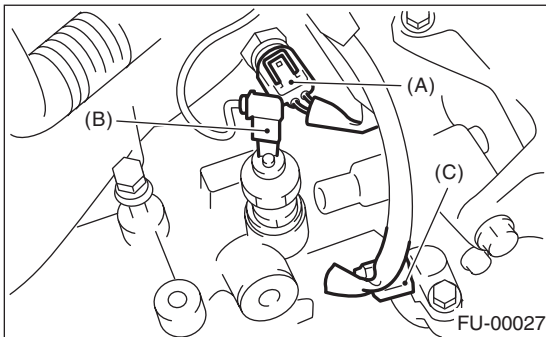
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

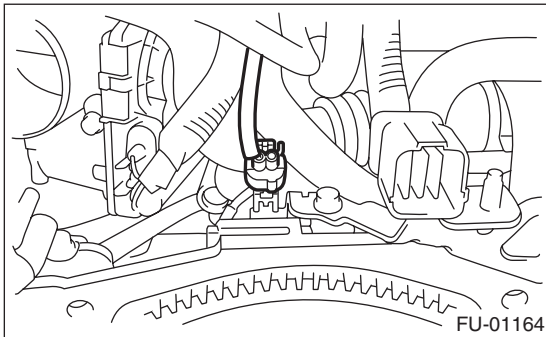
4) Connect the connector to the oil flow control solenoid valve.



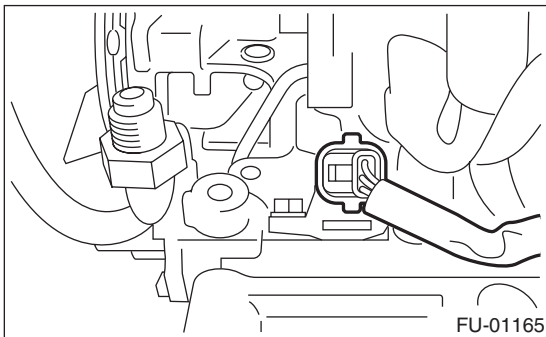
5) Connect the connector to the engine coolant temperature sensor (A), oil pressure switch (B) and crankshaft position sensor (C).



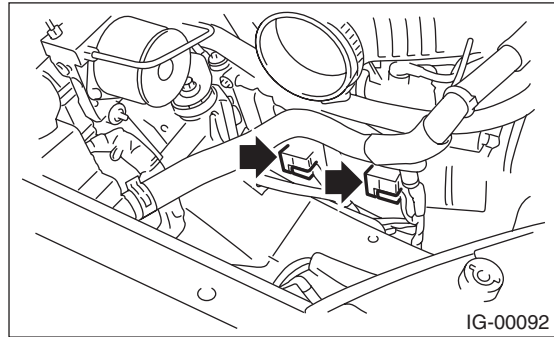
6) Connect the connector to the knock sensor.



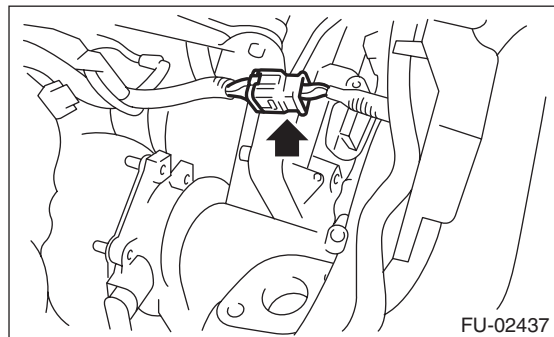
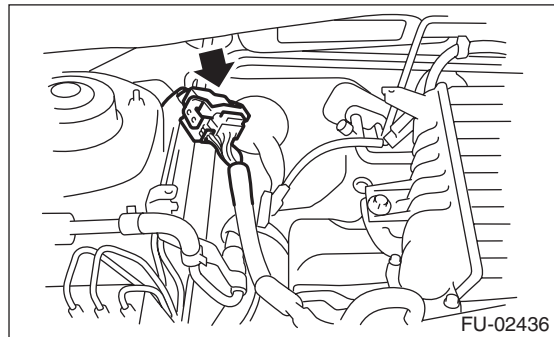
7) Connect the connectors to camshaft position sensor.



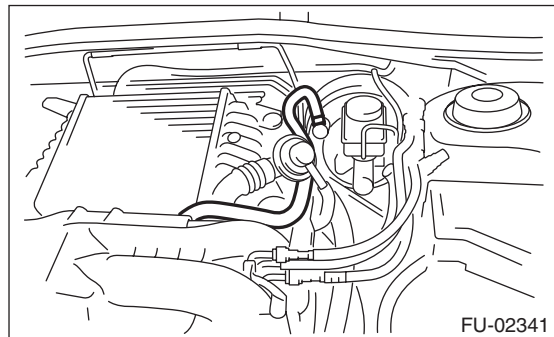
8) Connect the connector to the ignition coil.



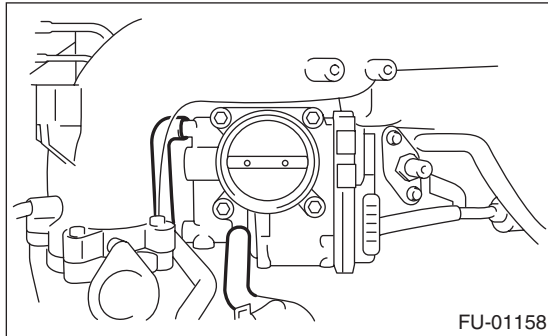
9) Connect the engine harness connectors to bulk-head harness connectors.



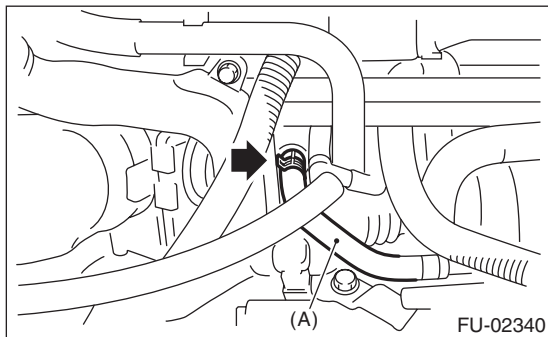
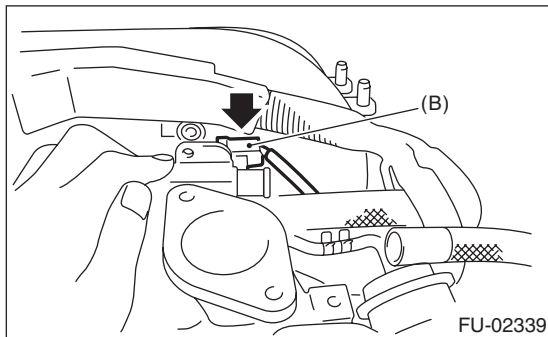
10) Connect the brake booster hose.



- 11) Connect the engine coolant hoses to throttle body.



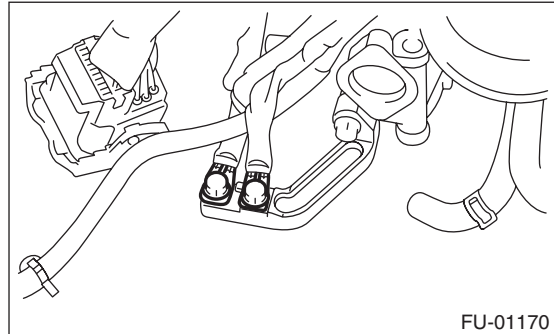
- 12) Connect the emission hose (A) and the connector (B) to the PCV hose assembly.



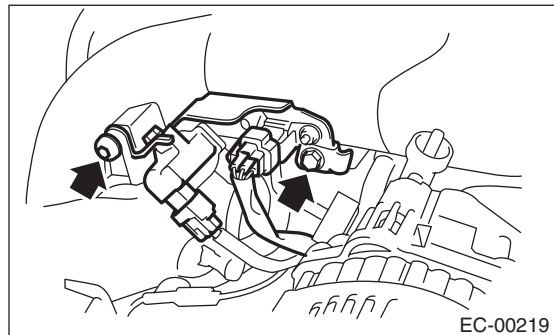
- 13) Install the coolant filler tank.
<Ref. to CO(H4DOTC)-31, INSTALLATION, Coolant Filler Tank.>
- 14) Install the intercooler. <Ref. to IN(H4DOTC)-12, INSTALLATION, Intercooler.>
- 15) Install the intake duct to the air cleaner case.
- 16) Install the fuse of fuel pump to main fuse box.
- 17) Connect the battery ground cable to the battery.
- 18) Lift-up the vehicle.
- 19) Install the under cover.
- 20) Fill engine coolant. <Ref. to CO(H4DOTC)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 21) Install the collector cover.

C: DISASSEMBLY

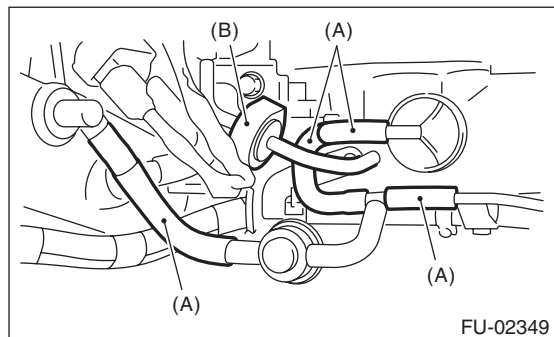
- 1) Disconnect the engine ground terminal from ground stay.



- 2) Remove the solenoid valve bracket assembly from the intake manifold, and disconnect the connector from wastegate control solenoid valve, manifold absolute pressure sensor and purge control solenoid valve.



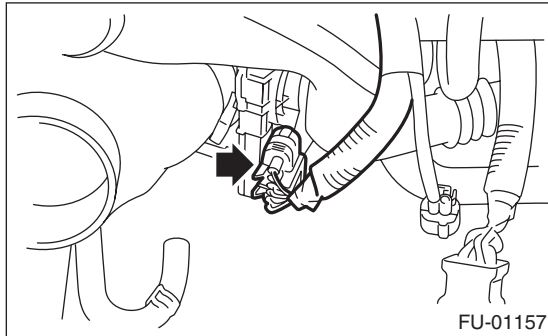
- 3) Disconnect the evaporation hose (A) and filter assembly (B).



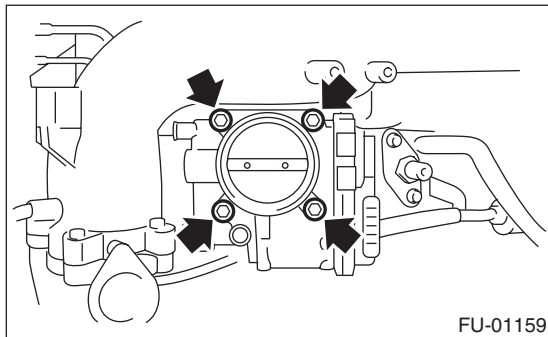
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

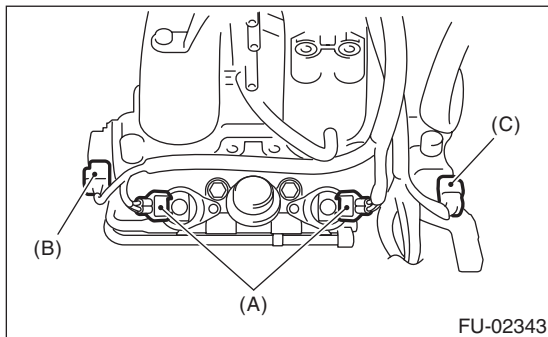
4) Disconnect the connectors from the throttle position sensor.



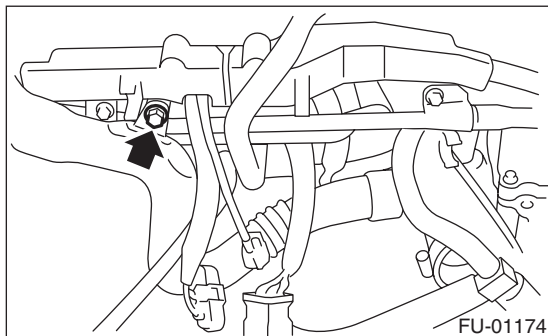
5) Remove the throttle body from intake manifold.



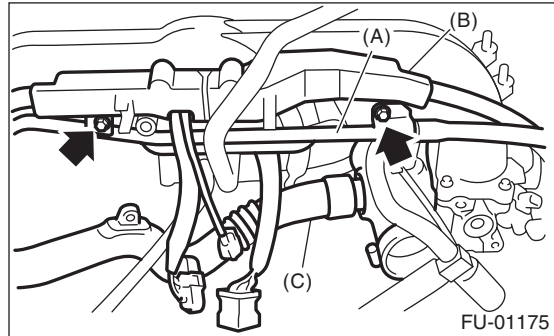
6) Disconnect the connectors from fuel injector (A), tumble generator valve position sensor (B) and tumble generator valve actuator (C).



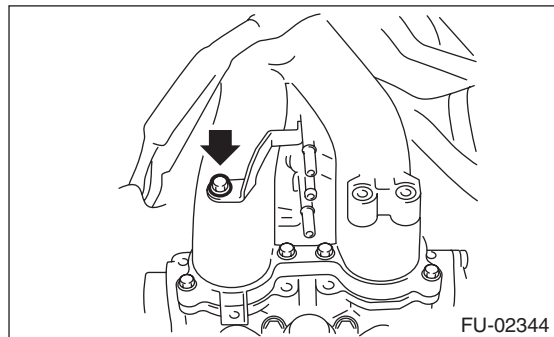
7) Remove the bolts which secures the air by-pass pipe to the intake manifold.



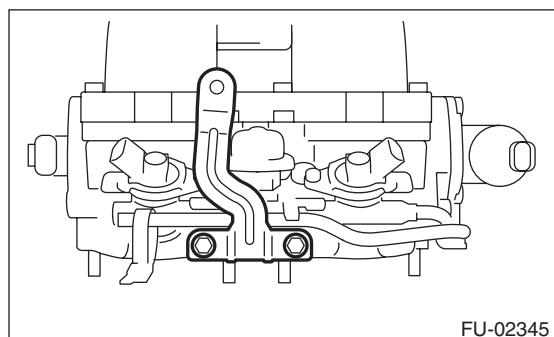
8) Remove the PCV pipe (A), harness assembly (B) and intake duct (C) from intake manifold.



9) Remove the bolt which secures the fuel injector pipe LH onto the front side of intake manifold.

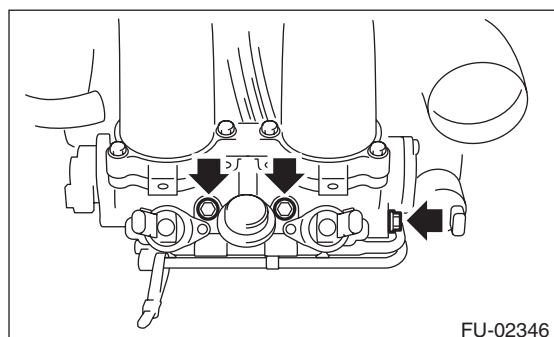


10) Remove the coolant filler tank stay from intake manifold.



11) Remove the bolt which holds fuel injector pipe onto intake manifold.

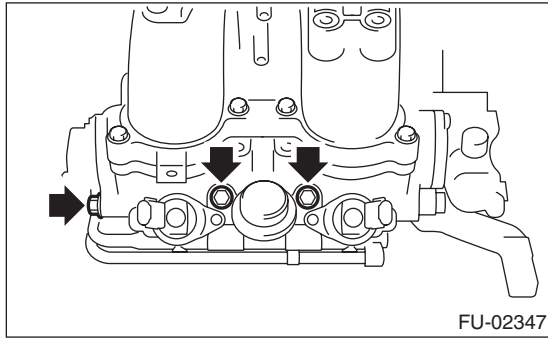
- RH side



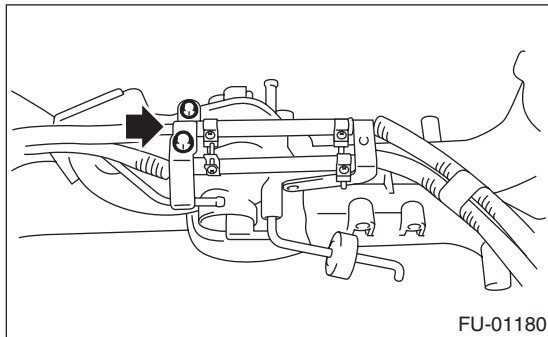
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

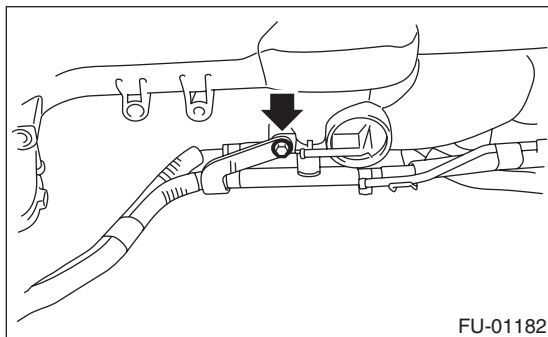
- LH side



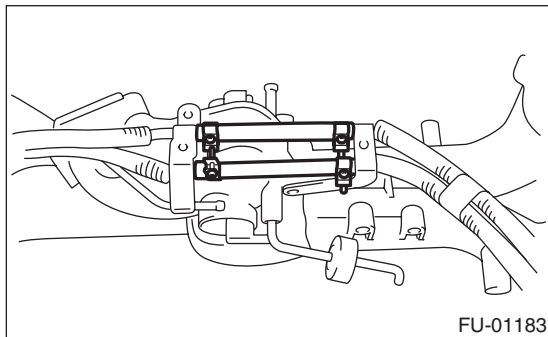
- 12) Remove the bolt which secures the fuel pipe to the intake manifold.



- 13) Remove the bolt which secures fuel injector pipe RH onto the lower side of the intake manifold.

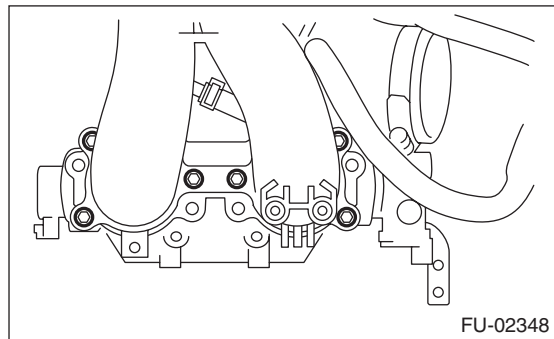


- 14) Loosen the clamp which holds the fuel hose to the fuel injector pipe, and then disconnect the fuel hose from pipe.



- 15) Remove the fuel injector pipe.

- 16) Remove the intake manifold (upper) from the intake manifold (lower).



D: ASSEMBLY

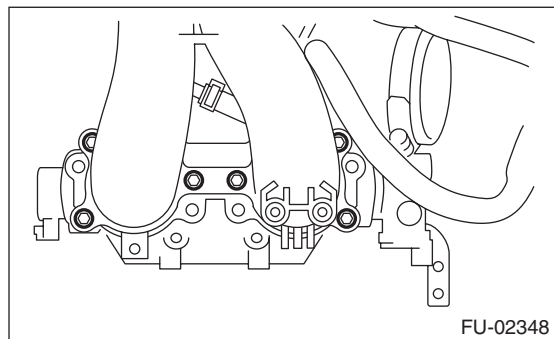
- 1) Install the intake manifold (lower) to the intake manifold (upper).

NOTE:

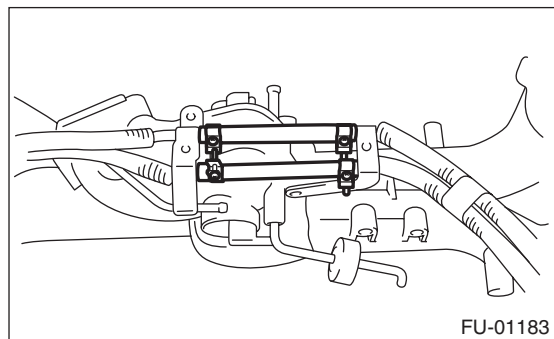
Use new O-rings.

Tightening torque:

8.3 N-m (0.85 kgf-m, 6.1 ft-lb)



- 2) Install the fuel injector pipe.
- 3) Connect fuel hoses to fuel injector pipes on both sides, and secure them with the clamps.



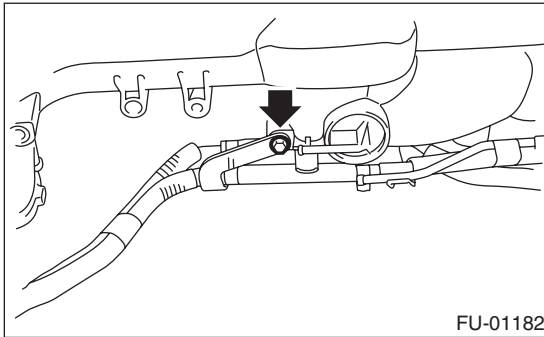
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

4) Tighten the bolts which secure the fuel injector pipe RH to the lower side of the intake manifold.

Tightening torque:

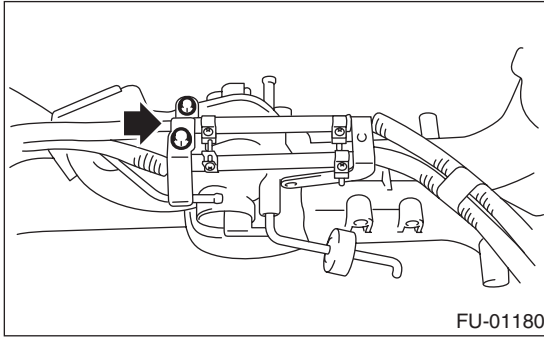
6.5 N·m (0.66 kgf-m, 4.8 ft-lb)



5) Tighten the bolts which secure the fuel pipe to the intake manifold.

Tightening torque:

6.5 N·m (0.66 kgf-m, 4.8 ft-lb)

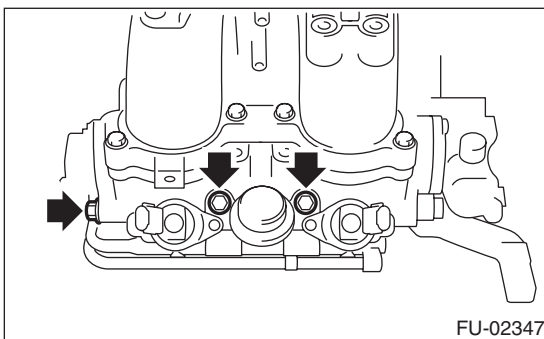


6) Tighten the bolts which secure fuel injector pipe onto intake manifold.

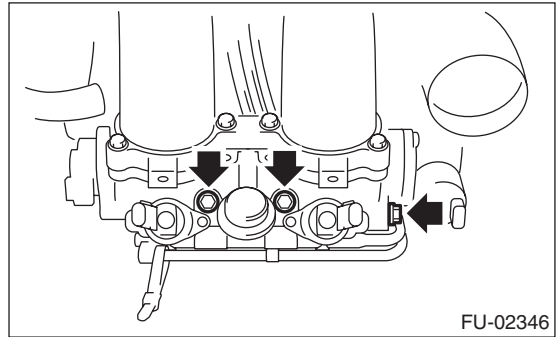
Tightening torque:

19 N·m (1.9 kgf-m, 14 ft-lb)

- LH side



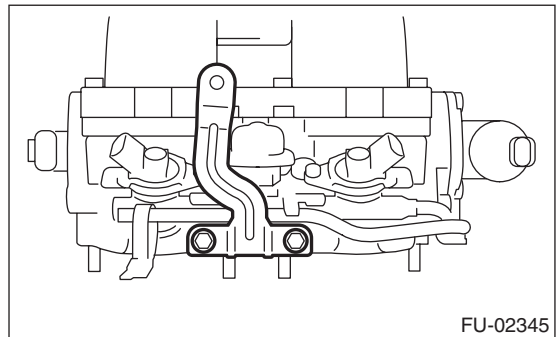
- RH side



7) Install the coolant filler tank stay to the intake manifold.

Tightening torque:

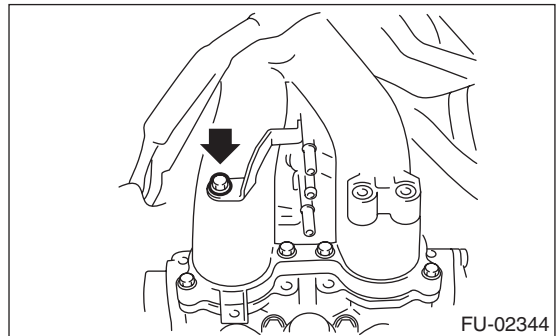
19 N·m (1.9 kgf-m, 14 ft-lb)



8) Tighten the bolt which holds the fuel injector pipe LH to the front side of the intake manifold.

Tightening torque:

6.5 N·m (0.66 kgf-m, 4.8 ft-lb)



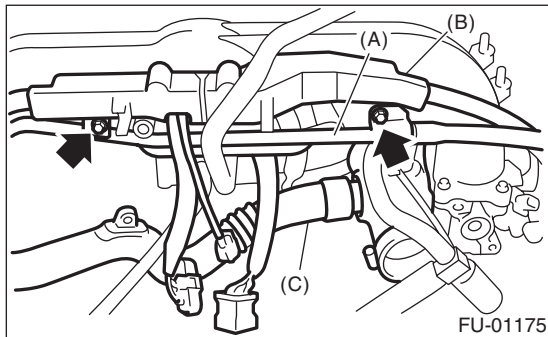
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

9) Install PCV pipe (A), harness assembly (B) and intake duct (C) to the intake manifold.

Tightening torque:

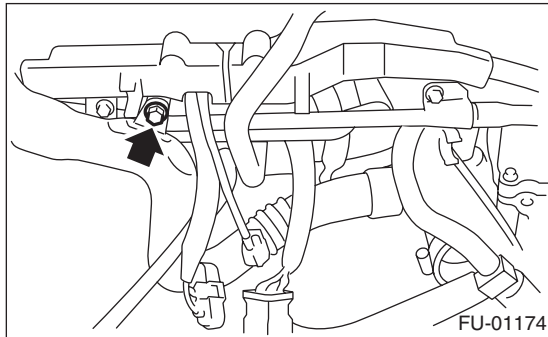
6.5 N·m (0.66 kgf-m, 4.8 ft-lb)



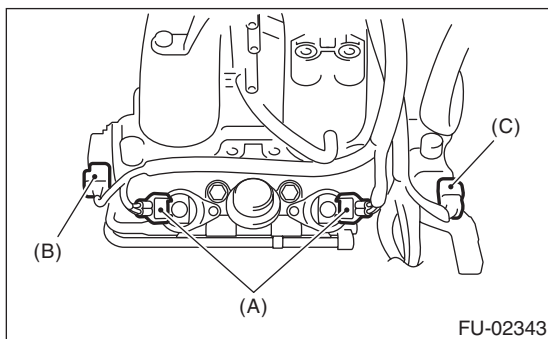
10) Tighten the bolts which secure the air by-pass pipe to the intake manifold.

Tightening torque:

6.5 N·m (0.66 kgf-m, 4.8 ft-lb)



11) Install the connectors to fuel injector (A), tumble generator valve position sensor (B) and tumble generator valve actuator (C).



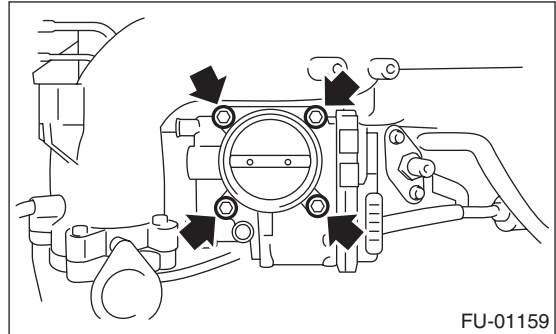
12) Install the throttle body to intake manifold.

NOTE:

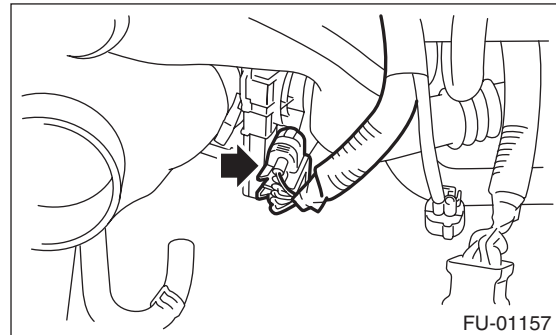
Use new O-rings.

Tightening torque:

8 N·m (0.8 kgf-m, 5.9 ft-lb)



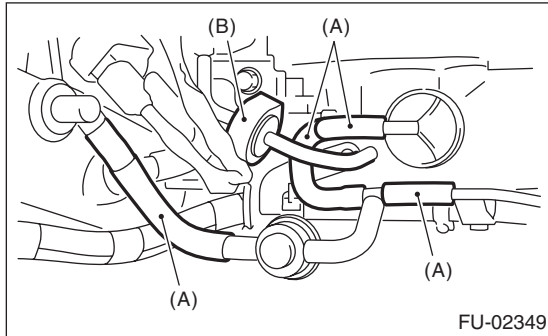
13) Connect the connector to the throttle position sensor.



Intake Manifold

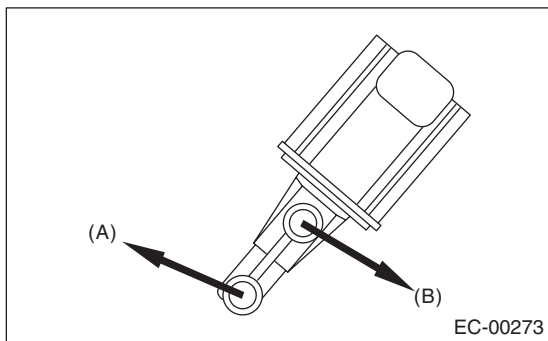
FUEL INJECTION (FUEL SYSTEMS)

14) Connect the evaporation hose (A) and filter assembly (B).



NOTE:

Connect the evaporation hose as shown in the figure.

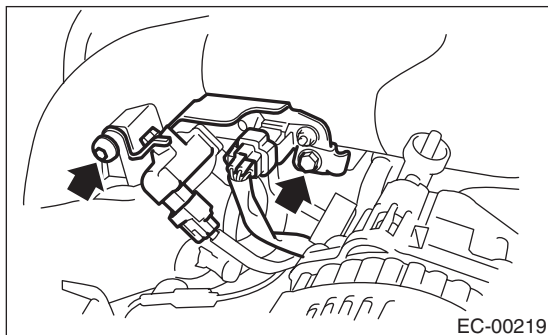


- (A) To intake manifold
- (B) To evaporation pipe

15) Connect the connectors to the wastegate control solenoid valve, manifold absolute pressure sensor and purge control solenoid valve, and install the solenoid valve bracket assembly to intake manifold.

Tightening torque:

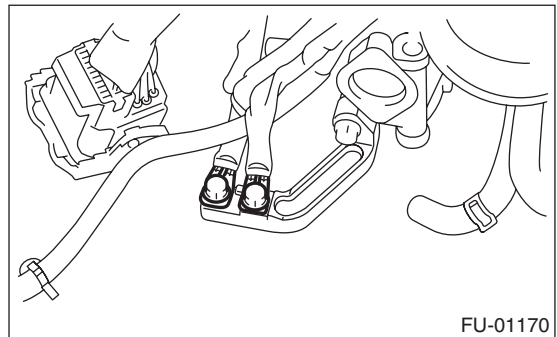
19 N·m (1.9 kgf-m, 14 ft-lb)



16) Install the engine ground terminal to the ground stay.

Tightening torque:

19 N·m (1.9 kgf-m, 14 ft-lb)



E: INSPECTION

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