

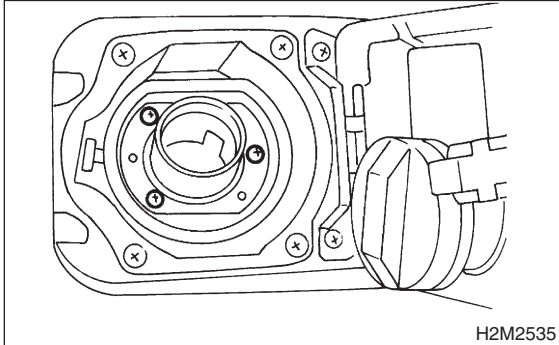
3. Intake Manifold

S105034

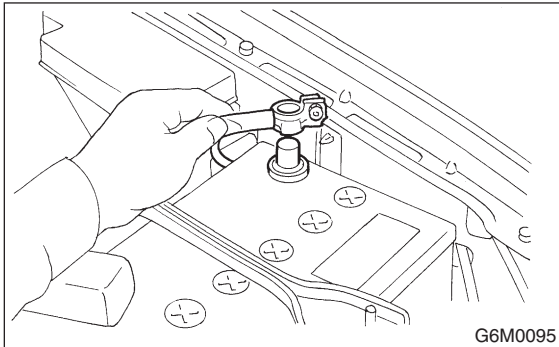
A: REMOVAL

S105034A18

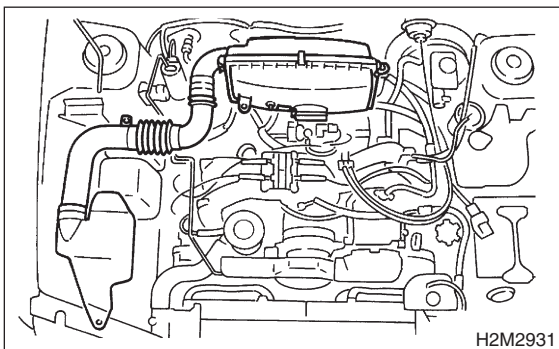
- 1) Release fuel pressure. <Ref. to FU-64 RELEASING OF FUEL PRESSURE, Fuel.>
- 2) Open fuel flap lid, and remove fuel filler cap.



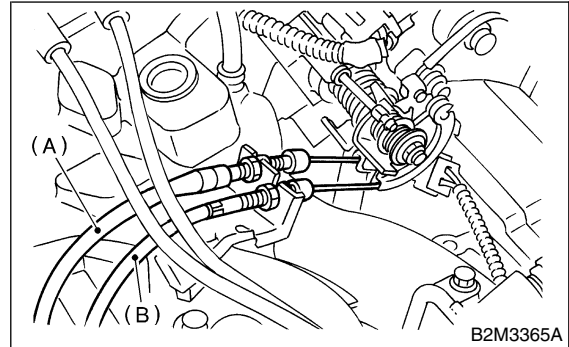
- 3) Disconnect battery ground cable.



- 4) Remove air intake duct <Ref. to IN-5 REMOVAL, Air Intake Duct.> and air cleaner assembly. <Ref. to IN-4 REMOVAL, Air Cleaner Case.>

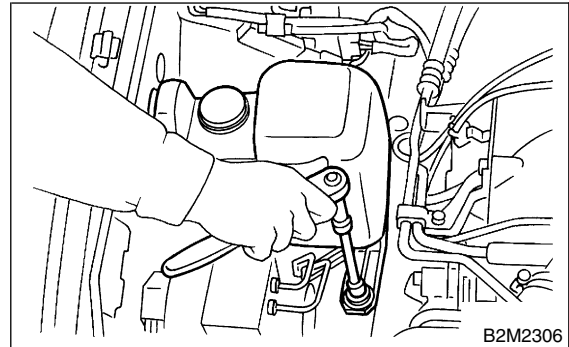


- 5) Disconnect accelerator cable (A).
- 6) Disconnect cruise control cable (B). (With cruise control model)

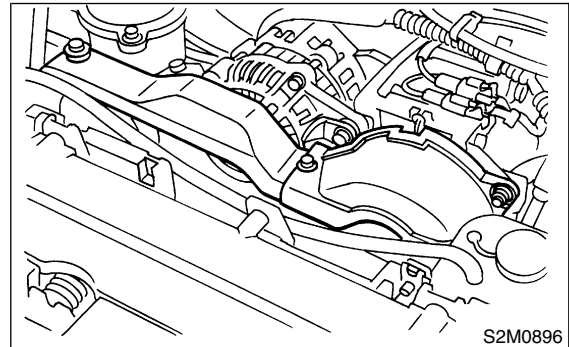


- 7) Remove power steering pump and tank from brackets.

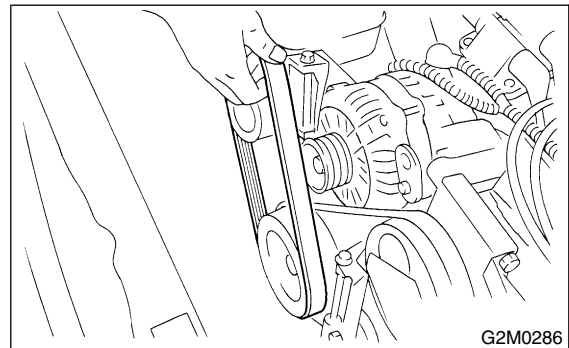
- (1) Remove resonator chamber.



- (2) Remove V-belt covers.



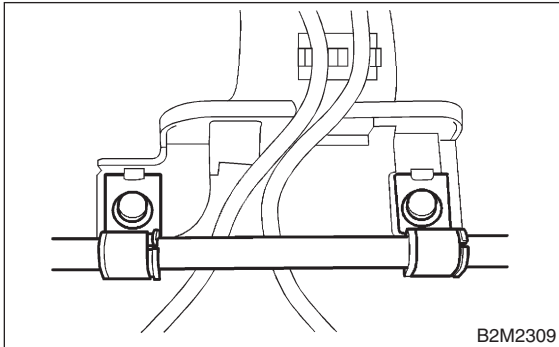
- (3) Loosen lock bolt and slider bolt, and remove power steering pump drive V-belt.



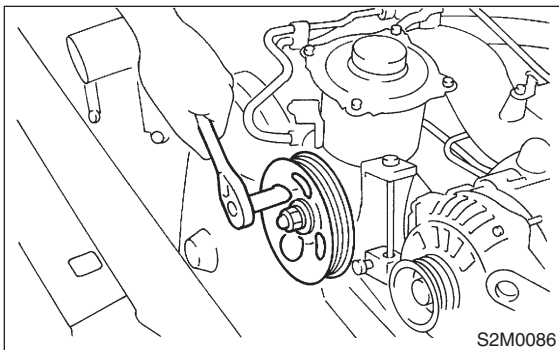
- (4) Remove bolts which secure power steering pipe brackets to intake manifold.

NOTE:

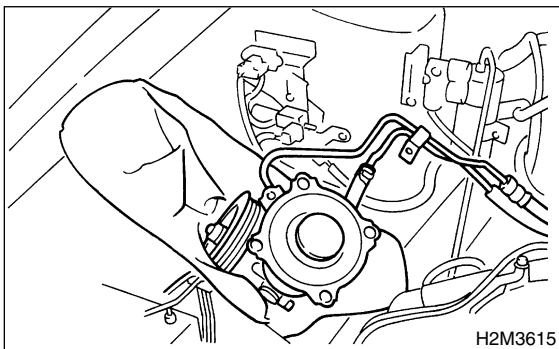
Do not disconnect power steering hose.



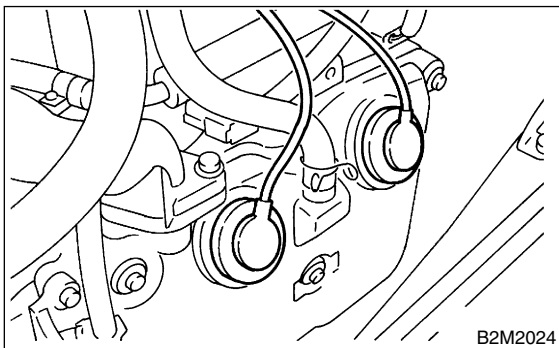
- (5) Remove bolts which install power steering pump to bracket.



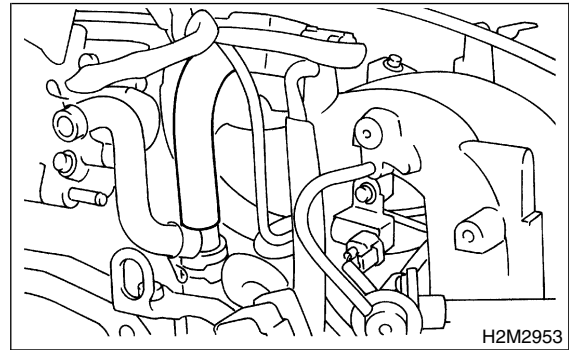
- (6) Place power steering pump on the right side wheel apron.



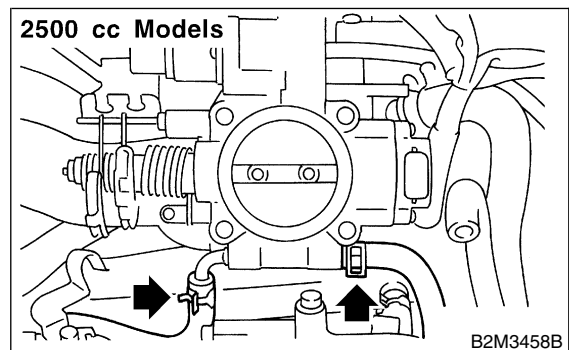
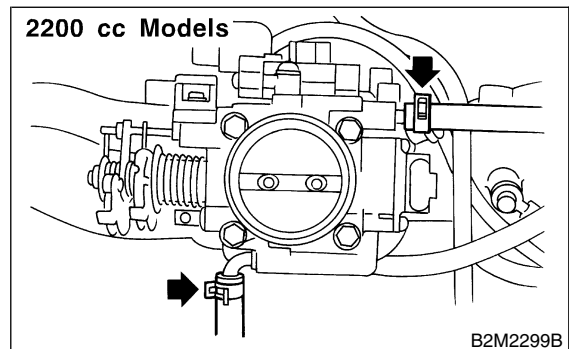
- 8) Disconnect spark plug cords from spark plugs.



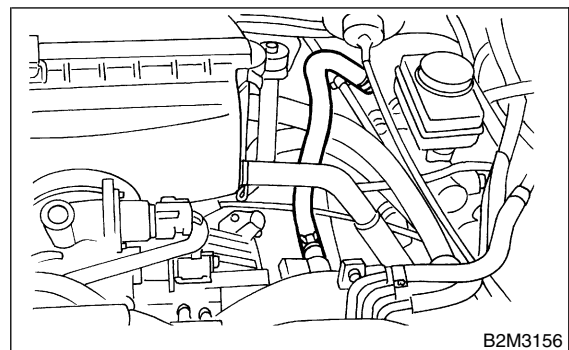
- 9) Disconnect PCV hose from intake manifold.



- 10) Disconnect engine coolant hose from throttle body.



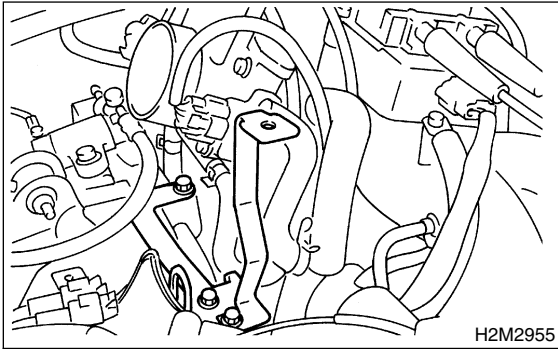
- 11) Disconnect brake booster hose.



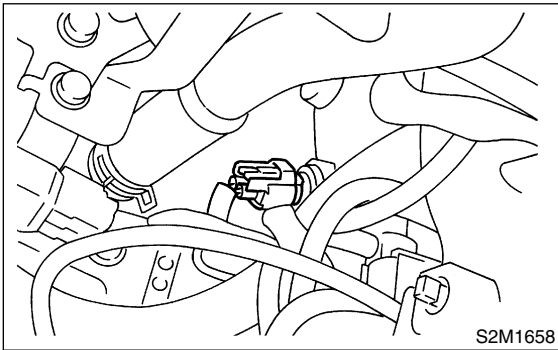
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

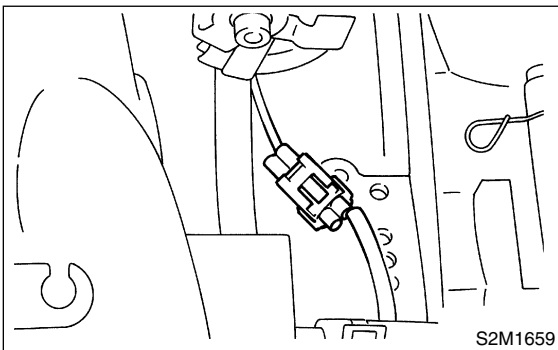
12) Remove air cleaner case stay RH and engine harness bracket, and disconnect engine harness connectors from bulkhead harness connectors.



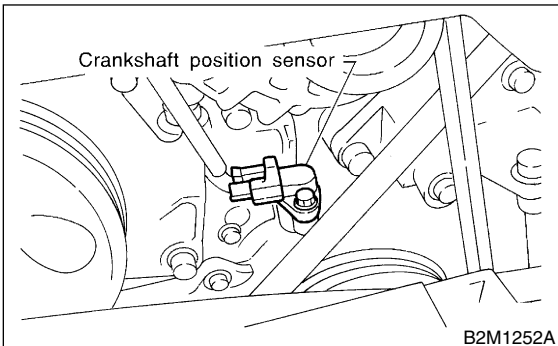
13) Disconnect connectors from engine coolant temperature sensor.



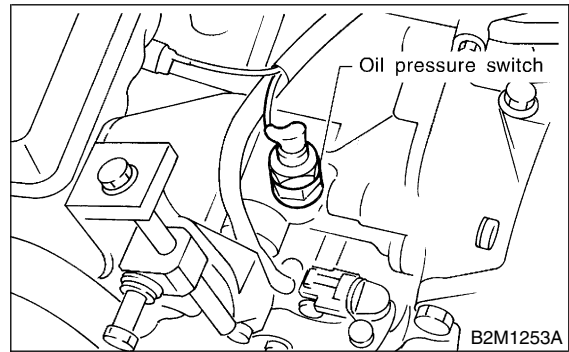
14) Disconnect knock sensor connector.



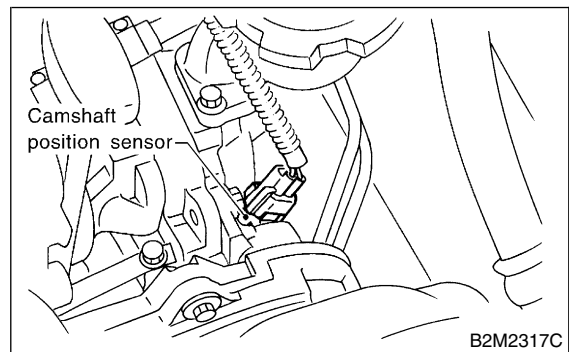
15) Disconnect connector from crankshaft position sensor.



16) Disconnect connector from oil pressure switch.



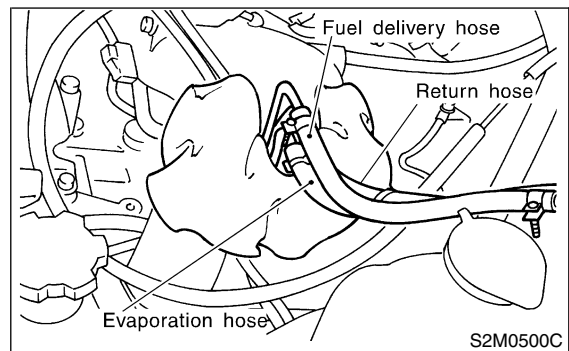
17) Disconnect connector from camshaft position sensor.



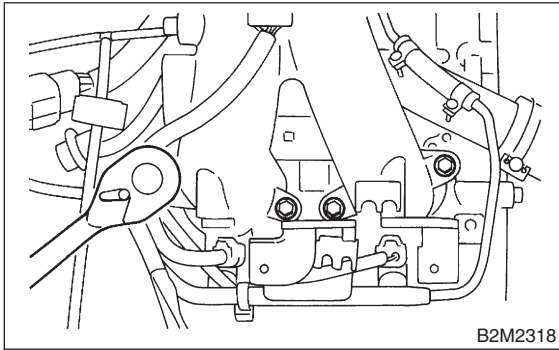
18) Disconnect fuel hoses from fuel pipes.

WARNING:

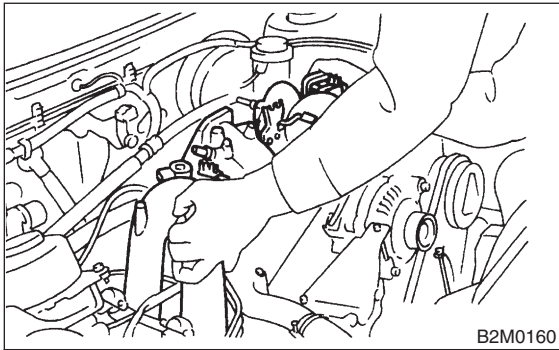
- Do not spill fuel.
- Catch fuel from hoses in a container or cloth.



19) Remove bolts which hold intake manifold onto cylinder heads.



20) Remove intake manifold.



B: INSTALLATION

S105034A11

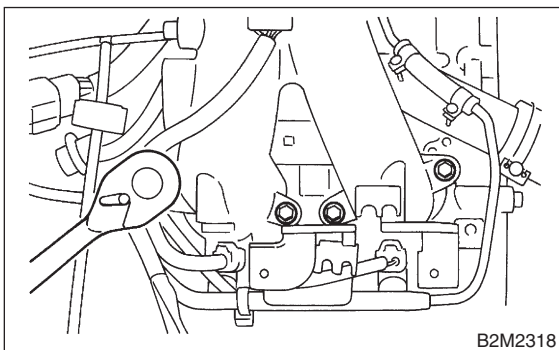
1) Install intake manifold onto cylinder heads.

CAUTION:

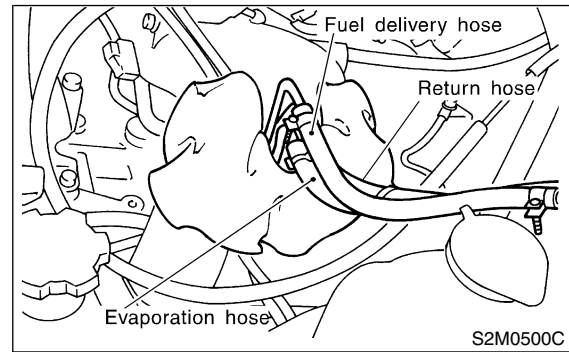
Always use new gaskets.

Tightening torque:

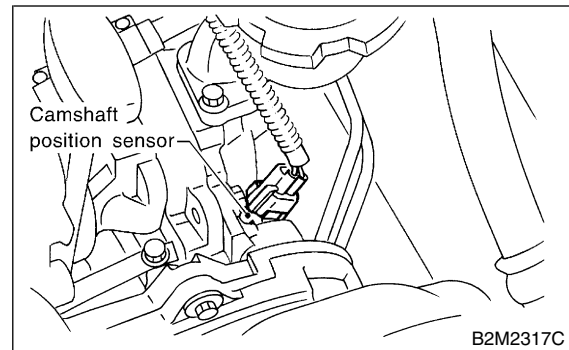
25 N·m (2.5 kgf-m, 18.1 ft-lb)



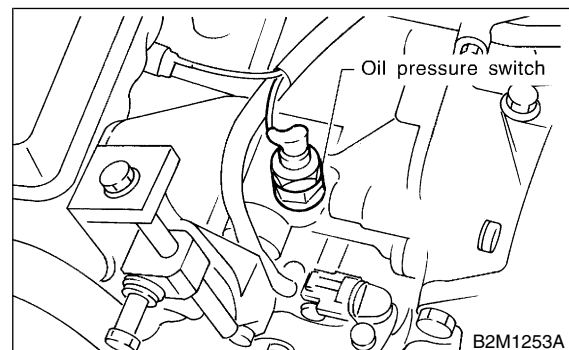
2) Connect fuel hoses.



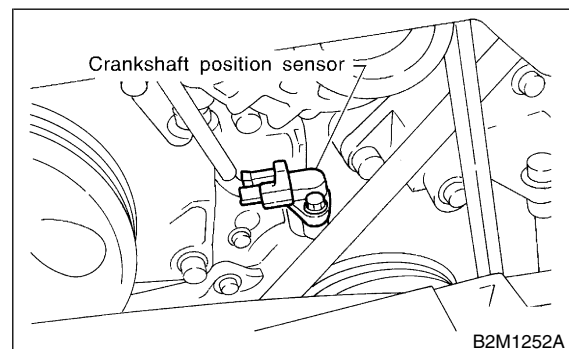
3) Connect connector to camshaft position sensor.



4) Connect connector to oil pressure switch.



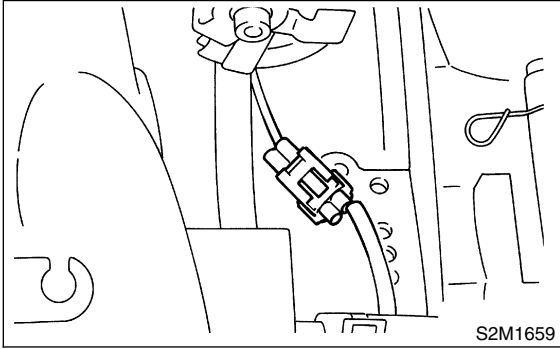
5) Connect connector to crankshaft position sensor.



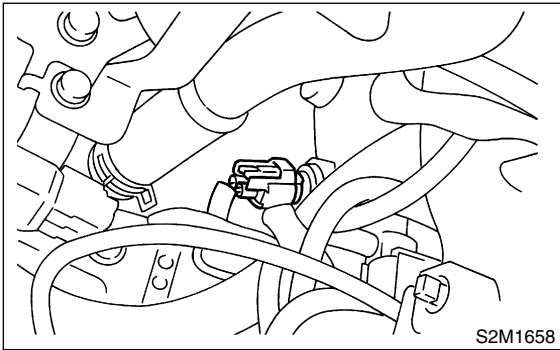
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

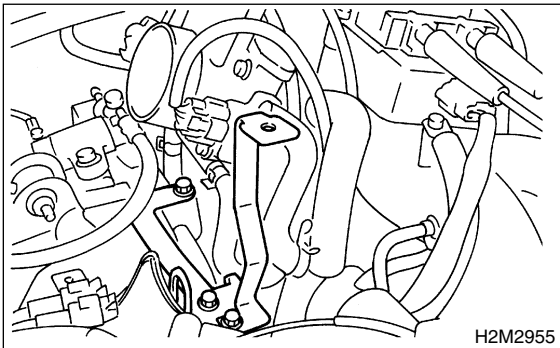
6) Connect knock sensor connector.



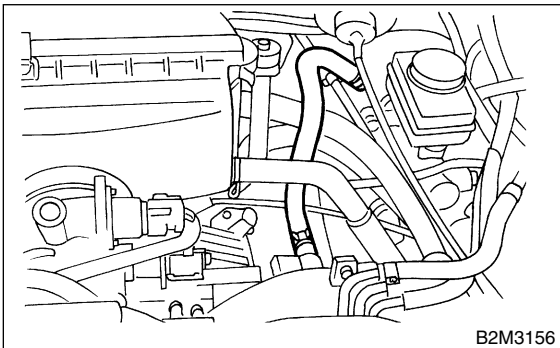
7) Connect connectors to engine coolant temperature sensor.



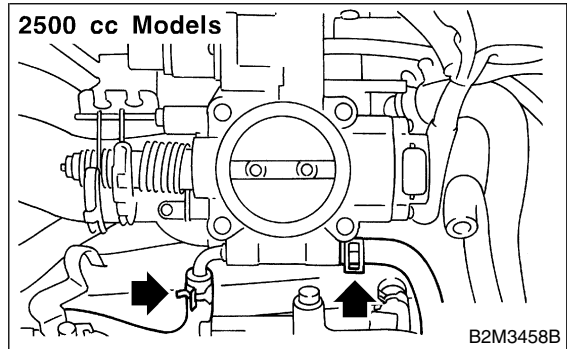
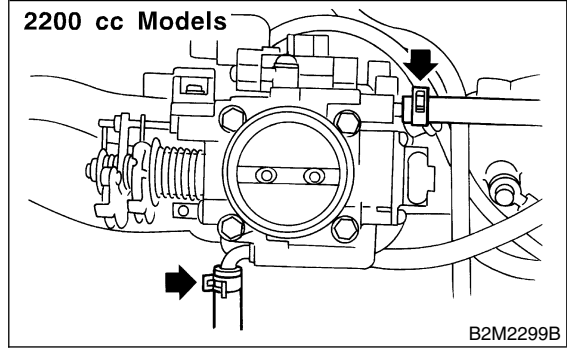
8) Install air cleaner case stay RH and engine harness bracket, and connect engine harness connectors to bulkhead connectors.



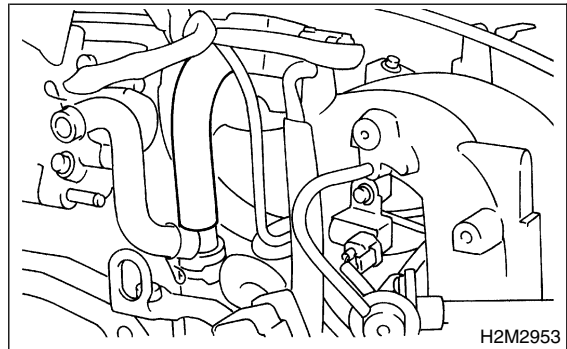
9) Connect brake booster hose.



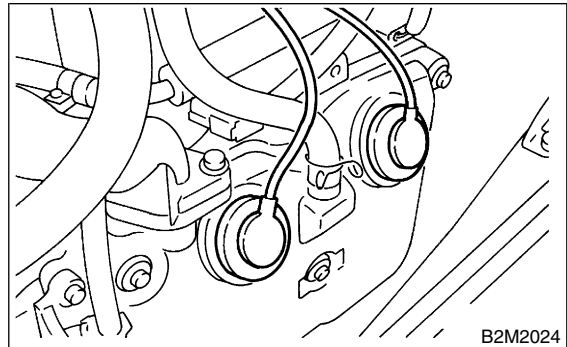
10) Connect engine coolant hose to throttle body.



11) Connect PCV hose to intake manifold.



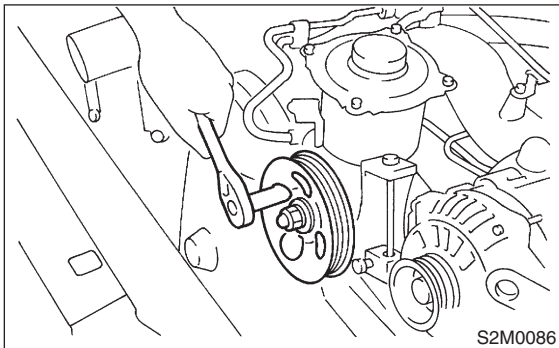
12) Connect spark plug cords to spark plugs.



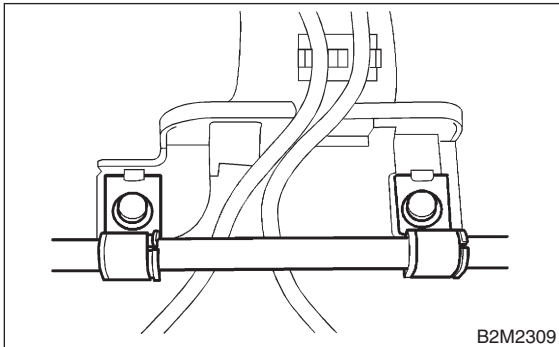
- 13) Install power steering pump on bracket.
 (1) Tighten bolts which install power steering pump on bracket.

Tightening torque:

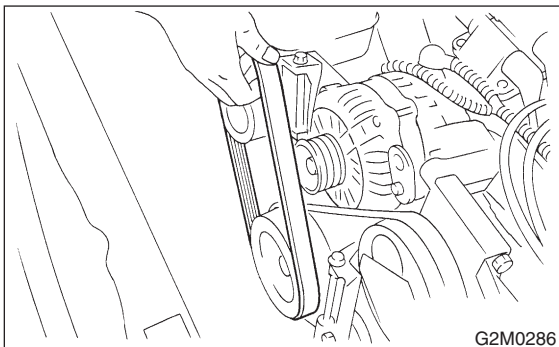
20.1 N·m (2.05 kgf-m, 14.8 ft-lb)



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

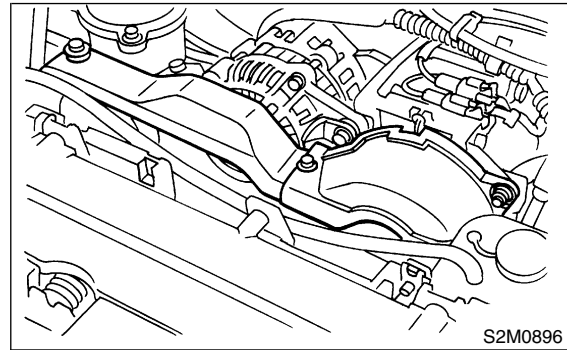


- (3) Install power steering drive V-belt.



- (4) Adjust V-belt. <Ref. to ME-48 INSPECTION, V-belt.>

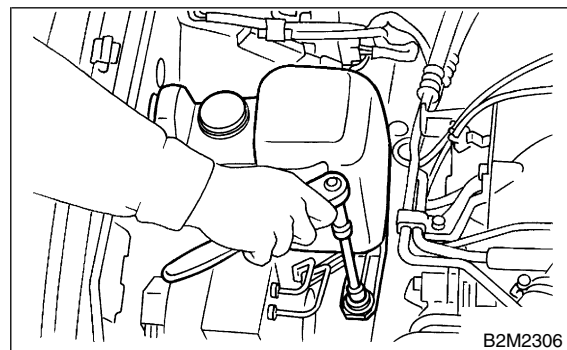
- (5) Install V-belt covers.



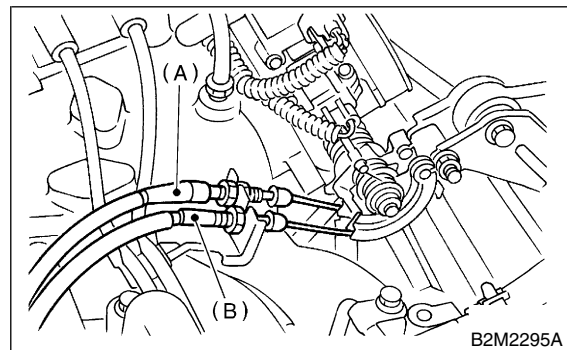
- (6) Install resonator chamber.

Tightening torque:

33 N·m (3.4 kgf-m, 25 ft-lb)



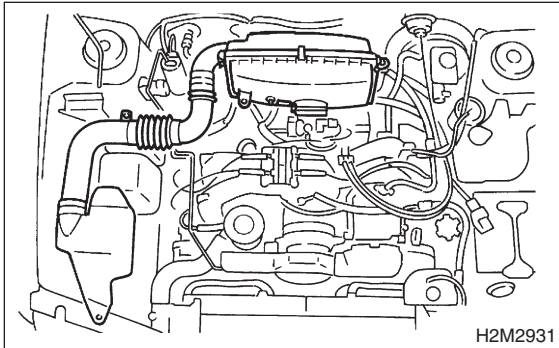
- 14) Connect accelerator cable (A).
 15) Connect cruise control cable (B). (With cruise control models)



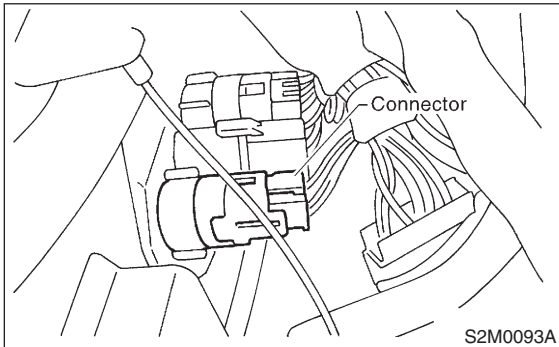
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

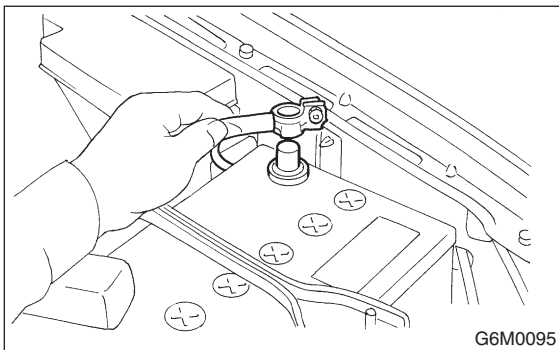
16) Install air intake duct <Ref. to IN-5 INSTALLATION, Air Intake Duct.> and air cleaner assembly. <Ref. to IN-4 INSTALLATION, Air Cleaner Case.>



17) Connect connector to fuel pump relay.



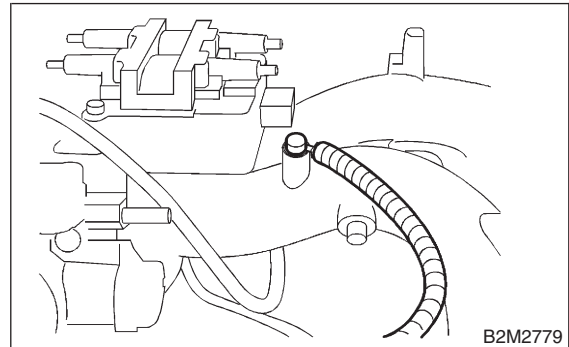
18) Connect battery ground cable.



C: DISASSEMBLY S105034A06

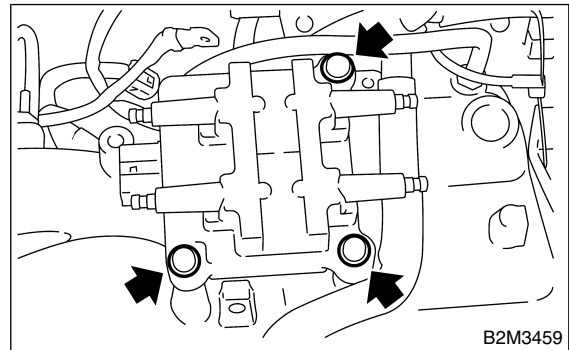
1. 2200 cc MODELS S105034A0603

1) Disconnect engine ground terminal from intake manifold.



2) Disconnect connector from ignition coil and ignitor assembly.

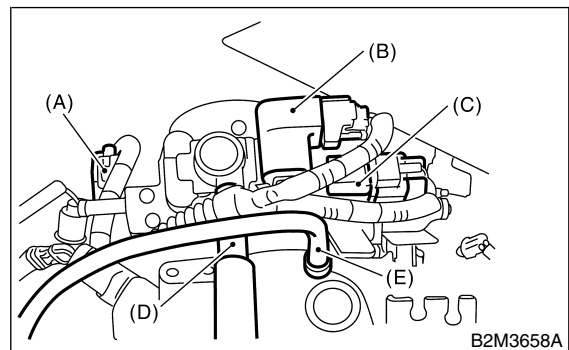
3) Remove ignition coil and ignitor assembly.



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

5) Disconnect air by-pass hose (D) from idle air control solenoid valve.

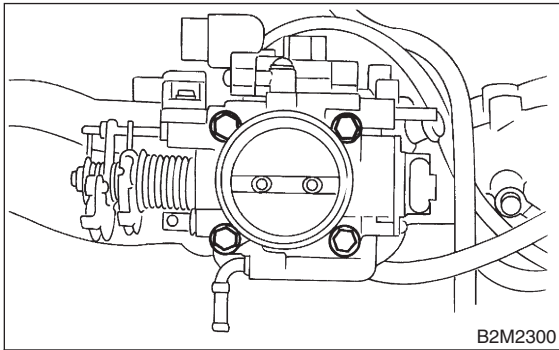
6) Disconnect air by-pass hose (E) from intake manifold.



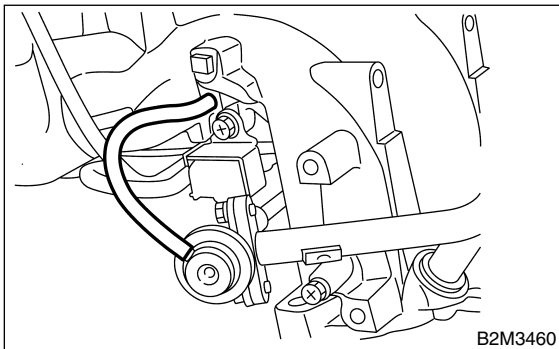
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

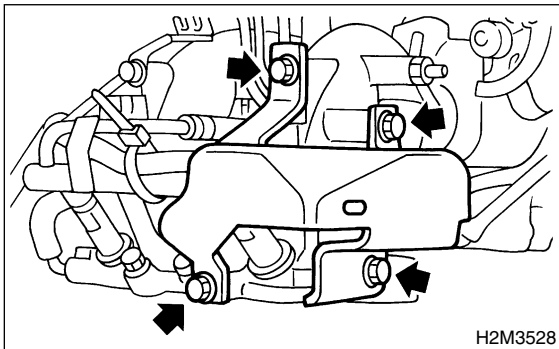
7) Remove throttle body.



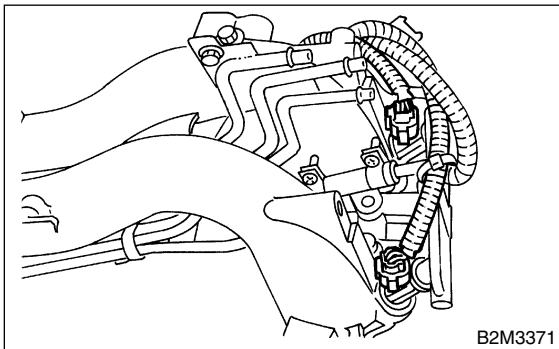
8) Disconnect pressure regulator vacuum hose from intake manifold.



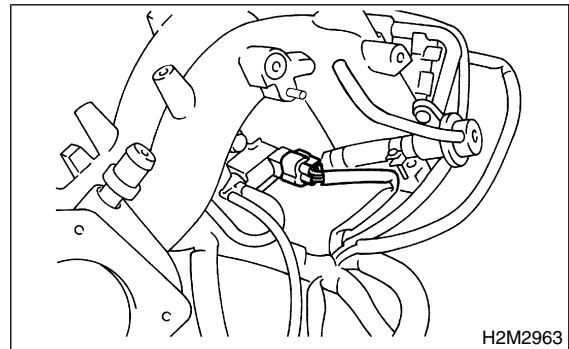
9) Remove fuel pipe protector LH.



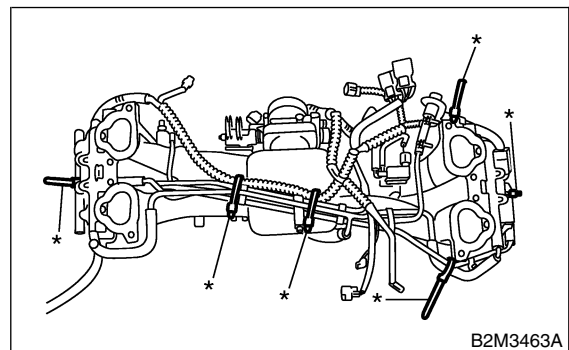
10) Disconnect connectors from fuel injectors.



11) Disconnect connector from purge control solenoid valve.

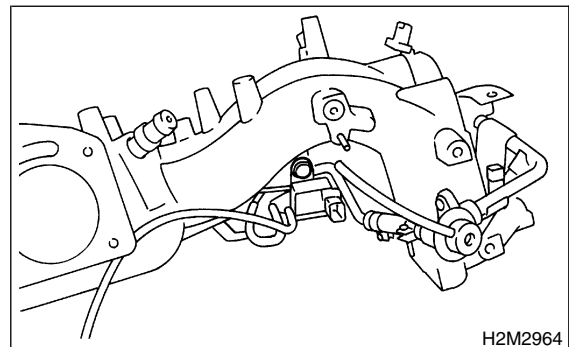


12) Remove harness bands (*) which hold engine harness onto intake manifold.

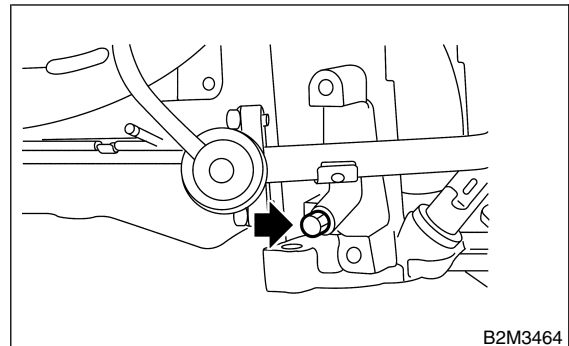


13) Remove engine harness from intake manifold.

14) Remove purge control solenoid valve.



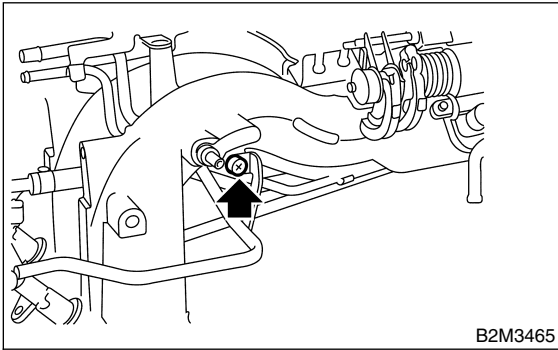
15) Remove bolt which installs injector pipe on intake manifold as shown in figure.



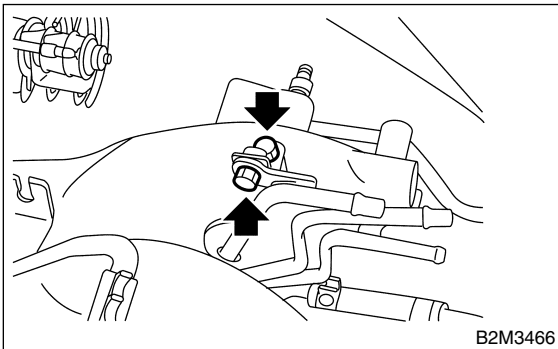
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

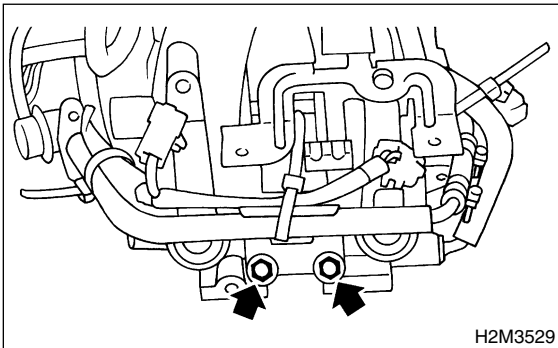
16) Remove bolt which installs injector pipe on intake manifold.



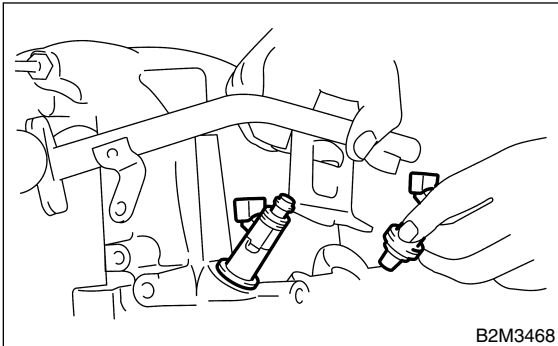
17) Remove two bolts which hold fuel pipes on the left side of intake manifold.



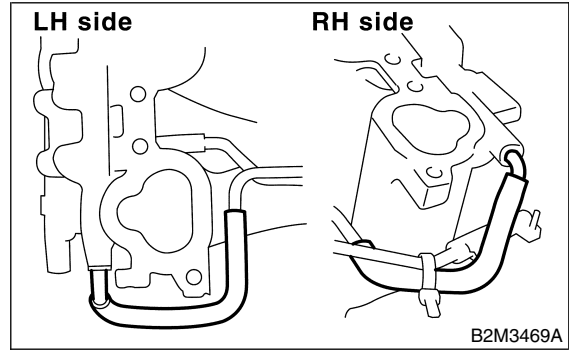
18) Remove bolt which installs injector pipe on intake manifold.



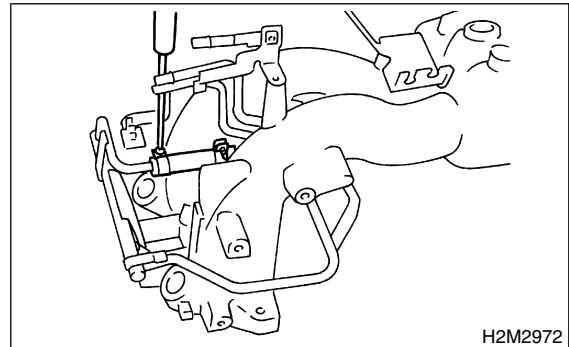
19) Remove fuel injector while lifting up fuel injector pipe.



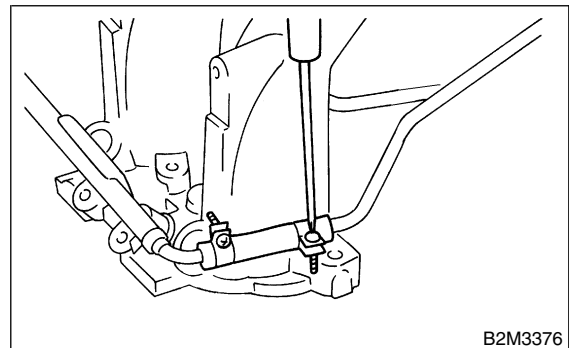
20) Disconnect air by-pass hoses from intake manifold.



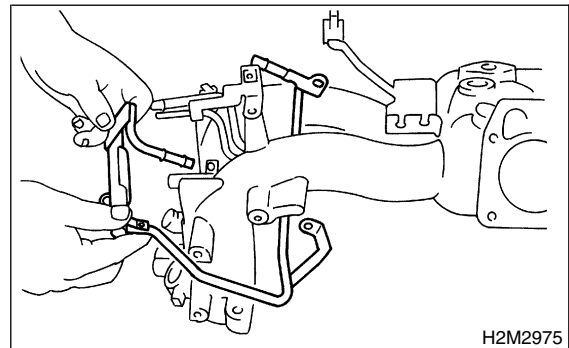
21) Loosen clamp which holds front left side fuel hose to injector pipe and remove the pipe from clamp.



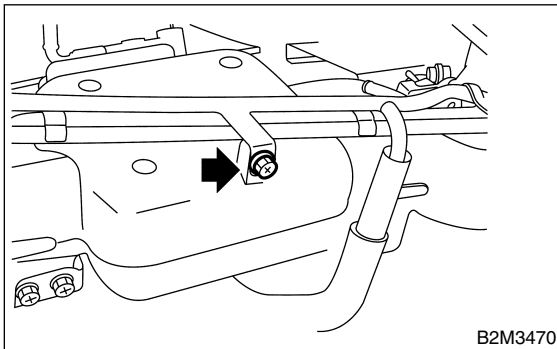
22) Loosen clamp which holds front right side fuel hose to injector pipe and remove the pipe from clamp.



23) Remove fuel injector pipe.



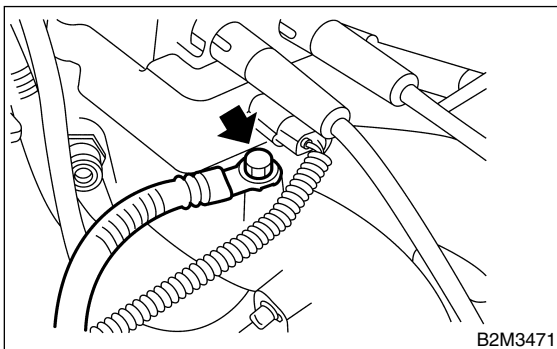
24) Remove bolt which installs fuel pipes on intake manifold.



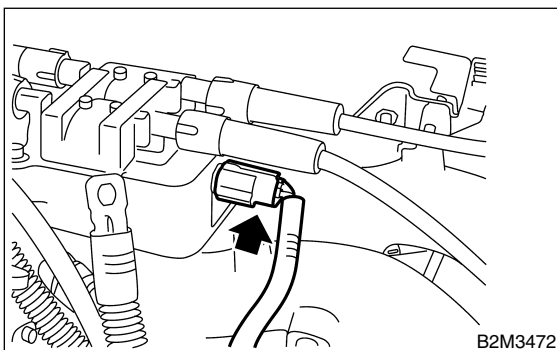
25) Remove fuel pipe assembly and pressure regulator, from intake manifold.

2. 2500 cc MODELS S105034A0604

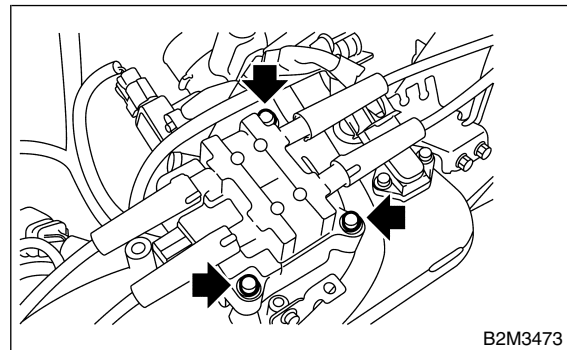
1) Disconnect engine ground terminal from intake manifold.



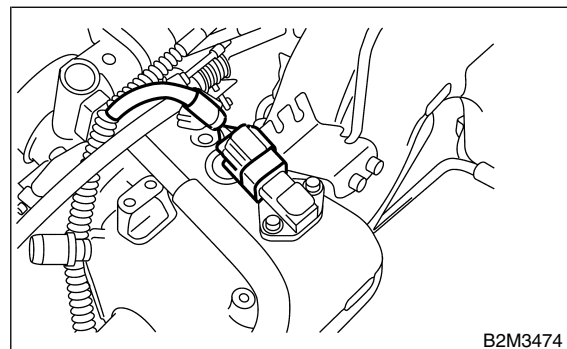
2) Disconnect connector from ignition coil and ignitor assembly.



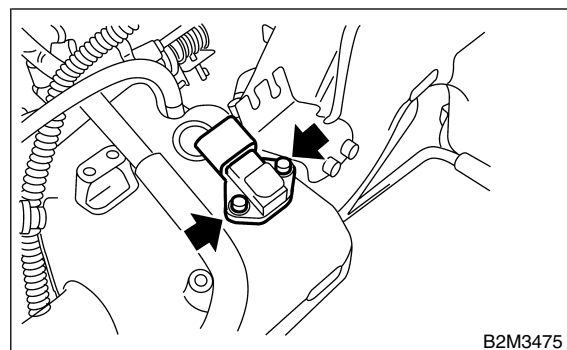
3) Remove ignition coil and ignitor assembly.



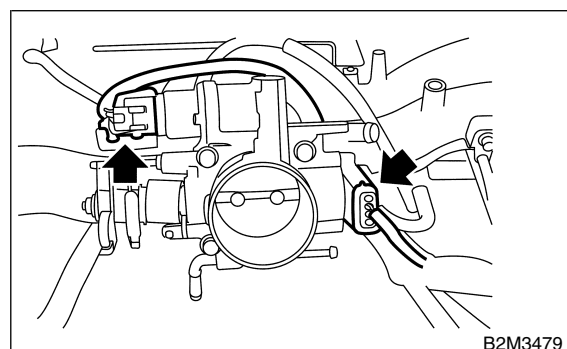
4) Disconnect connector from intake air temperature and pressure sensor.



5) Remove intake air temperature and pressure sensor from intake manifold.



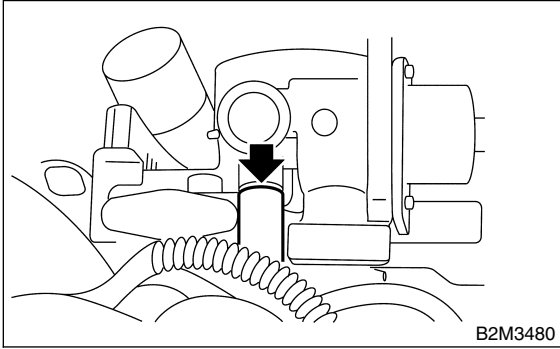
6) Disconnect connectors from throttle position sensor and idle air control solenoid valve.



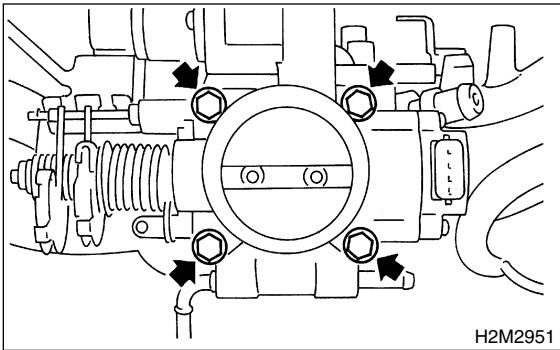
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

- 7) Disconnect air by-pass hose from throttle body.

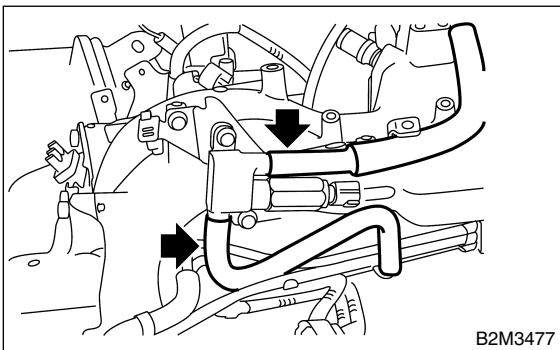


- 8) Remove throttle body.

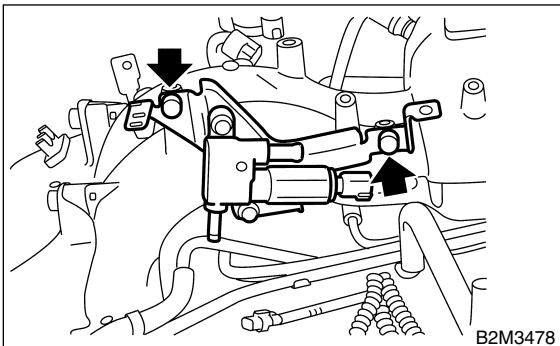


- 9) Disconnect connector from air assist injector solenoid valve.

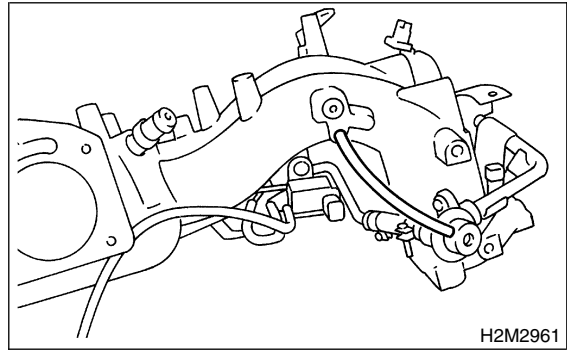
- 10) Disconnect air by-pass hoses from air assist solenoid valve.



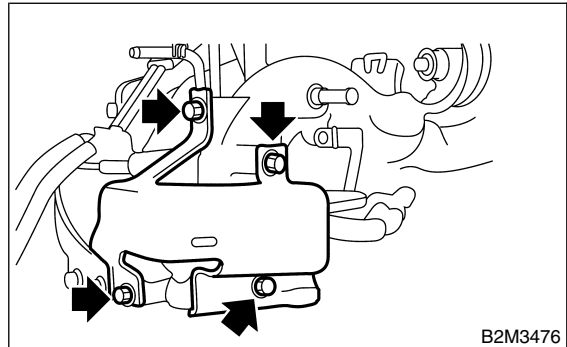
- 11) Remove air assist injector solenoid valve from intake manifold.



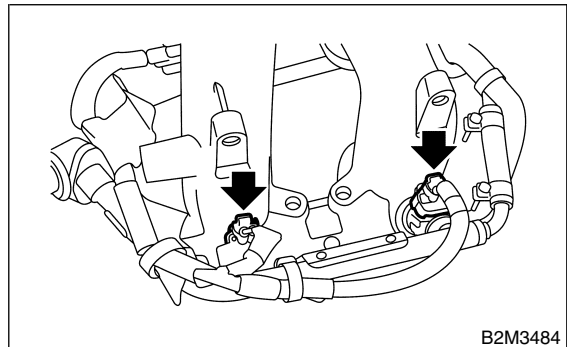
- 12) Disconnect pressure regulator vacuum hose from intake manifold.



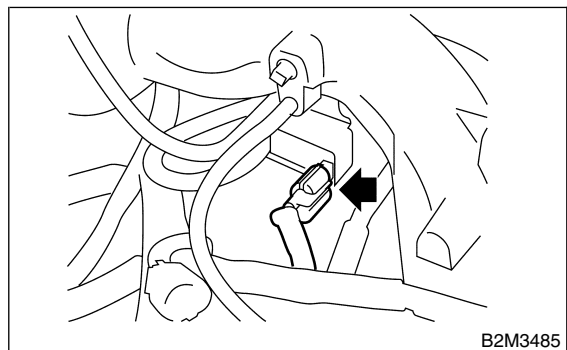
- 13) Remove fuel pipe protector LH.



- 14) Disconnect connectors from fuel injectors.



- 15) Disconnect connector from purge control solenoid valve.



- 16) Disconnect air by-pass hose from purge control solenoid valve.

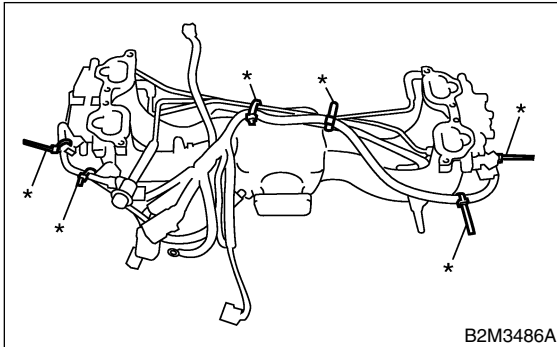
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

17) Remove harness bands (*) which hold engine harness onto intake manifold.

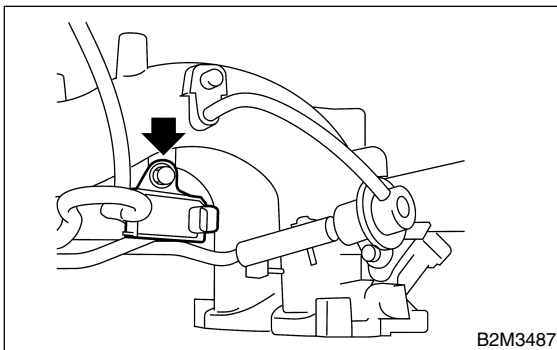
NOTE:

There is no harness band under the fuel protector.

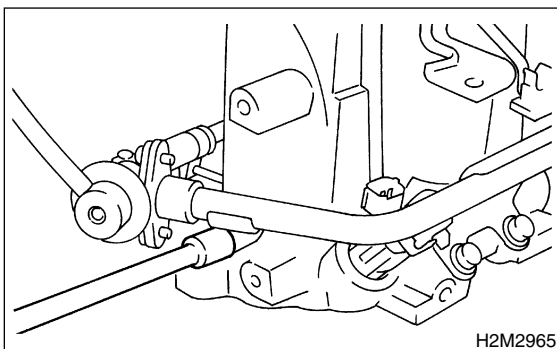


18) Remove engine harness from intake manifold.

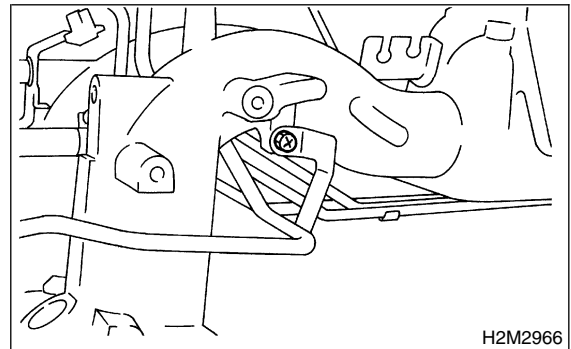
19) Remove purge control solenoid valve.



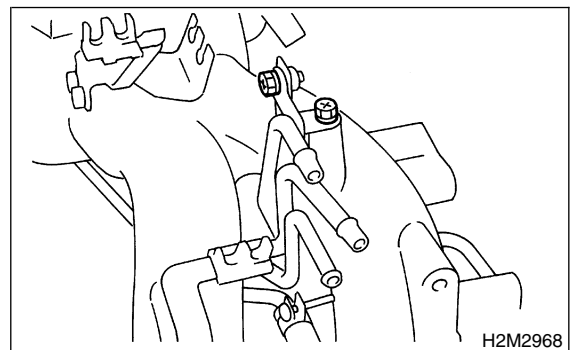
20) Remove bolt which installs injector pipe on intake manifold as shown in figure.



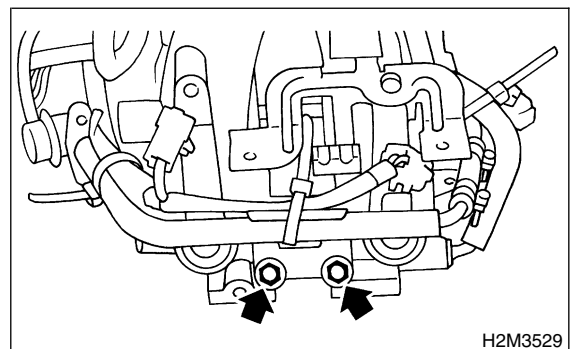
21) Remove bolt which installs injector pipe on intake manifold.



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

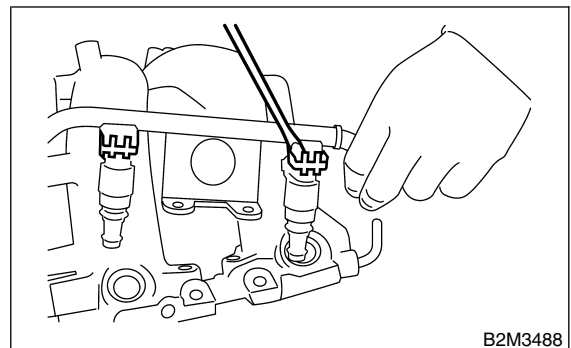


23) Remove bolt which installs injector pipe on intake manifold.



24) Remove fuel injectors.

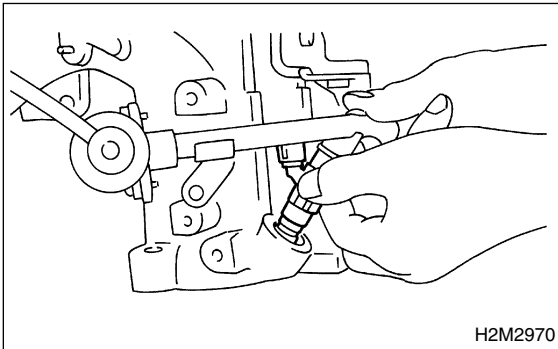
(1) Remove fuel injector securing clip.



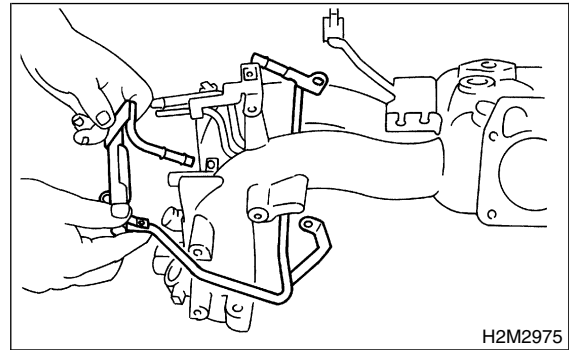
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

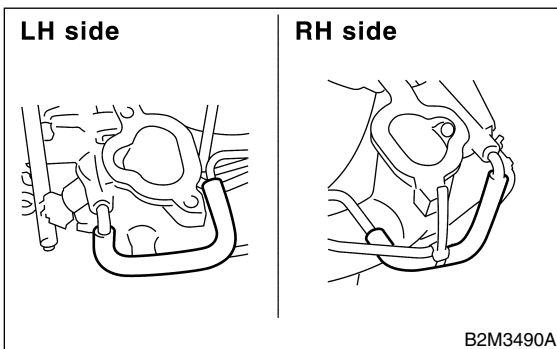
(2) Remove fuel injector while lifting up fuel injector pipe.



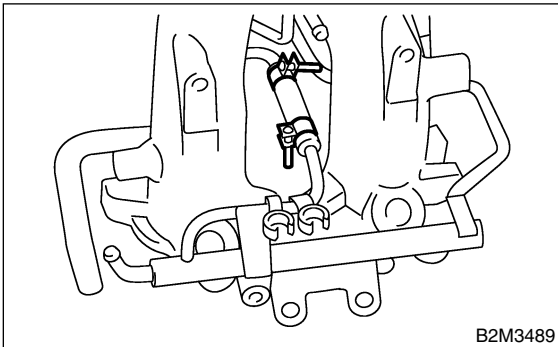
28) Remove fuel injector pipe.



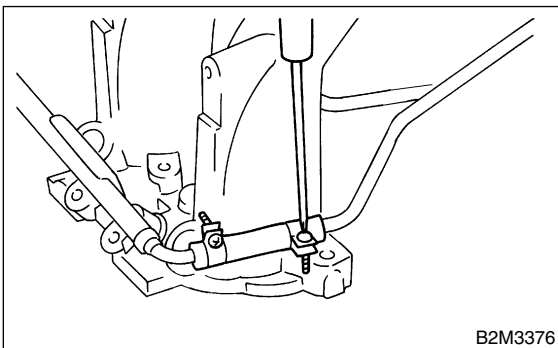
25) Disconnect air by-pass hoses from intake manifold.



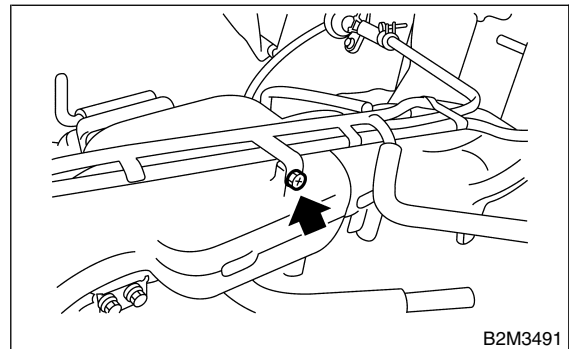
26) Loosen clamp which holds front left side fuel hose to injector pipe and remove the pipe from clamp.



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



29) Remove bolt which installs fuel pipes on intake manifold.



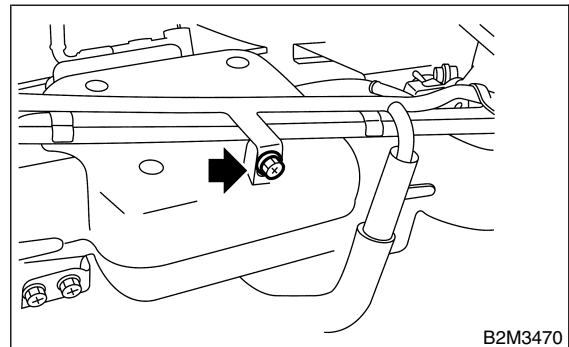
30) Remove fuel pipe assembly and pressure regulator, from intake manifold.

D: ASSEMBLY S105034A02

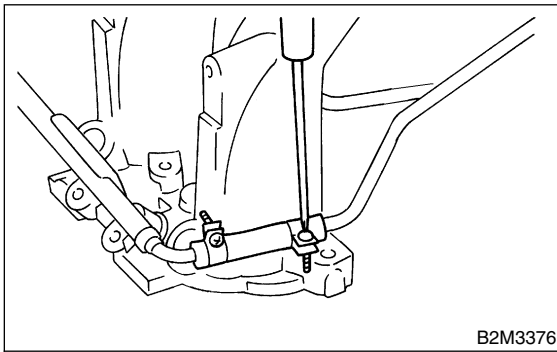
1. 2200 cc MODELS S105034A0203

- 1) Install fuel pipe assembly and pressure regulator, etc. to intake manifold.
- 2) Tighten bolt which installs fuel pipes on intake manifold.

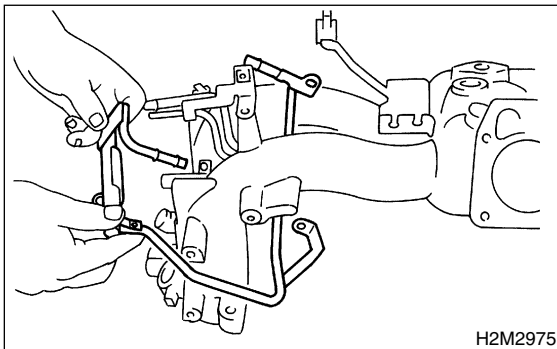
Tightening torque:
4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



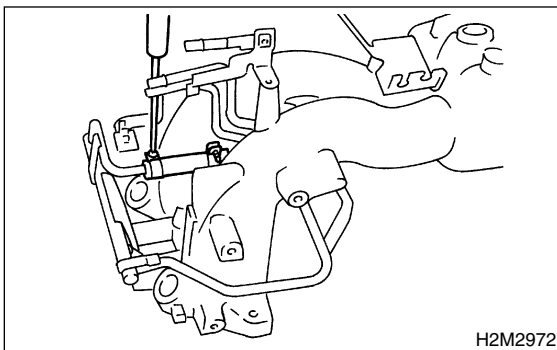
- 3) Connect right side fuel hose to injector pipe, and tighten clamp screw.



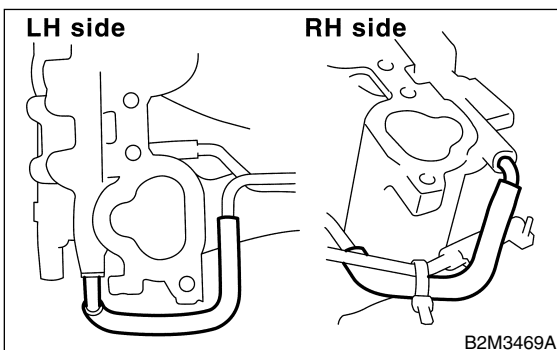
- 4) Install fuel injector pipe.



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



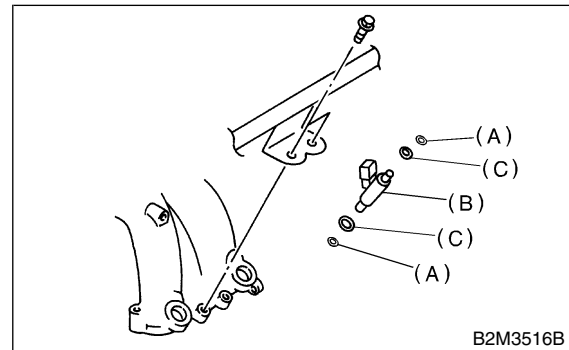
- 6) Connect air assist hoses.



- 7) Install fuel injectors.

CAUTION:

Always use new o-rings and insulators.

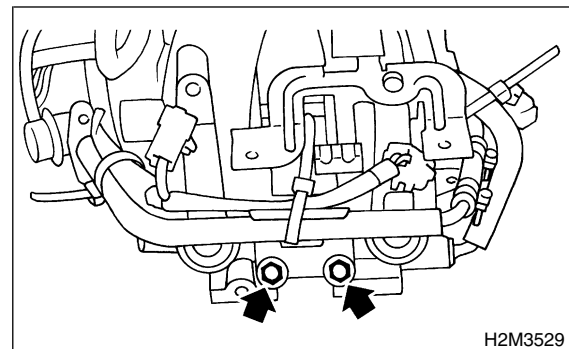


- (A) O-ring
(B) Fuel injector
(C) Insulator

- 8) Tighten bolt which installs injector pipe on intake manifold.

Tightening torque:

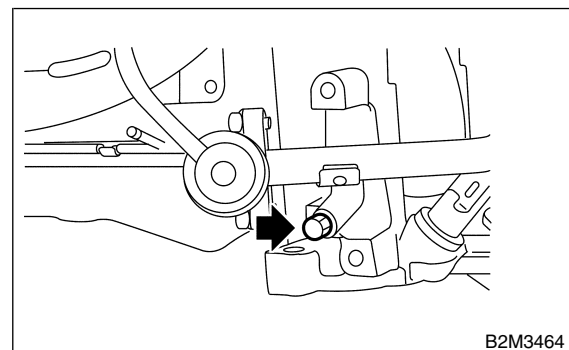
3.4 N·m (0.35 kgf-m, 2.5 ft-lb)



- 9) Tighten bolt which installs injectors pipe on intake manifold.

Tightening torque:

4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



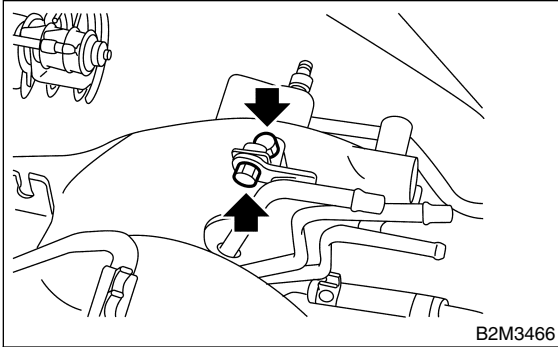
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

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

Tightening torque:

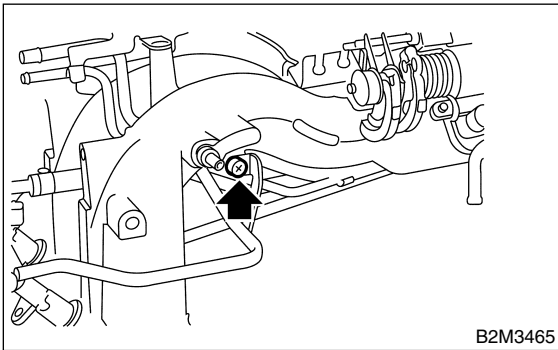
4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



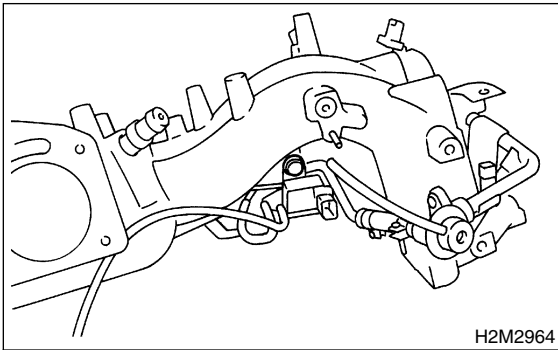
11) Tighten bolt which install injector pipe on intake manifold.

Tightening torque:

4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



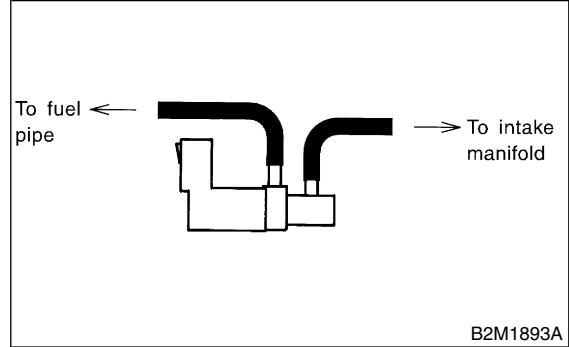
12) Install purge control solenoid valve.



13) Connect hoses to purge control solenoid valve.

CAUTION:

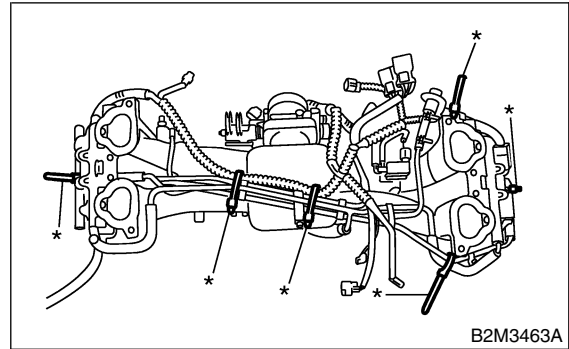
Carefully connect the evaporation hoses.



14) Install engine harness onto intake manifold.

15) Connect connectors to fuel injectors and purge control solenoid valve.

16) Hold engine harness by harness band (*).



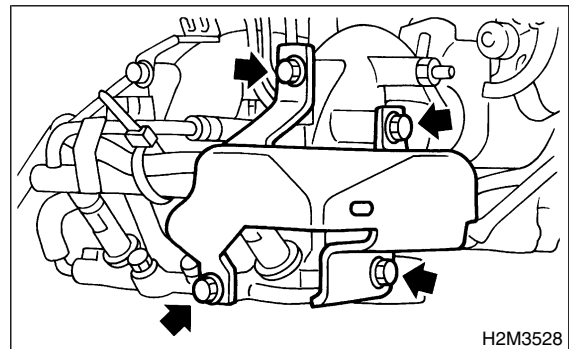
NOTE:

Do not use harness band on harnesses where they are supposed to be protected by the fuel pipe protector.

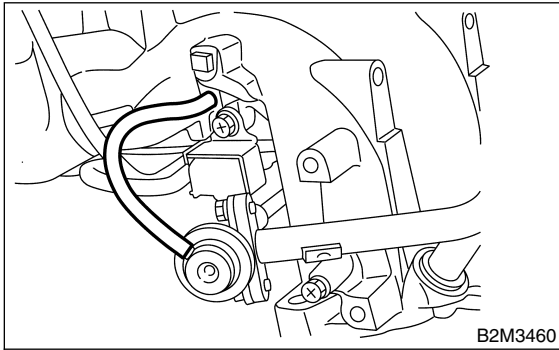
17) Install intake manifold protector LH.

Tightening torque:

18.6 N·m (1.9 kgf-m, 13.7 ft-lb)



18) Connect pressure regulator vacuum hose to intake manifold.



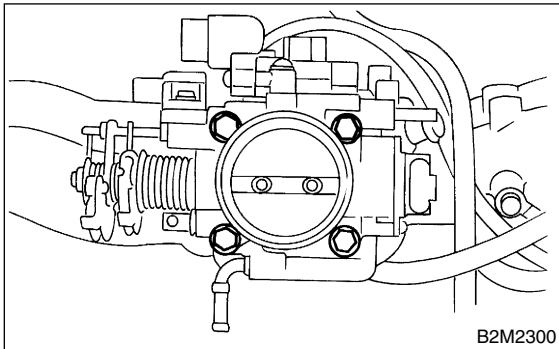
19) Install throttle body to intake manifold.

CAUTION:

Replace gasket with a new one.

Tightening torque:

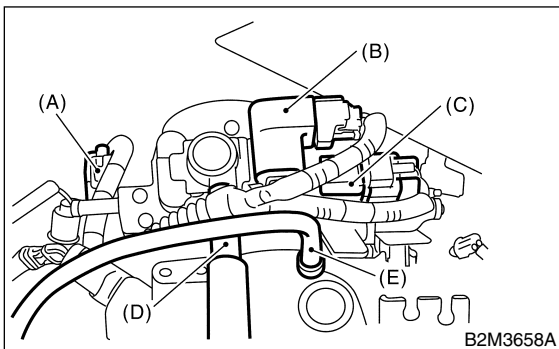
22 N·m (2.2 kgf-m, 15.9 ft-lb)



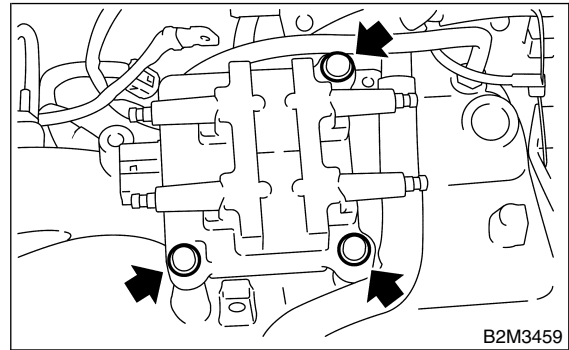
20) Connect connectors to throttle position sensor (A), idle air control solenoid valve (B) and intake manifold pressure sensor (C).

21) Connect air by-pass hose (D) to idle air control solenoid valve.

22) Connect air by-pass hose (E) to intake manifold.

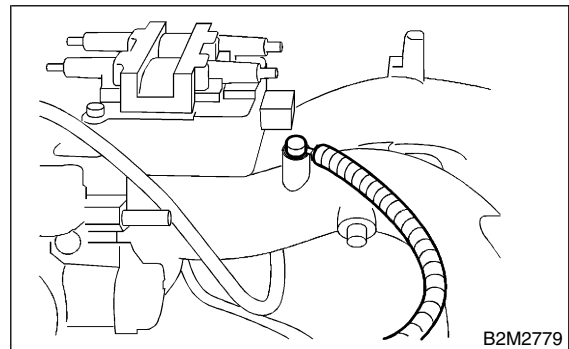


23) Install ignition coil and ignitor assembly.



24) Connect connector to ignition coil and ignitor assembly.

25) Install engine ground terminal to intake manifold.



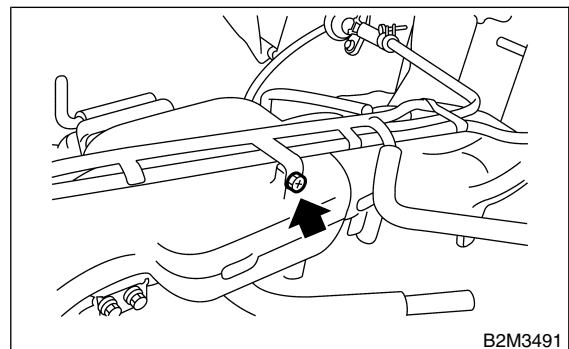
2. 2500 cc MODELS S105034A0204

1) Install fuel pipe assembly and pressure regulator, etc. to intake manifold.

2) Tighten bolt which installs fuel pipes on intake manifold.

Tightening torque:

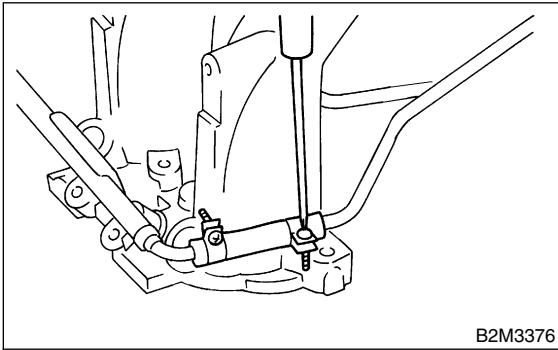
4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



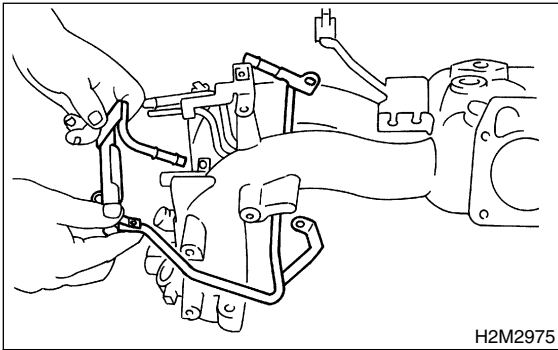
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

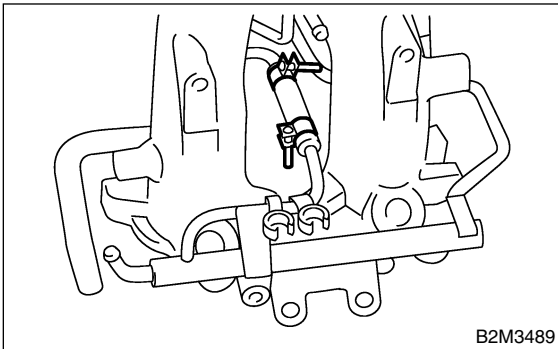
- 3) Connect right side fuel hose to injector pipe, and tighten clamp screw.



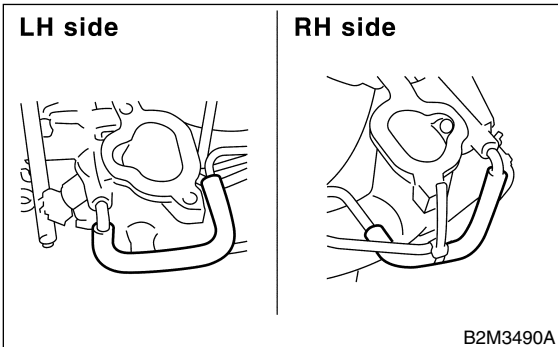
- 4) Install fuel injector pipe.



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

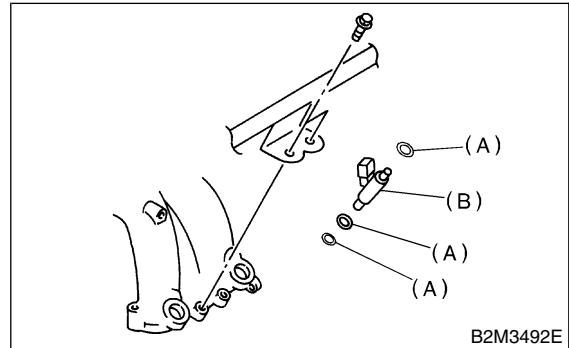


- 6) Connect air assist hoses.

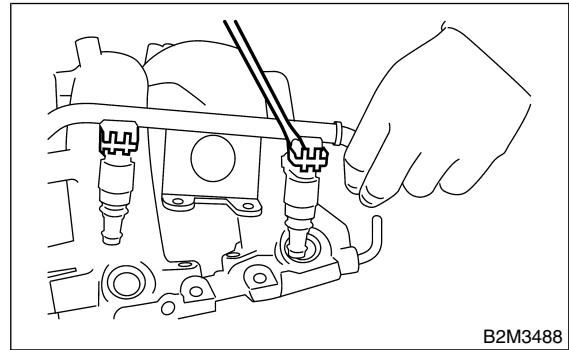


- 7) Install fuel injectors.

CAUTION:
Always use new o-rings.

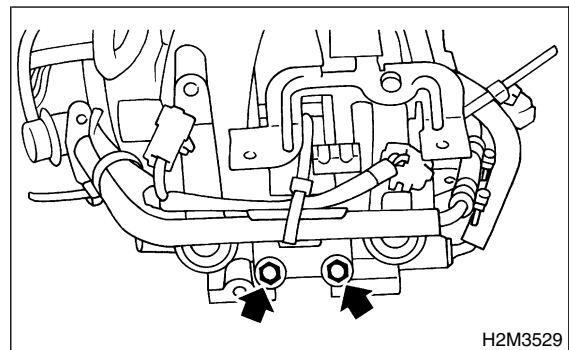


NOTE:
Do not forget to install the fuel injector securing clip.



- 8) Tighten bolt which installs injector pipe on intake manifold.

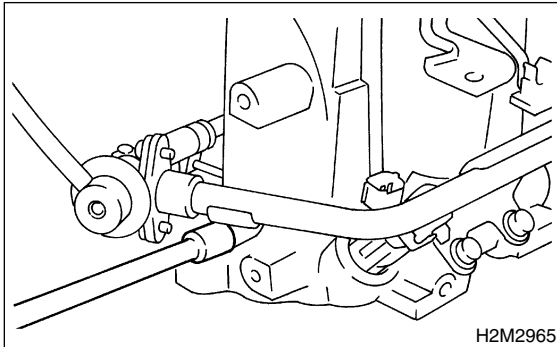
Tightening torque:
3.4 N·m (0.35 kgf-m, 2.5 ft-lb)



- 9) Tighten bolt which install injector pipe on intake manifold.

Tightening torque:

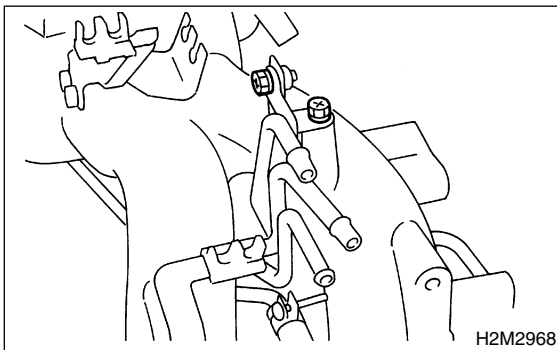
4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



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

Tightening torque:

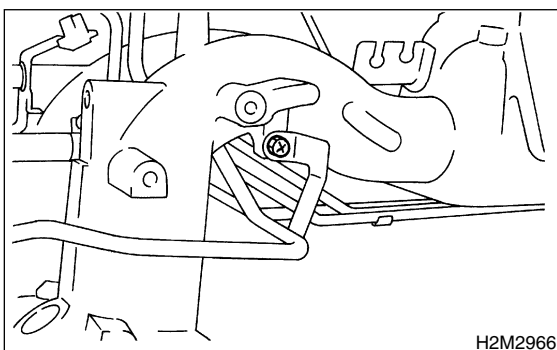
4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



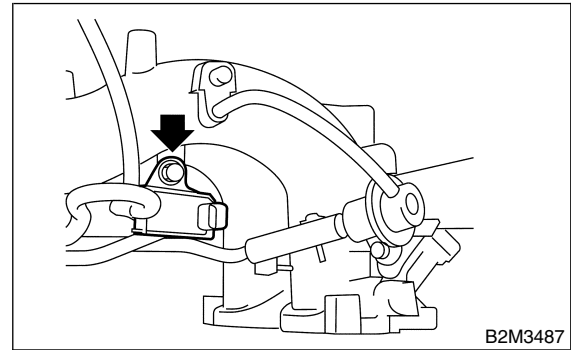
- 11) Tighten bolt which install injector pipe on intake manifold.

Tightening torque:

4.9 N·m (0.5 kgf-m, 3.6 ft-lb)



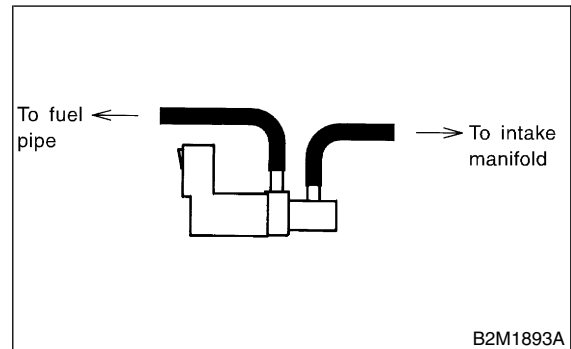
- 12) Install purge control solenoid valve.



- 13) Connect hoses to purge control solenoid valve.

CAUTION:

Carefully connect the evaporation hoses.



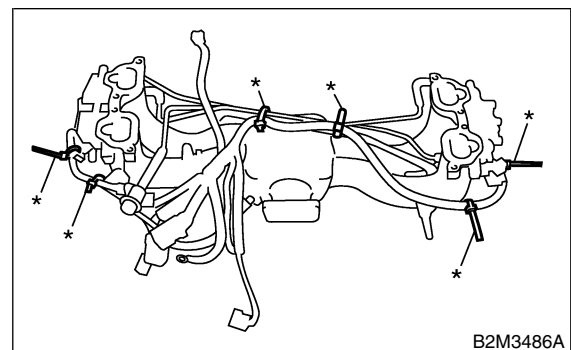
- 14) Install engine harness onto intake manifold.

- 15) Connect connectors to fuel injectors and purge control solenoid valve.

- 16) Hold engine harness by harness band (*).

NOTE:

Do not use harness band on harnesses where they are supposed to be protected by the fuel pipe protector.



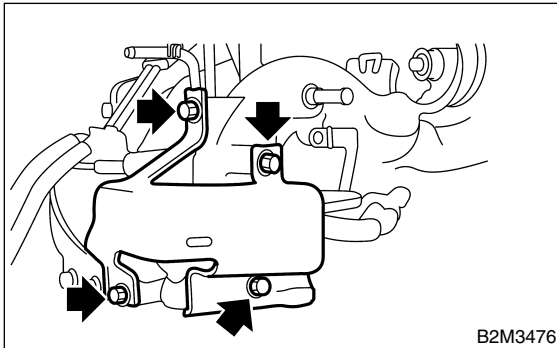
INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

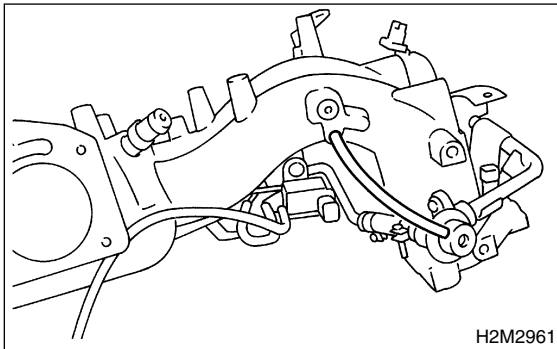
17) Install fuel pipe protector LH.

Tightening torque:

18.6 N·m (1.9 kgf-m, 13.7 ft-lb)



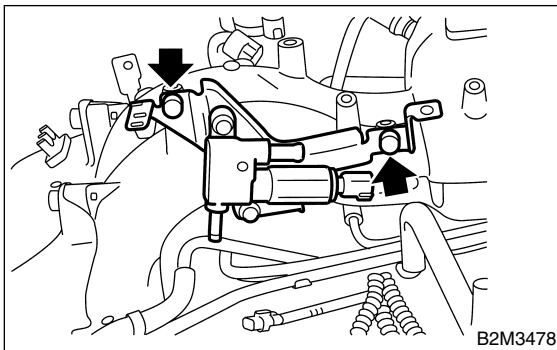
18) Connect pressure regulator vacuum hose to intake manifold.



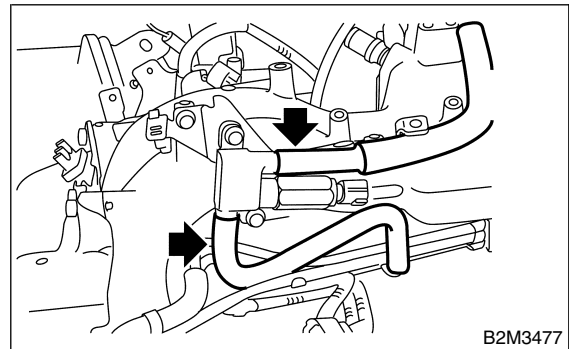
19) Install air assist injector solenoid valve to bracket.

Tightening torque:

16 N·m (1.6 kgf-m, 11.6 ft-lb)



20) Connect air by-pass hoses to air assist solenoid valve.



21) Connect connector to air assist solenoid valve.

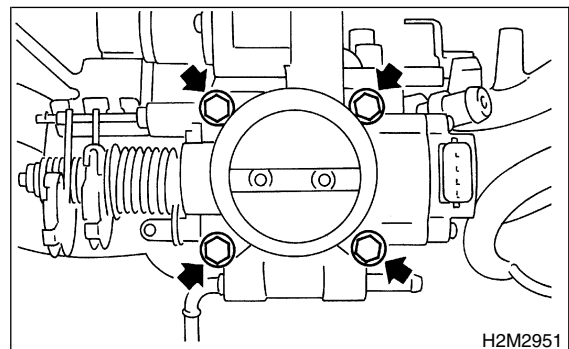
22) Install throttle body to intake manifold.

CAUTION:

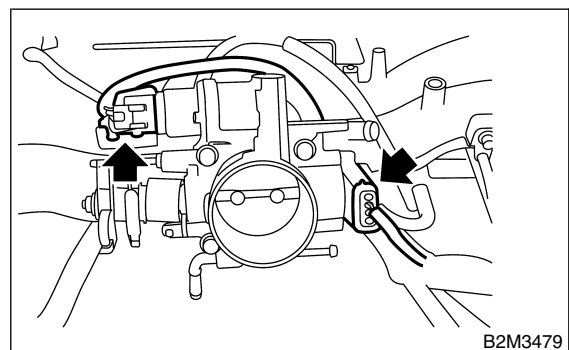
Replace gasket with a new one.

Tightening torque:

22 N·m (2.2 kgf-m, 15.9 ft-lb)



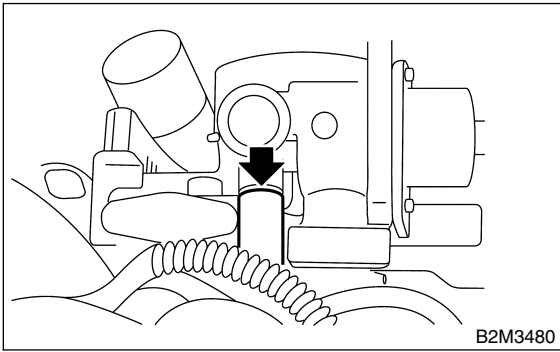
23) Connect connector to throttle position sensor and idle air control solenoid valve.



INTAKE MANIFOLD

Fuel Injection (Fuel Systems)

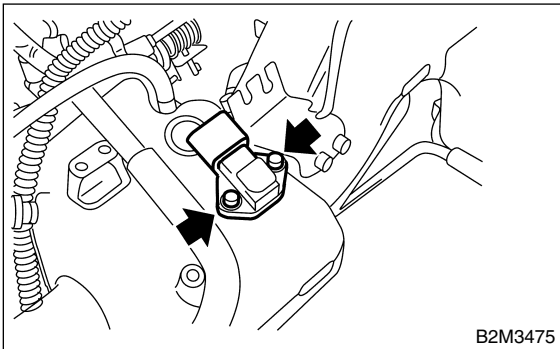
24) Connect air by-pass hose to throttle body.



25) Install intake air temperature and pressure sensor.

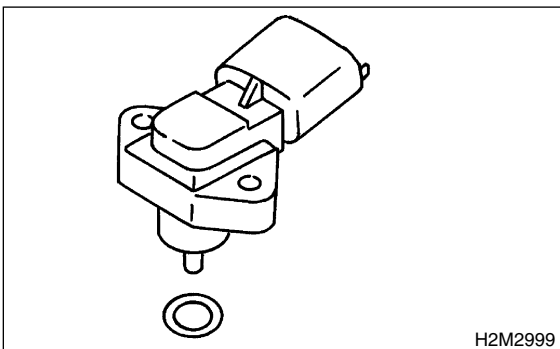
Tightening torque:

2.0 N·m (0.2 kgf-m, 1.4 ft-lb)



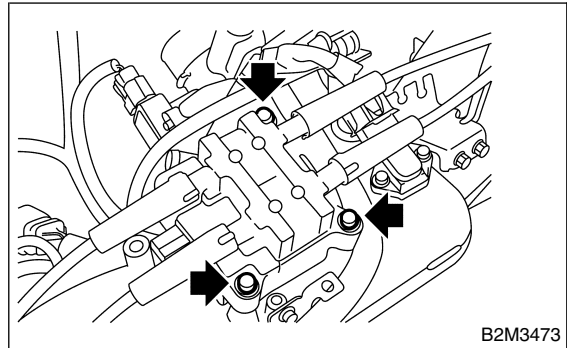
CAUTION:

Replace O-ring with new one.



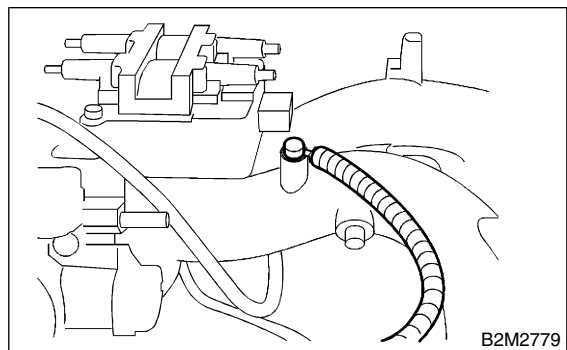
26) Connect connector to intake air temperature and pressure sensor.

27) Install ignition coil and ignitor assembly.



28) Connect connector to ignition coil and ignitor assembly.

29) Install engine ground terminal to intake manifold.



E: INSPECTION

S105034A10

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