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FUEL INJECTION (FUEL SYTEMS)

General Description

FUEL INJECTION (FUEL SYSTEMS)

1. General Description

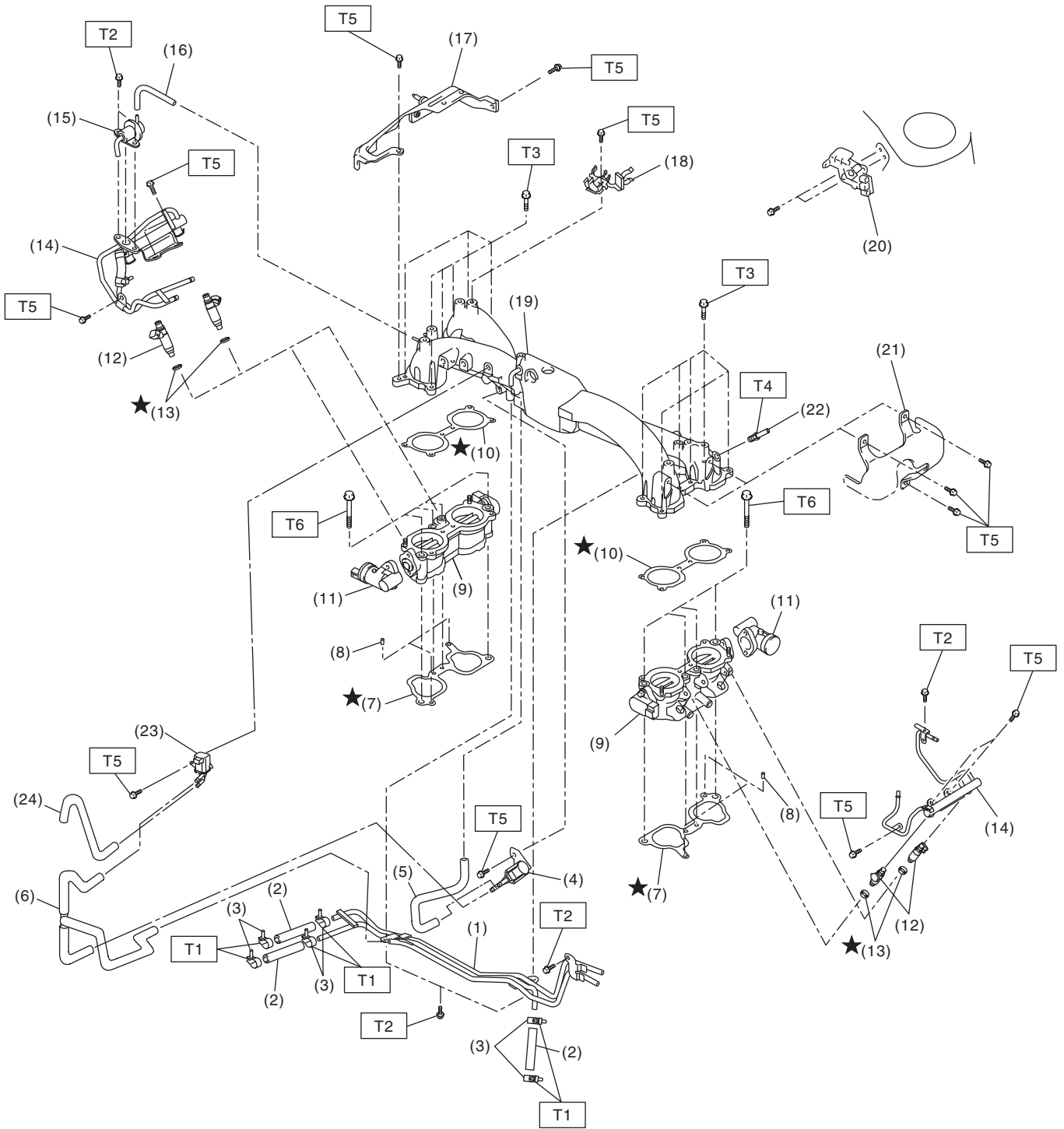
A: SPECIFICATION

Item		Specification
Fuel tank	Capacity	60 ℓ (15.9 US gal, 13.2 Imp gal)
	Location	Under rear seat
Fuel pump	Type	Impeller
	Shutoff discharge pressure	450 — 677 kPa (4.59 — 6.9 kg/cm ² , 65.27 — 98.2 psi)
	Discharge rate	Except for STI model: 145 ℓ (38.3 US gal, 31.9 Imp gal)/h or more STI model: 165 ℓ (43.6 US gal, 36.3 Imp gal)/h or more [12 V at 300 kPa (3.06 kg/cm ² , 43.5 psi)]
Fuel filter		In-tank type

B: COMPONENT

1. INTAKE MANIFOLD

- Except for STI model



FU-03168

General Description

FUEL INJECTION (FUEL SYSTEMS)

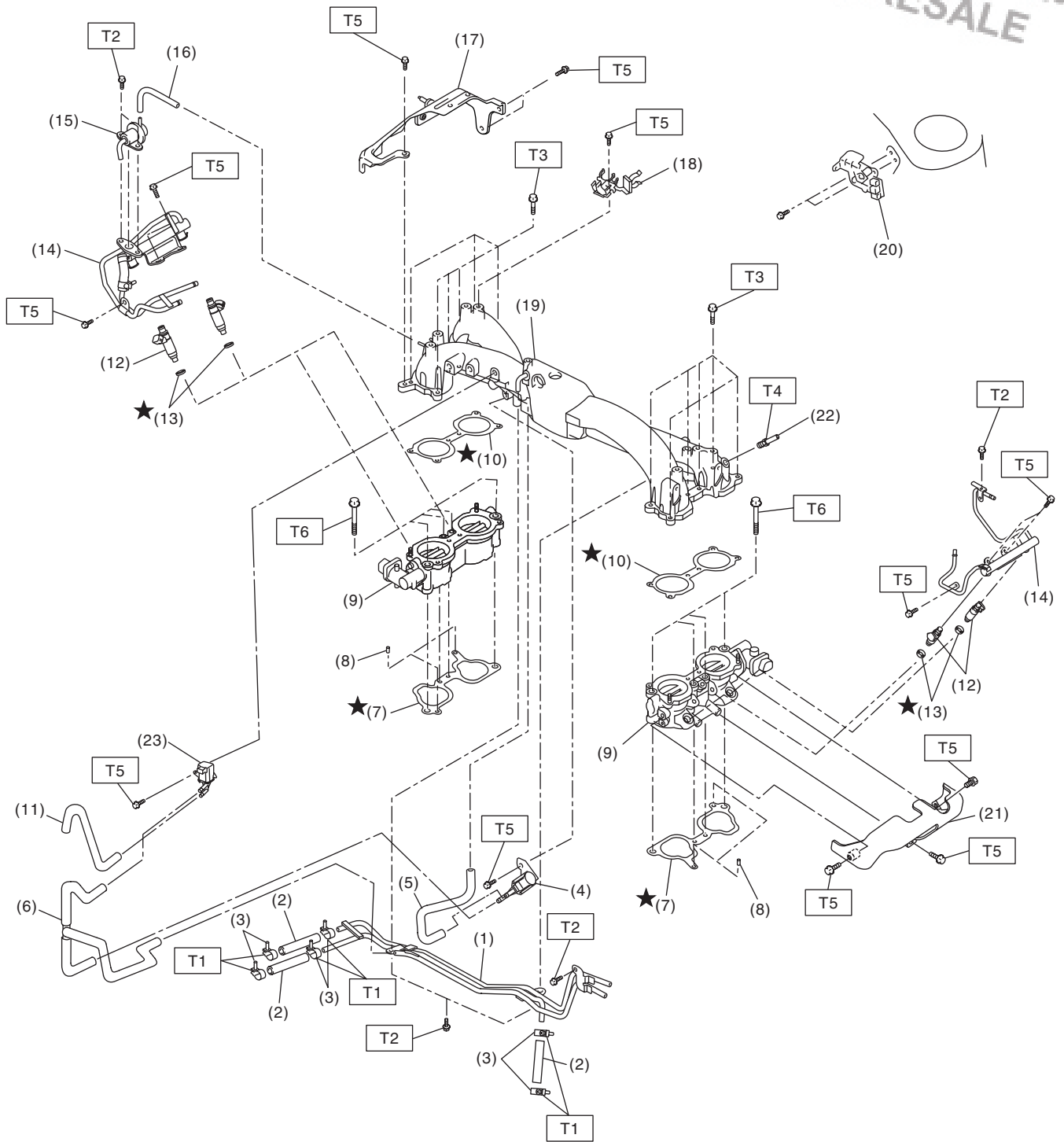
- | | | |
|--------------------------------------|--|-------------------------------------|
| (1) Fuel pipe ASSY | (12) Fuel injector | (22) Nipple |
| (2) Fuel hose | (13) O-ring | (23) Purge control solenoid valve 2 |
| (3) Clamp | (14) Fuel injector pipe | (24) Vacuum hose B |
| (4) Purge control solenoid valve 1 | (15) Pressure regulator | |
| (5) Vacuum hose A | (16) Pressure regulator hose | |
| (6) Vacuum control hose | (17) Fuel pipe protector RH | |
| (7) Intake manifold gasket | (18) Blow-by hose stay | |
| (8) Guide pin | (19) Intake manifold | |
| (9) Tumble generator valve ASSY | (20) Wastegate control solenoid valve ASSY | |
| (10) Tumble generator valve gasket | (21) Fuel pipe protector LH | |
| (11) Tumble generator valve actuator | | |

Tightening torque:N-m (kgf-m, ft-lb)**T1: 1.25 (0.13, 0.34)****T2: 6.4 (0.65, 4.7)****T3: 8.25 (0.84, 6.1)****T4: 17 (1.73, 12.5)****T5: 19 (1.94, 14.0)****T6: 25 (2.5, 18.1)**

General Description

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- STI model



FU-03169

General Description

FUEL INJECTION (FUEL SYSTEMS)

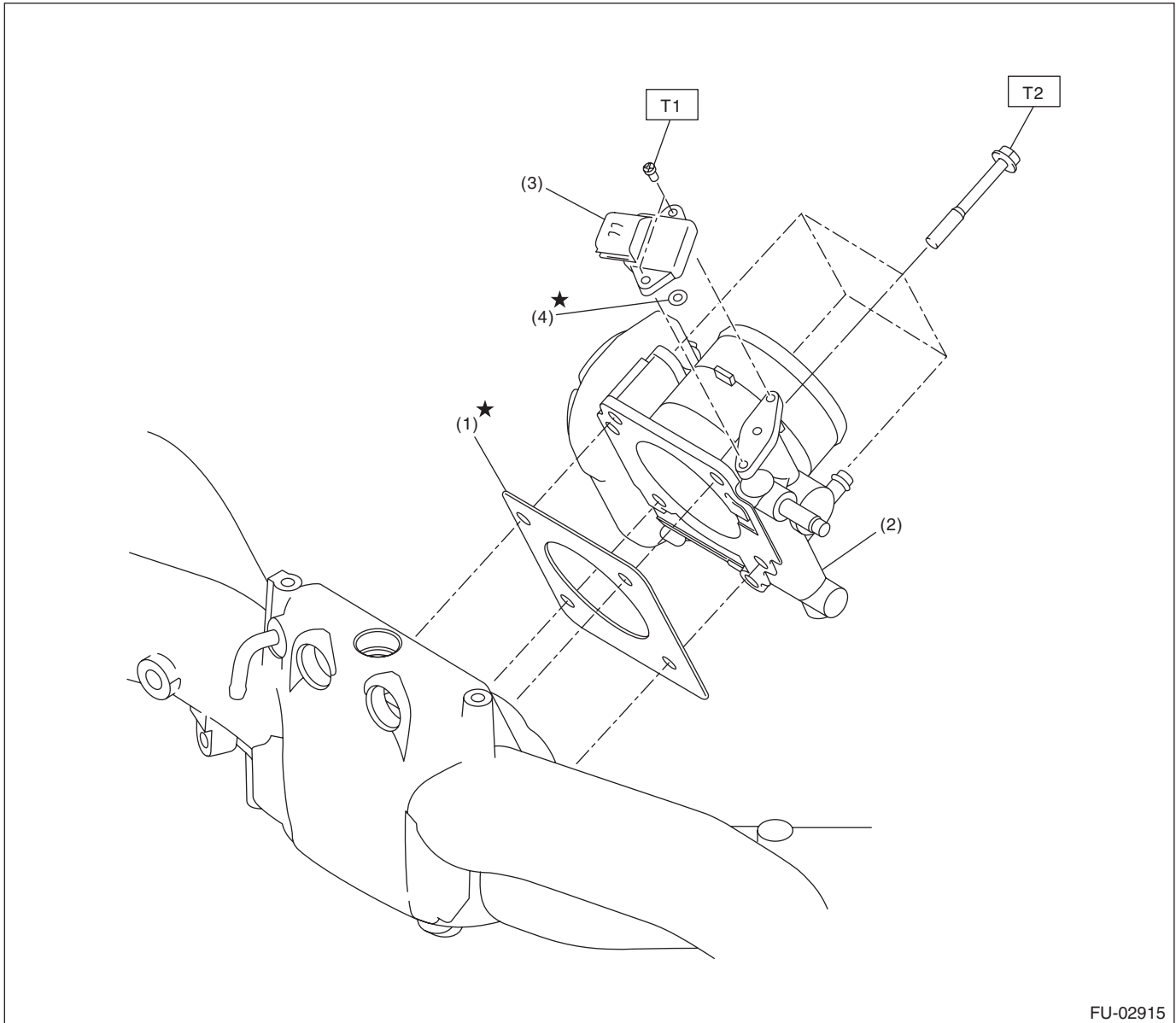
- | | |
|------------------------------------|--|
| (1) Fuel pipe ASSY | (12) Fuel injector |
| (2) Fuel hose | (13) O-ring |
| (3) Clamp | (14) Fuel injector pipe |
| (4) Purge control solenoid valve 1 | (15) Pressure regulator |
| (5) Vacuum hose A | (16) Pressure regulator hose |
| (6) Vacuum control hose | (17) Fuel pipe protector RH |
| (7) Intake manifold gasket | (18) Blow-by hose stay |
| (8) Guide pin | (19) Intake manifold |
| (9) Tumble generator valve ASSY | (20) Wastegate control solenoid valve ASSY |
| (10) Tumble generator valve gasket | (21) Fuel pipe protector LH |
| (11) Vacuum hose B | |

- | |
|-------------------------------------|
| (22) Nipple |
| (23) Purge control solenoid valve 2 |

Tightening torque:N·m (kgf-m, ft-lb)

- T1: 1.25 (0.13, 0.34)**
T2: 6.4 (0.65, 4.7)
T3: 8.25 (0.84, 6.1)
T4: 17 (1.73, 12.5)
T5: 19 (1.94, 14.0)
T6: 25 (2.5, 18.1)

2. AIR INTAKE SYSTEM



FU-02915

- | | |
|---------------------------------------|------------|
| (1) Gasket | (4) O-ring |
| (2) Throttle body | |
| (3) Manifold absolute pressure sensor | |

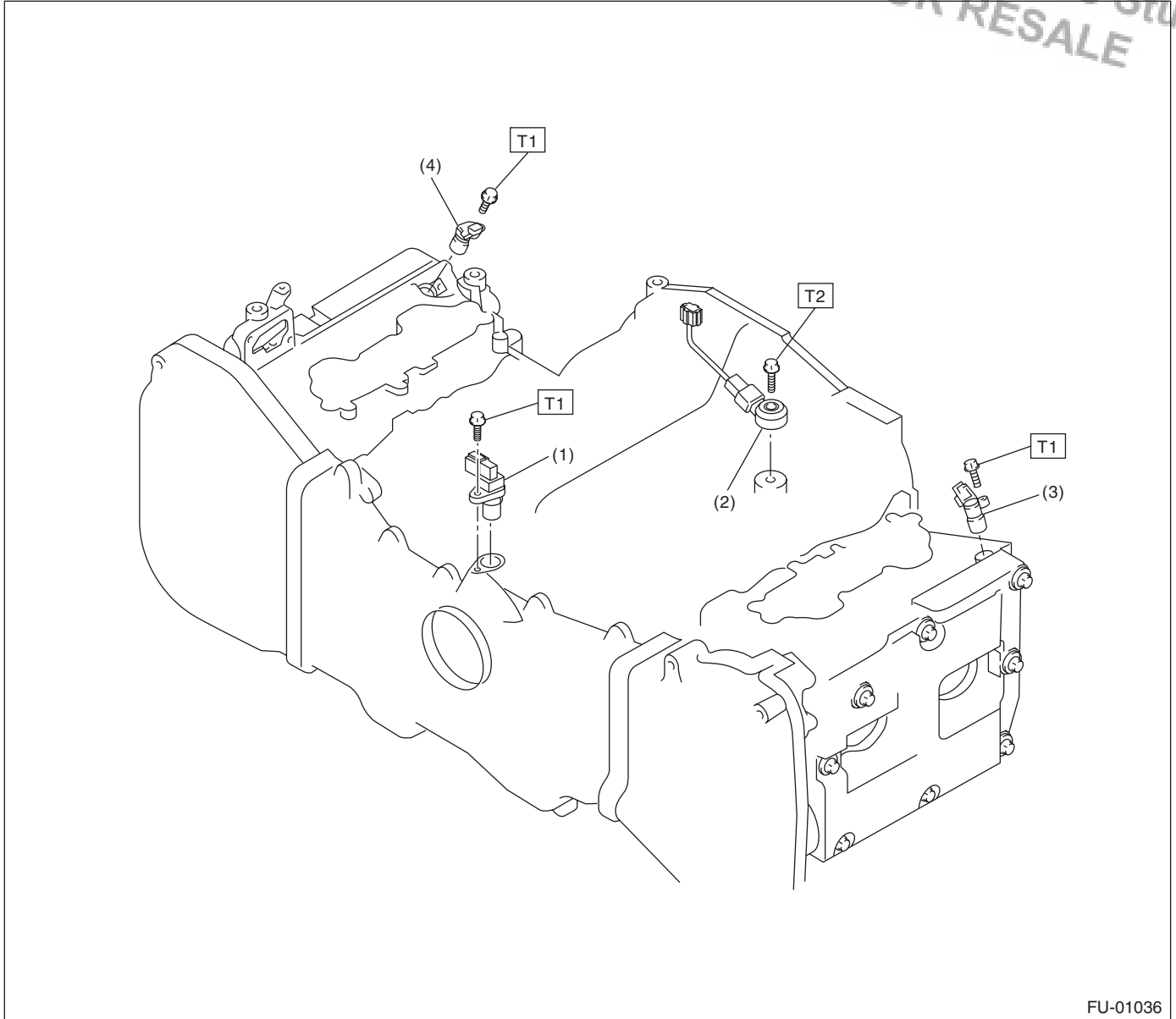
Tightening torque:N·m (kgf-m, ft-lb)

- T1: 1.6 (0.16, 1.2)**
T2: 8 (0.8, 5.9)

General Description

FUEL INJECTION (FUEL SYSTEMS)

3. CRANKSHAFT POSITION, CAMSHAFT POSITION AND KNOCK SENSORS



FU-01036

- (1) Crankshaft position sensor
- (2) Knock sensor
- (3) Camshaft position sensor LH

- (4) Camshaft position sensor RH

Tightening torque: N·m (kgf·m, ft·lb)

T1: 6.4 (0.65, 4.7)

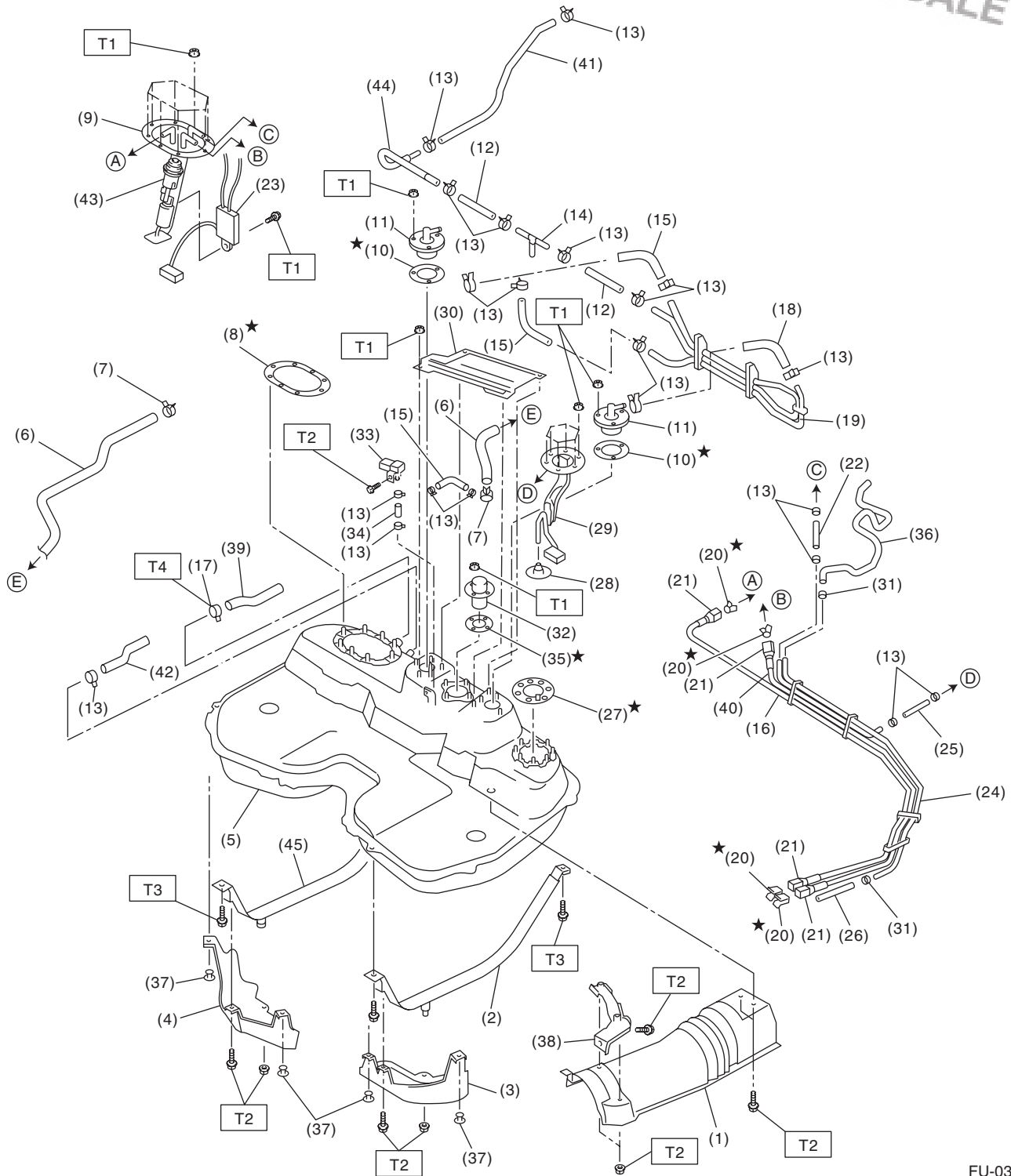
T2: 24 (2.4, 17.4)

General Description

FUEL INJECTION (FUEL SYSTEMS)

4. FUEL TANK

- Except for STI model



FU-03171

General Description

FUEL INJECTION (FUEL SYSTEMS)

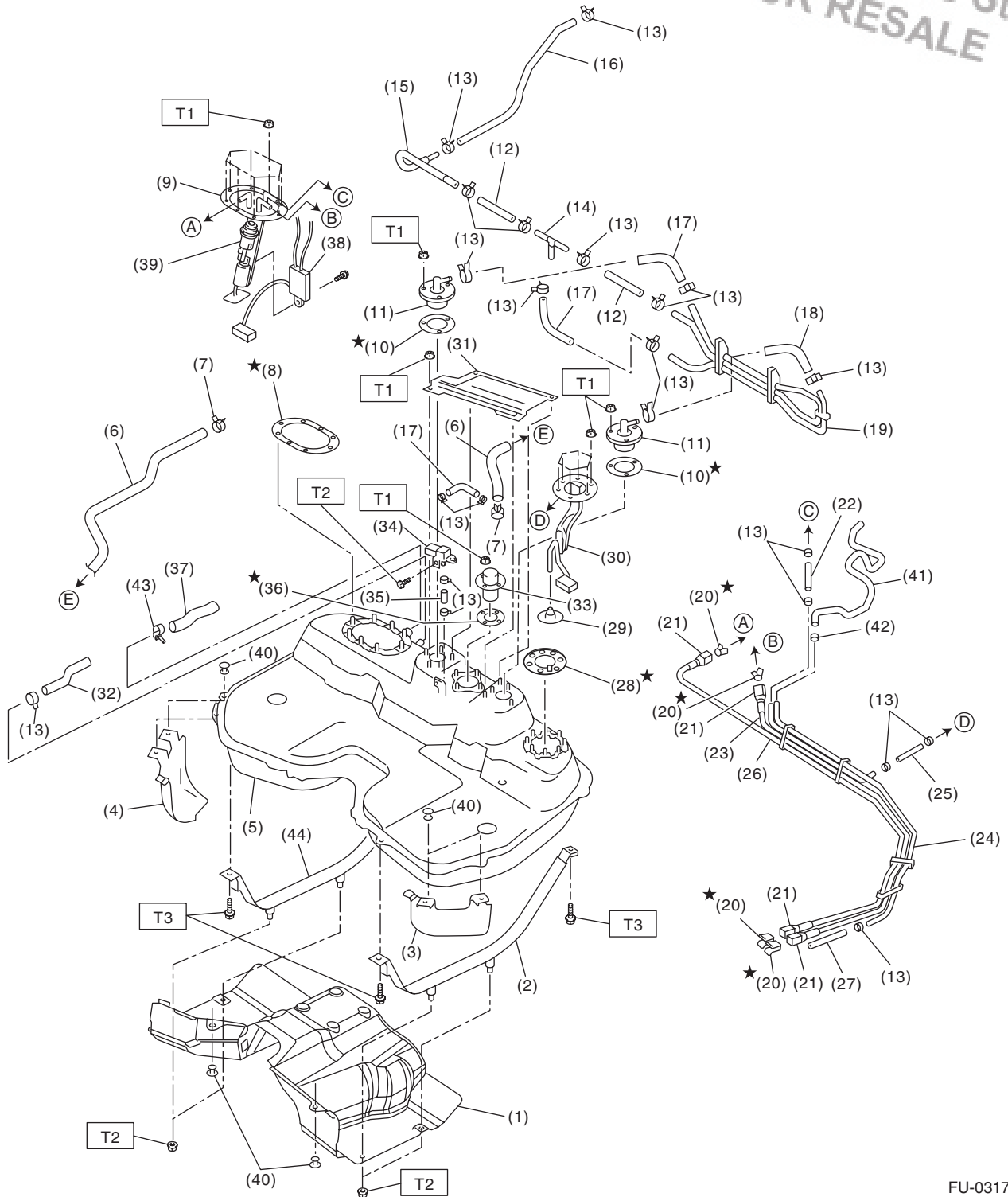
(1) Heat shield cover	(18) Evaporation hose C	(35) Vent valve gasket
(2) Fuel tank band LH	(19) Evaporation pipe ASSY	(36) Purge hose
(3) Protector LH	(20) Retainer	(37) Clip
(4) Protector RH	(21) Quick connector	(38) Cover bracket
(5) Fuel tank	(22) Jet pump hose A	(39) Fuel filler hose
(6) Canister hose A	(23) Fuel level sensor	(40) Fuel return tube
(7) Clamp	(24) Fuel pipe ASSY	(41) Evaporation hose E
(8) Fuel pump gasket	(25) Jet pump hose B	(42) Evaporation hose F
(9) Fuel pump ASSY	(26) Evaporation hose D	(43) Fuel filter
(10) Fuel cut valve gasket	(27) Fuel sub level sensor gasket	(44) Evaporation pipe
(11) Fuel cut valve	(28) Jet pump filter	(45) Fuel tank band RH
(12) Evaporation hose A	(29) Fuel sub level sensor	
(13) Clip	(30) Protect cover	
(14) Joint pipe	(31) Clip	
(15) Evaporation hose B	(32) Vent valve	
(16) Fuel delivery tube	(33) Fuel tank pressure sensor	
(17) Clamp	(34) Fuel tank pressure sensor hose	

Tightening torque:N-m (kgf-m, ft-lb)**T1: 4.4 (0.45, 3.3)****T2: 7.4 (0.75, 5.4)****T3: 33 (3.4, 25)****T4: 1.96 (0.20, 1.45)**

General Description

FUEL INJECTION (FUEL SYSTEMS)

- STI model



FU-03172

General Description

FUEL INJECTION (FUEL SYSTEMS)

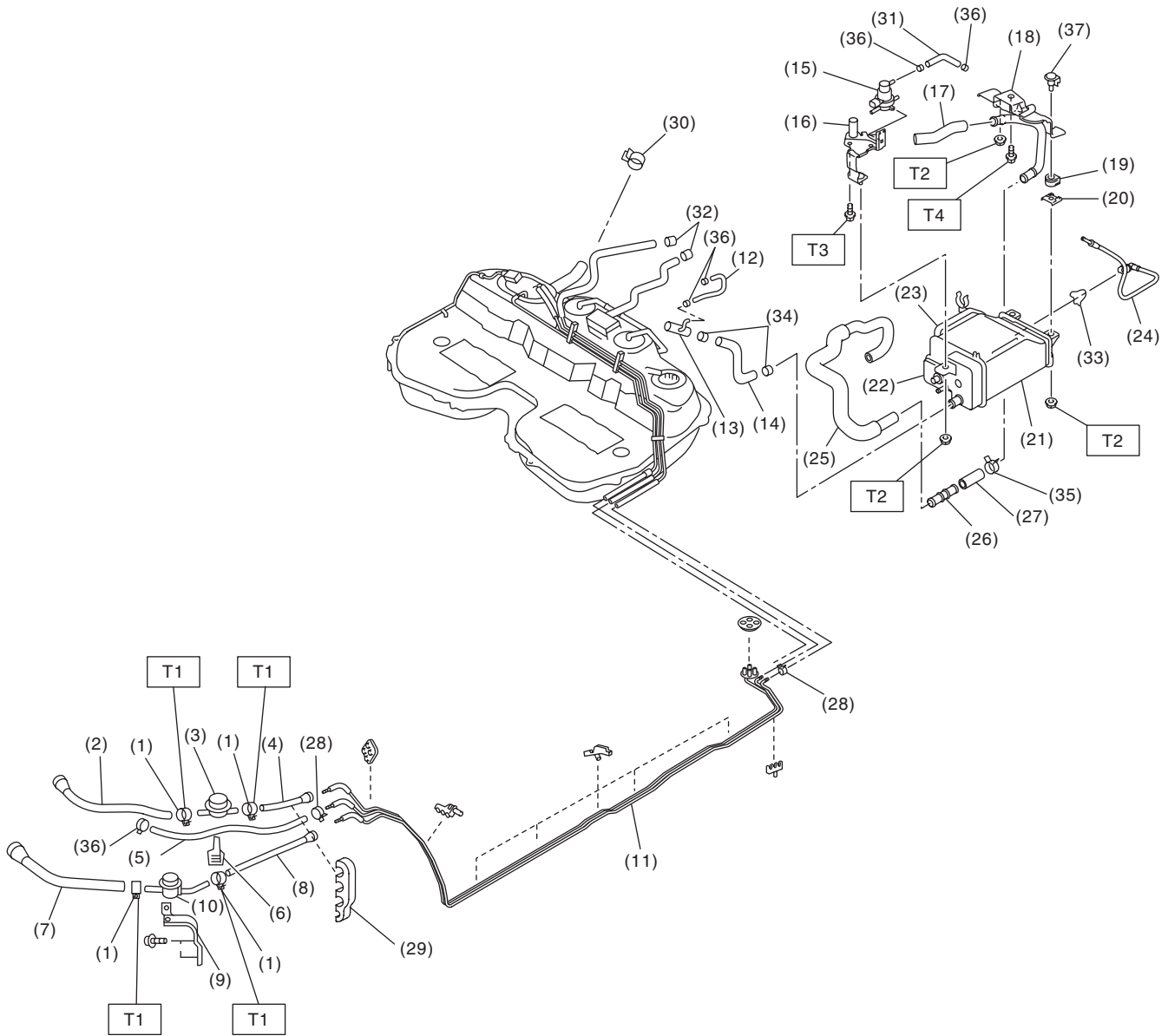
(1) Heat shield cover	(18) Evaporation hose D	(34) Fuel tank pressure sensor
(2) Fuel tank band LH	(19) Evaporation pipe ASSY	(35) Fuel tank pressure sensor hose
(3) Protector LH	(20) Retainer	(36) Vent valve gasket
(4) Protector RH	(21) Quick connector	(37) Fuel filler hose
(5) Fuel tank	(22) Jet pump hose A	(38) Fuel level sensor
(6) Canister hose A	(23) Fuel return tube	(39) Fuel filter
(7) Clamp	(24) Fuel pipe ASSY	(40) Clip
(8) Fuel pump gasket	(25) Jet pump hose B	(41) Evaporation hose G
(9) Fuel pump ASSY	(26) Fuel delivery tube	(42) Clamp
(10) Fuel cut valve gasket	(27) Evaporation hose E	(43) Clamp
(11) Fuel cut valve	(28) Fuel sub level sensor gasket	(44) Fuel tank band RH
(12) Evaporation hose A	(29) Jet pump filter	
(13) Clip	(30) Fuel sub level sensor	
(14) Joint pipe	(31) Protector cover	
(15) Evaporation pipe	(32) Evaporation hose F	
(16) Evaporation hose B	(33) Vent valve	
(17) Evaporation hose C		

Tightening torque:N·m (kgf·m, ft·lb)**T1: 4.4 (0.45, 3.3)****T2: 7.4 (0.75, 5.4)****T3: 33 (3.4, 25)**

General Description

FUEL INJECTION (FUEL SYSTEMS)

5. FUEL LINE



FU-03173

General Description

FUEL INJECTION (FUEL SYSTEMS)

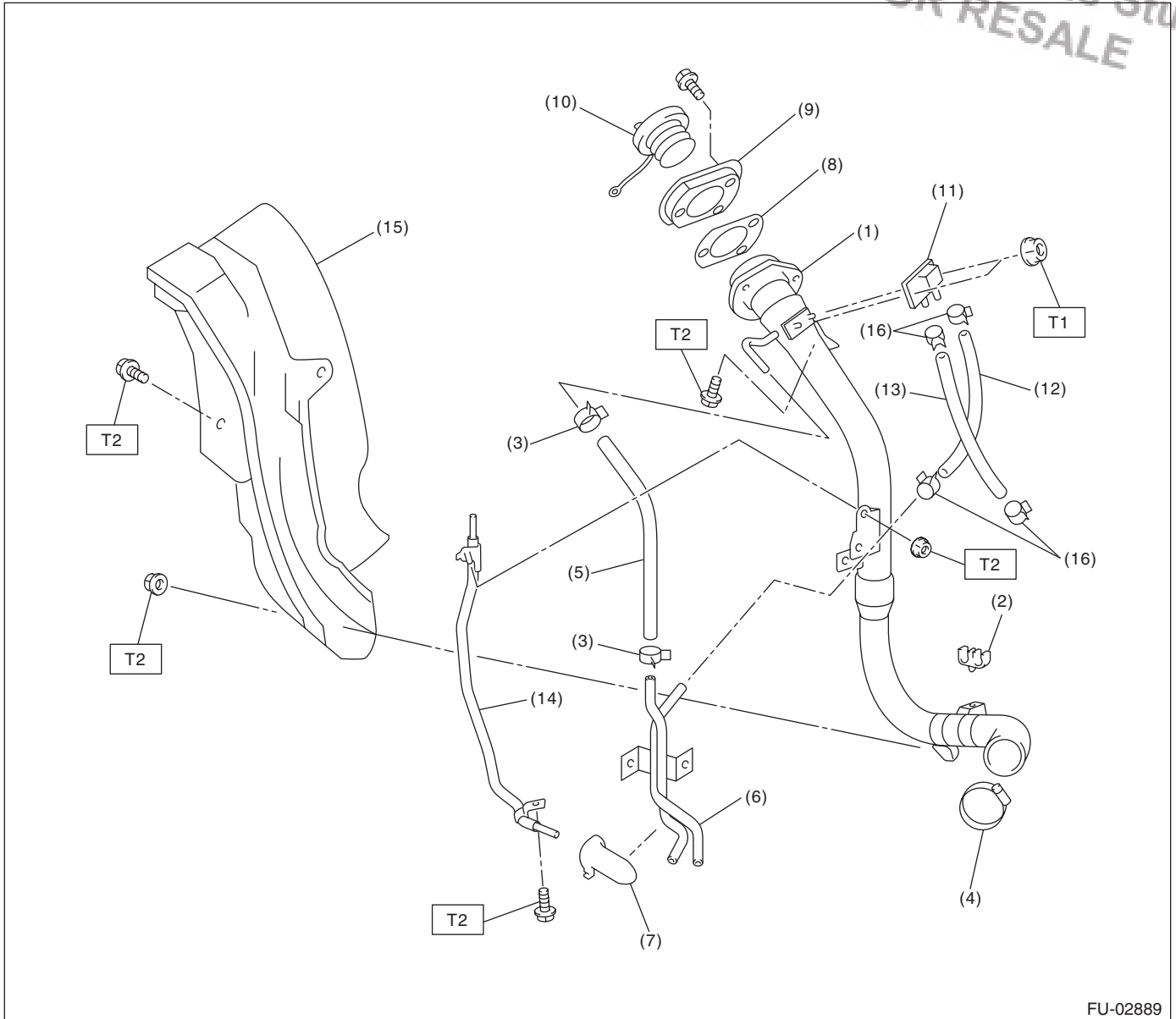
(1) Clamp	(16) Pressure control solenoid valve bracket	(29) Clip
(2) Fuel return hose A	(17) Drain hose C	(30) Clamp
(3) Fuel damper valve (return)	(18) Canister upper bracket	(31) Pressure control solenoid valve hose
(4) Fuel return hose B	(19) Cushion rubber	(32) Clamp
(5) Evaporation hose A	(20) Canister lower bracket	(33) Retainer
(6) Clip	(21) Canister	(34) Clamp
(7) Fuel delivery hose A	(22) Drain valve	(35) Clamp
(8) Fuel delivery hose B	(23) Drain filter	(36) Clamp
(9) Fuel damper valve bracket	(24) Pressure control solenoid valve tube	(37) Canister bracket spacer
(10) Fuel damper valve (Delivery)		
(11) Fuel pipe ASSY	(25) Drain hose A	
(12) Evaporation hose B	(26) Connector drain	
(13) Joint pipe	(27) Drain hose B	
(14) Canister hose A	(28) Clamp	
(15) Pressure control solenoid valve		

Tightening torque:N·m (kgf·m, ft·lb)**T1: 1.25 (0.13, 0.94)****T2: 23 (2.3, 16.6)****T3: 25 (2.5, 18.1)****T4: 33 (3.4, 25)**

General Description

FUEL INJECTION (FUEL SYSTEMS)

6. FUEL FILLER PIPE



FU-02889

- | | | |
|-----------------------------|-------------------------|--------------------------|
| (1) Fuel filler pipe ASSY | (8) Filler pipe gasket | (15) Fuel pipe protector |
| (2) Evaporation hose holder | (9) Filler ring | (16) Clamp |
| (3) Clip | (10) Filler cap | |
| (4) Clamp | (11) Shut valve | |
| (5) Evaporation hose A | (12) Evaporation hose B | |
| (6) Evaporation pipe | (13) Evaporation hose C | |
| (7) Evaporation pipe holder | (14) Joint pipe | |

Tightening torque: N·m (kgf·m, ft·lb)

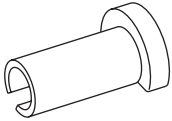
T1: 4.4 (0.45, 3.3)

T2: 7.5 (0.76, 5.5)

C: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground cable from the battery.
- Place "NO OPEN FLAMES" signs near the working area.
- Prepare a container and cloth to prevent scattering of fuels when performing work where fuels can be spilled. If the fuel spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Follow all government and local regulations concerning disposal of refuse when disposing fuel.

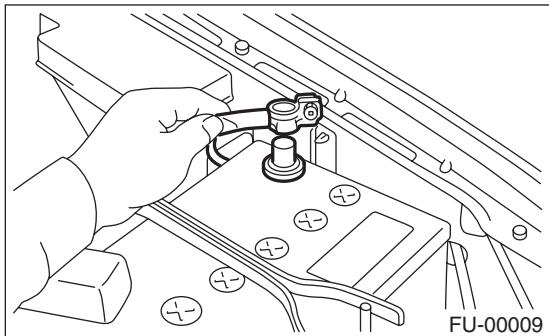
D: PREPARATION TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p data-bbox="321 1535 472 1558">ST42099AE000</p>	42099AE000	CONNECTOR REMOVER	Used for disconnecting quick connector in the engine compartment.

2. Throttle Body

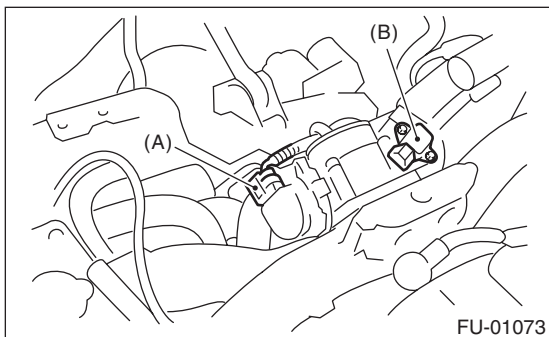
A: REMOVAL

1) Disconnect the ground cable from the battery.

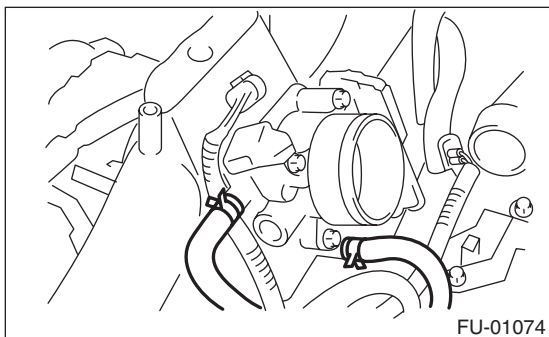


2) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>

3) Disconnect the connector from the throttle position sensor (A), and the manifold pressure sensor (B).



4) Disconnect the engine coolant hose from throttle body.



5) Remove the bolts which secure the throttle body to the intake manifold.

B: INSTALLATION

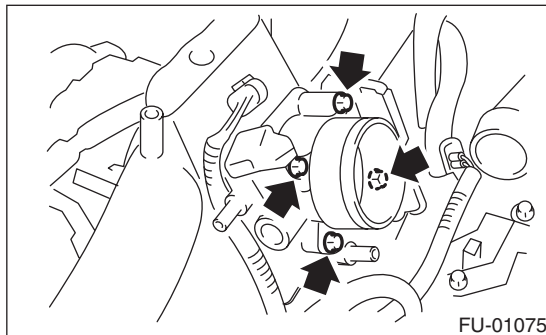
Install in the reverse order of removal.

NOTE:

Use a new gasket.

Tightening torque:

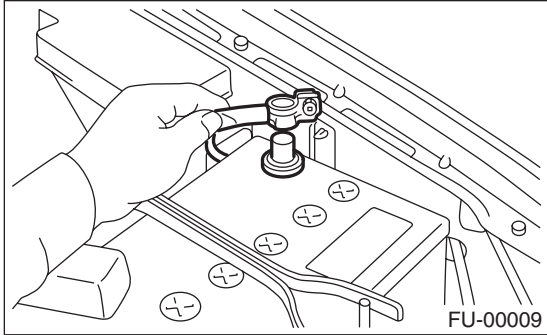
8 N·m (0.8 kgf-m, 5.9 ft-lb)



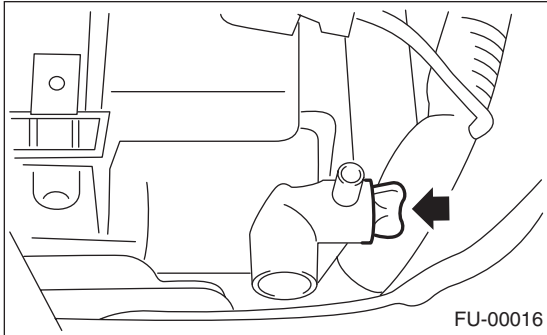
3. Intake Manifold

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 3) Disconnect the ground cable from the battery.

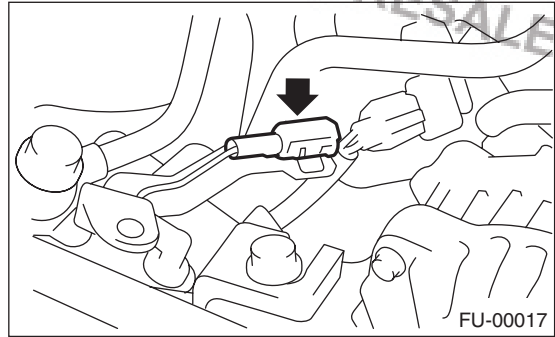


- 4) Open the fuel filler flap lid, and remove the fuel filler cap.
- 5) Lift up the vehicle.
- 6) Remove the under cover.
- 7) Drain approximately 3.0 ℓ (3.2 US qt, 2.6 Imp qt) of coolant.



- 8) Remove the air cleaner upper cover and air intake boot. <Ref. to IN(H4DOTC)-10, REMOVAL, Air Cleaner Case.>
- 9) Remove the air cleaner element.
- 10) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>
- 11) Remove the coolant filler tank. <Ref. to CO(H4DOTC)-35, REMOVAL, Coolant Filler Tank.>
- 12) Remove the power steering pump.
 - (1) Remove the front V-belt. <Ref. to ME(H4DOTC)-44, REMOVAL, V-belt.>

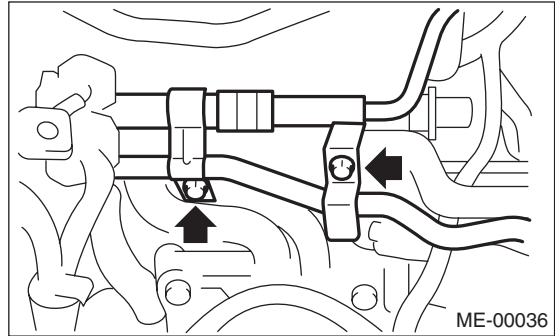
- (2) Disconnect the power steering switch connector.



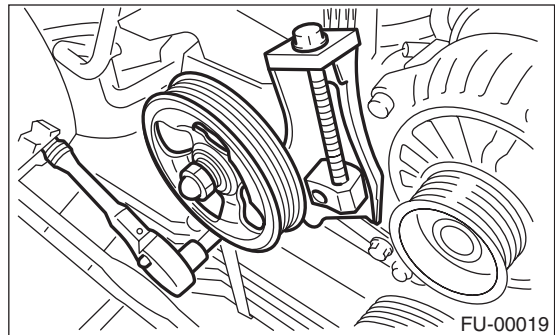
- (3) Remove the bolts which install the power steering pipe bracket to the intake manifold.

NOTE:

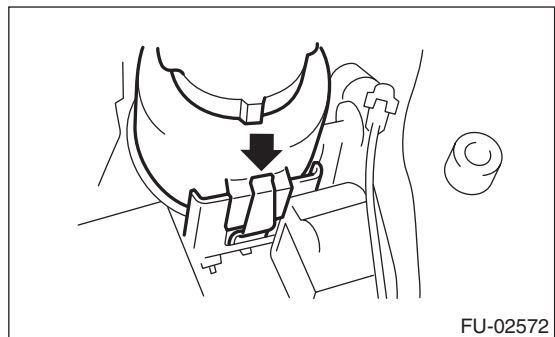
Do not disconnect the power steering hose.



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



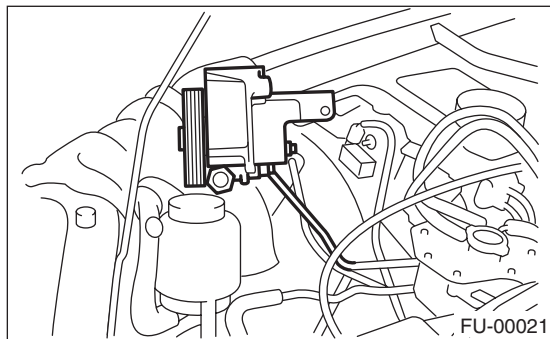
- (5) Remove the reservoir tank from the bracket by pulling it upward.



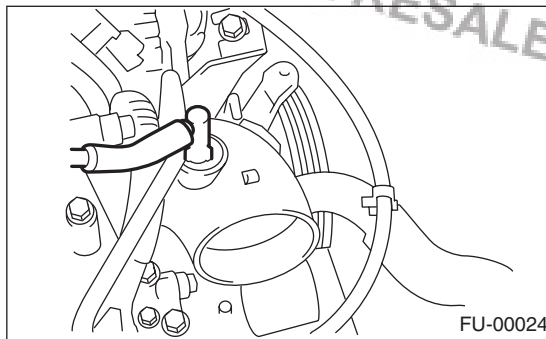
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

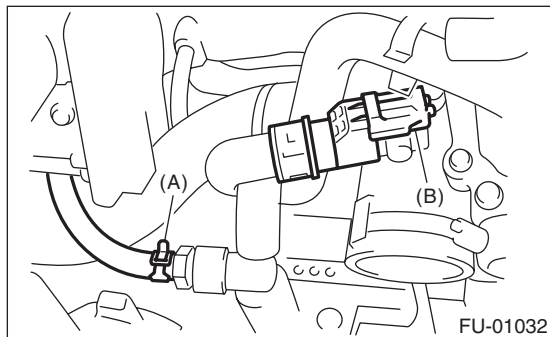
6) Place the power steering pump on the right side wheel apron.



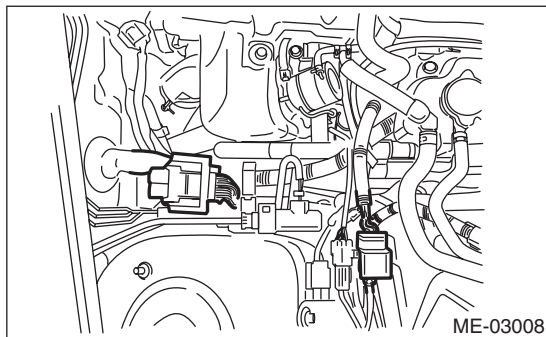
16) Disconnect the pressure hose from the intake duct.



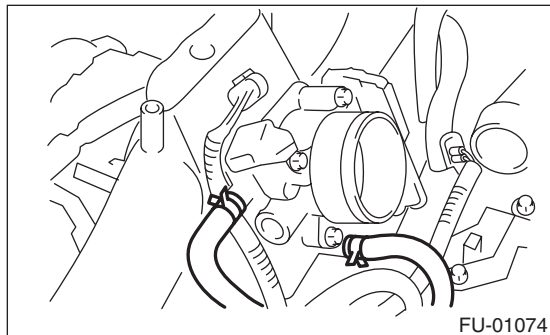
13) Disconnect the emission hose (A) and the connector (B) from the PCV hose assembly.



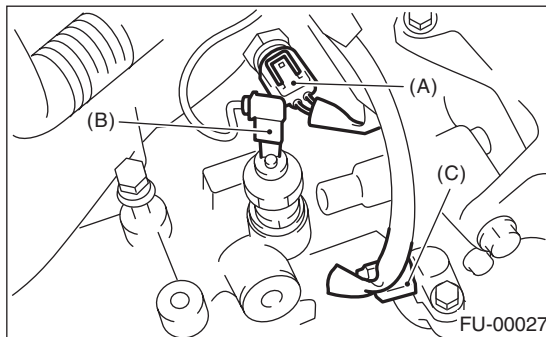
17) Disconnect the engine harness connectors from the bulk head harness connector.



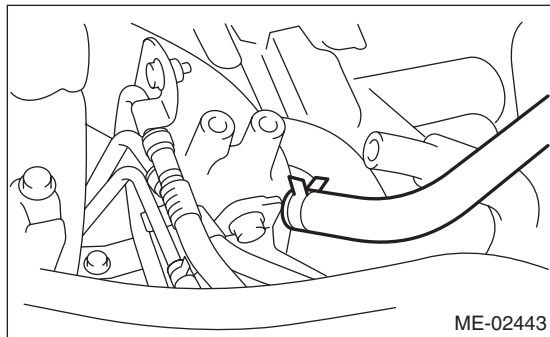
14) Disconnect the engine coolant hose from throttle body.



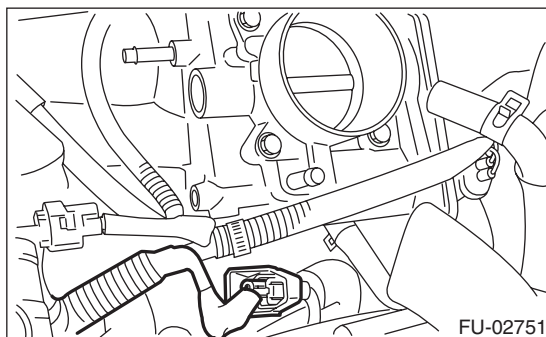
18) Disconnect the connectors from the engine coolant temperature sensor (A), oil pressure switch (B) and crankshaft position sensor (C).



15) Disconnect the brake booster hose.



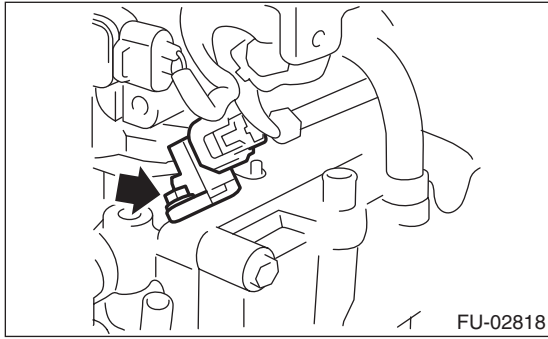
19) Disconnect the knock sensor connector.



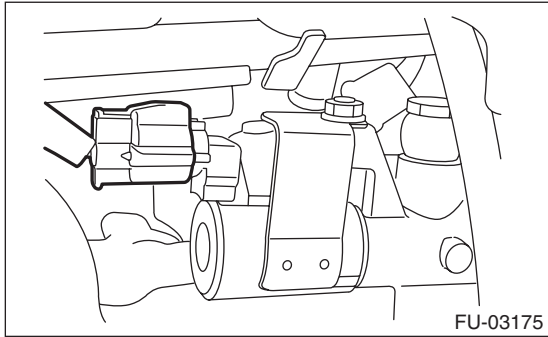
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

20) Disconnect the connector from the camshaft position sensor.



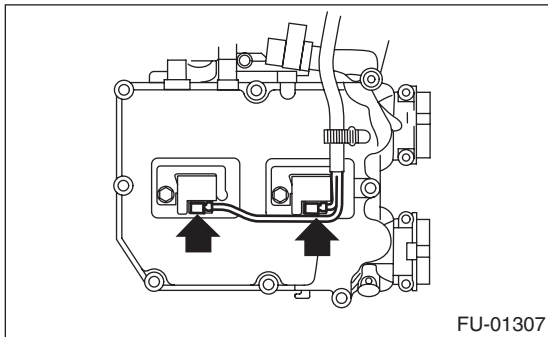
21) Disconnect the connector from the oil flow control solenoid valve.



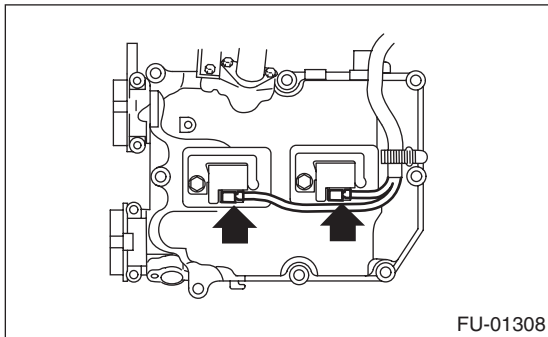
22) Disconnect the connector from the secondary air combination valve.

23) Disconnect the connector from ignition coil.

- RH side

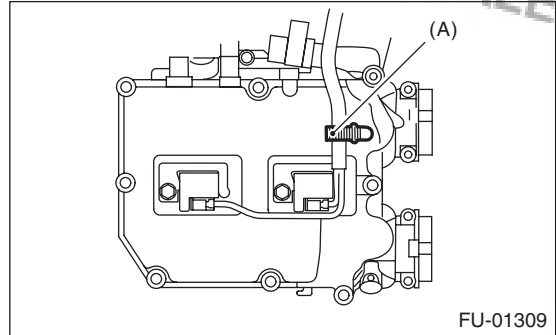


- LH side

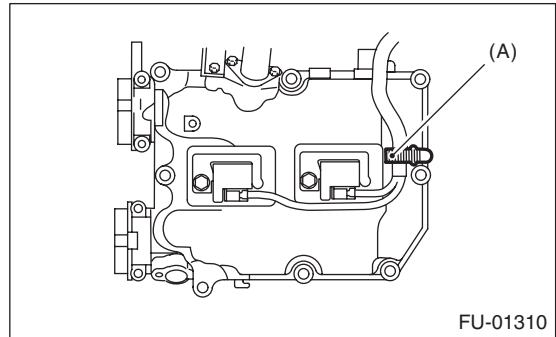


24) Disconnect the engine harness fixed with clip (A) from the rocker cover.

- RH side



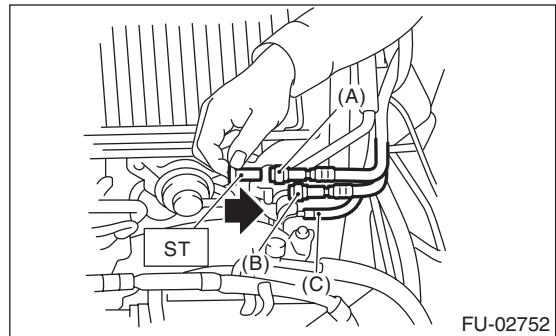
- LH side



25) Disconnect the fuel hoses from the fuel pipes using the ST. <Ref. to FU(H4DOTC)-70, REMOVAL, Fuel Delivery, Return and Evaporation Lines.> ST 42099AE000 CONNECTOR REMOVER

CAUTION:

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

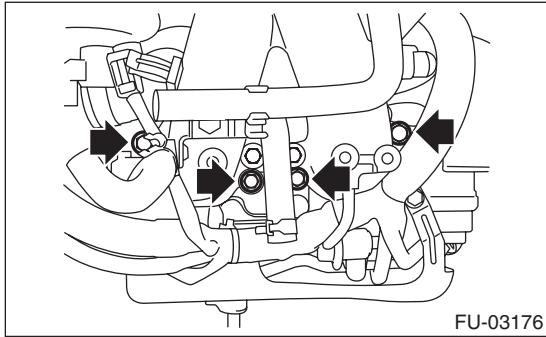


- (A) Fuel delivery hose
- (B) Return hose
- (C) Evaporation hose

Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

26) Remove the bolts which hold the tumble generator assembly onto the cylinder head.



27) Remove the intake manifold.

B: INSTALLATION

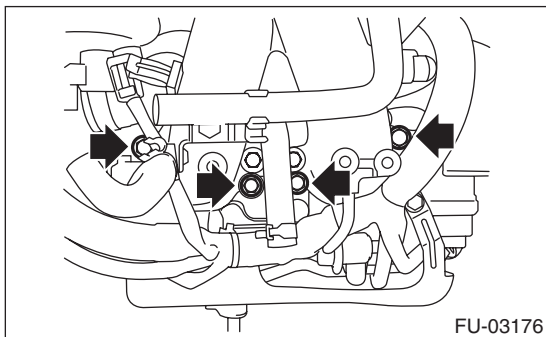
1) Install the intake manifold onto cylinder heads.

NOTE:

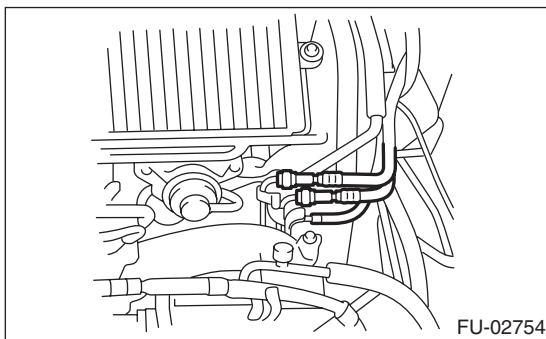
Use a new gasket.

Tightening torque:

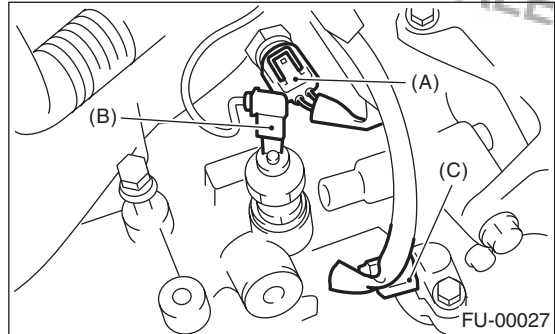
25 N·m (2.5 kgf·m, 18.1 ft·lb)



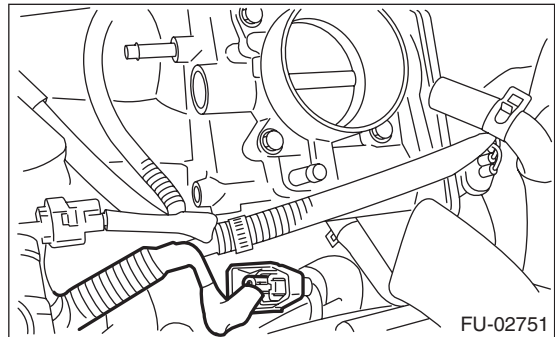
2) Connect the fuel delivery hose, return hose, and evaporation hose.



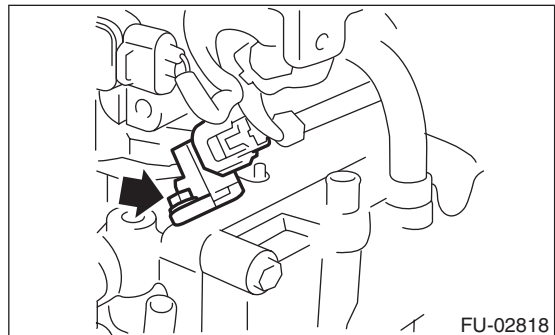
3) Connect the connector to the engine coolant temperature sensor (A), oil pressure switch (B) and crankshaft position sensor (C).



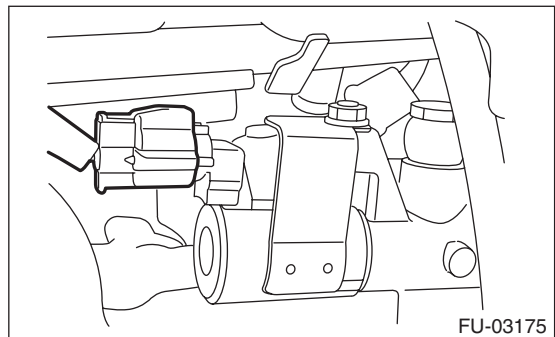
4) Connect the connector to the knock sensor.



5) Connect the connectors to camshaft position sensor.



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



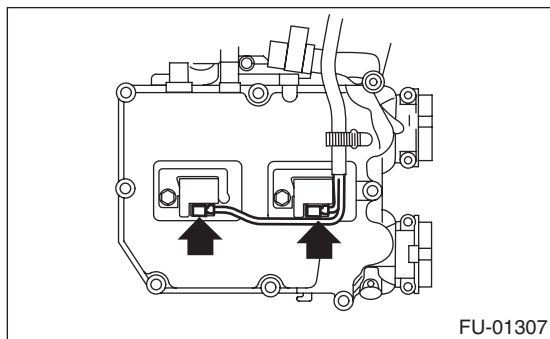
7) Connect the connector to the secondary air combination valve.

Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

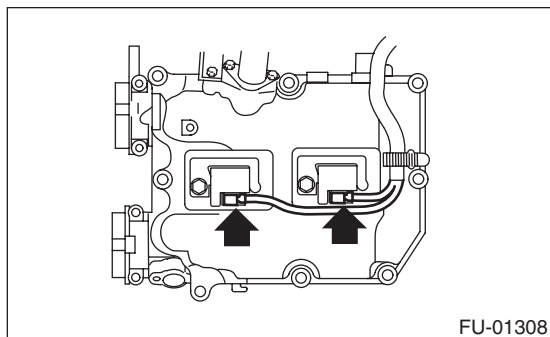
8) Connect the connector to the ignition coil.

- RH side



FU-01307

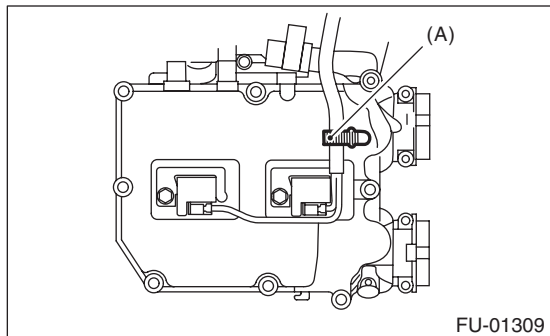
- LH side



FU-01308

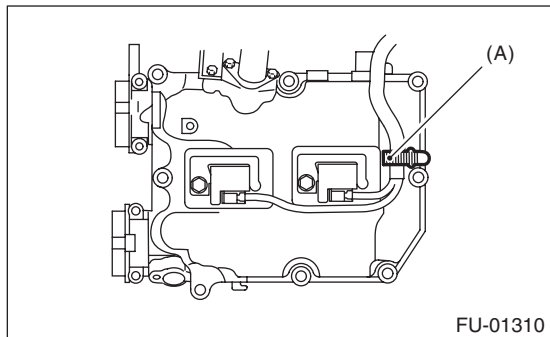
9) Connect the engine harness with clip (A) to the rocker cover.

- RH side



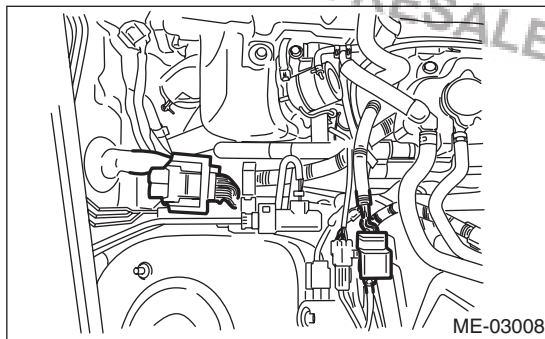
FU-01309

- LH side



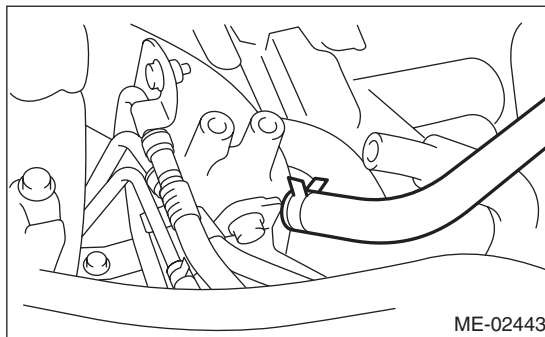
FU-01310

10) Connect the engine harness connectors to the bulkhead harness connectors.



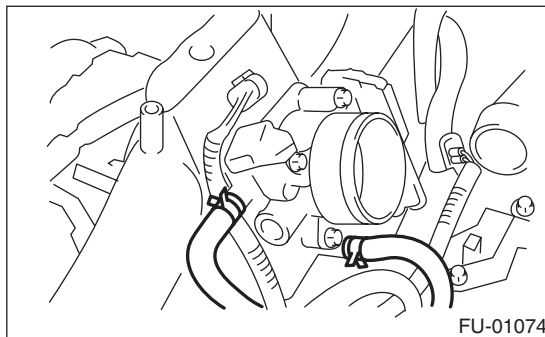
ME-03008

11) Connect the brake booster vacuum hose.



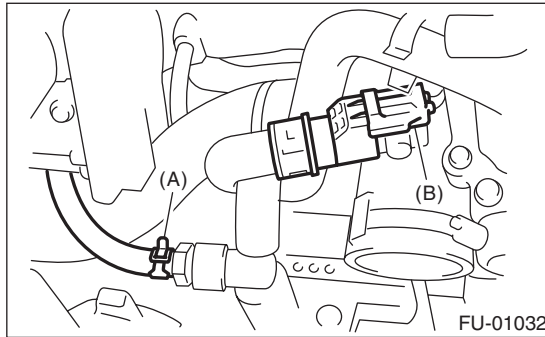
ME-02443

12) Connect the engine coolant hoses to throttle body.



FU-01074

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

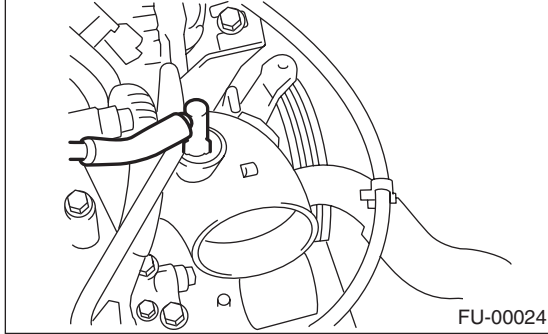


FU-01032

Intake Manifold

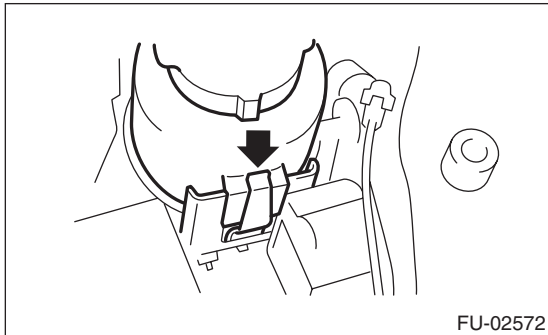
FUEL INJECTION (FUEL SYSTEMS)

14) Connect the pressure hose to the intake duct.

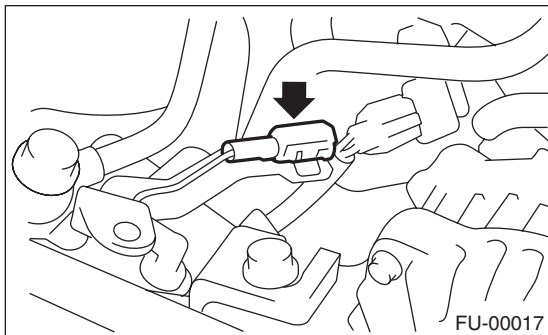


15) Install the power steering pump.

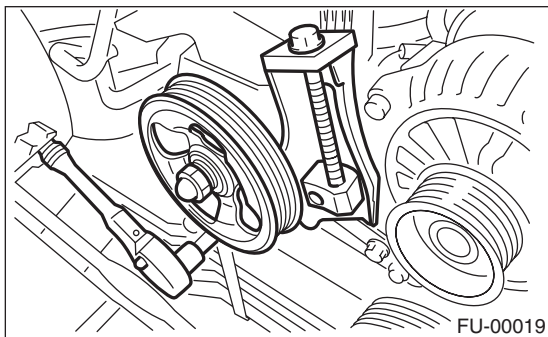
(1) Install the reservoir tank to the bracket.



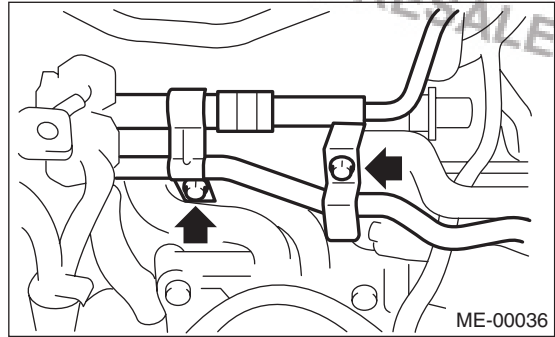
(2) Connect the power steering pump switch to the connector.



(3) Install the power steering pump. <Ref. to PS-60, INSTALLATION, Oil Pump.>



(4) Install the power steering pipe bracket onto the right side intake manifold.



(5) Install the front side V-belt. <Ref. to ME(H4DOTC)-44, INSTALLATION, V-belt.>

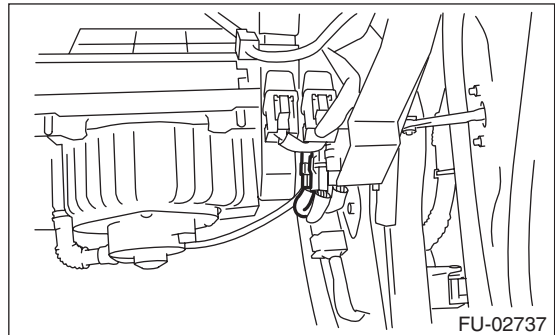
16) Install the coolant filler tank. <Ref. to CO(H4DOTC)-35, INSTALLATION, Coolant Filler Tank.>

17) Install the intercooler. <Ref. to IN(H4DOTC)-14, INSTALLATION, Intercooler.>

18) Install the air cleaner element.

19) Install the air cleaner upper cover and air intake duct as a unit. <Ref. to IN(H4DOTC)-10, INSTALLATION, Air Cleaner Case.>

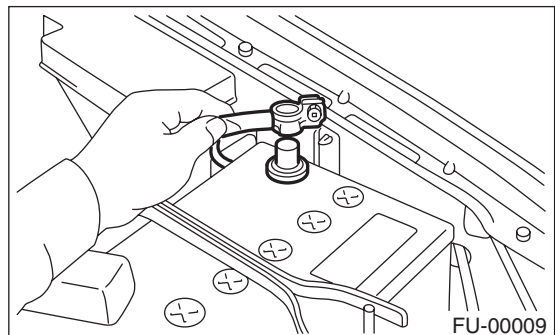
20) Connect the connector to fuel pump relay.



21) Install the passenger's side front side sill cover.

22) Install the glove box. <Ref. to EI-43, INSTALLATION, Glove Box.>

23) Connect the ground cable to the battery.



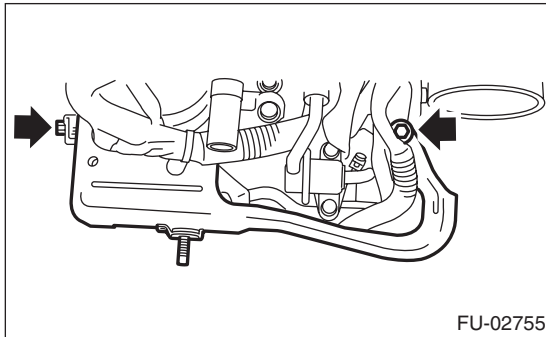
24) Lift up the vehicle.

25) Install the under cover.

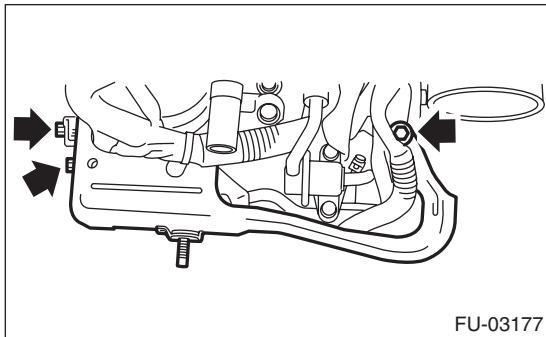
26) Fill engine coolant. <Ref. to CO(H4DOTC)-19, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

C: DISASSEMBLY

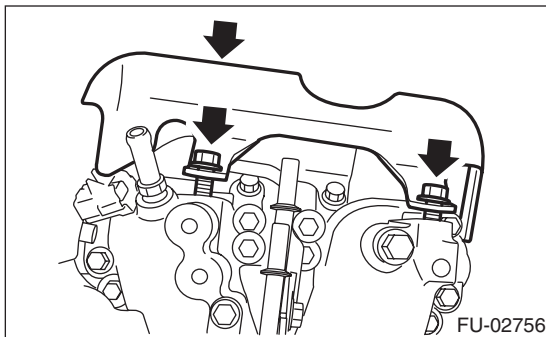
- 1) Remove the fuel pipe protector RH.
 - Except for STI model



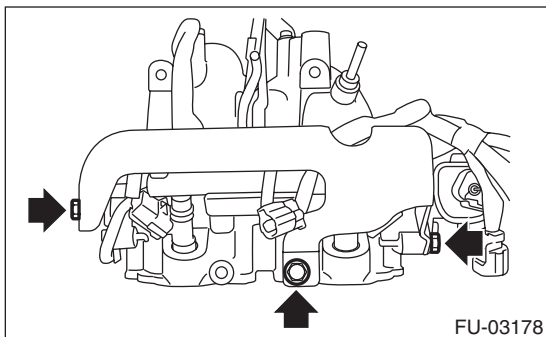
- STI model



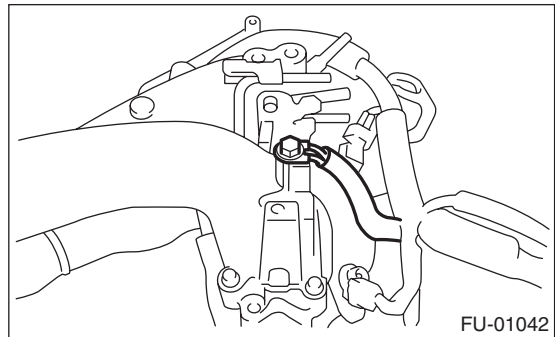
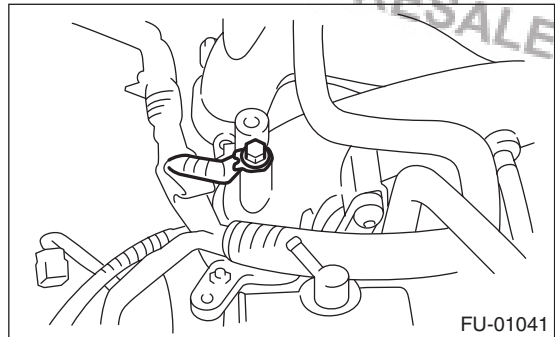
- 2) Remove the fuel pipe protector LH.
 - Except for STI model



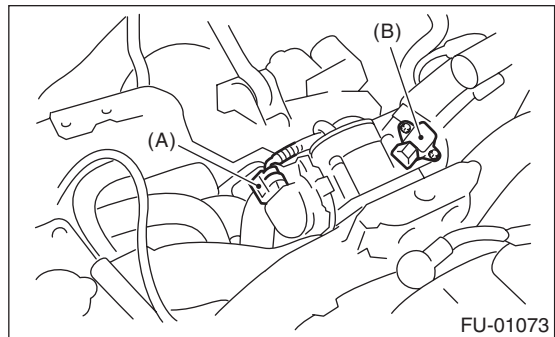
- STI model



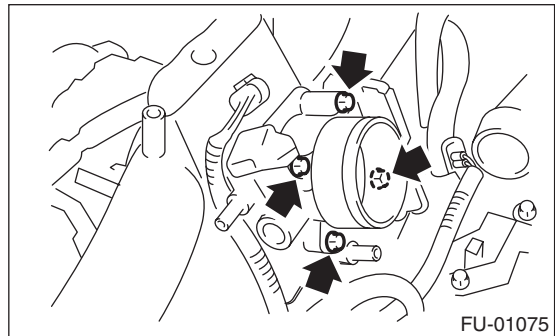
- 3) Remove the engine ground terminal from the intake manifold.



- 4) Disconnect the connector from the throttle position sensor (A), and the manifold pressure sensor (B).



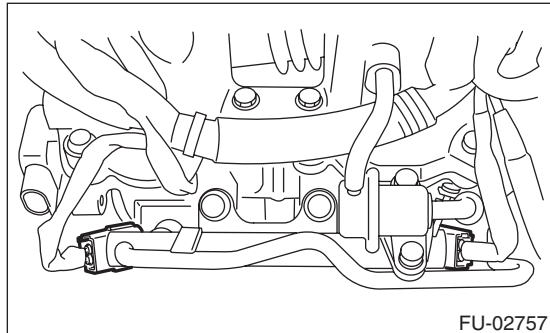
- 5) Remove the throttle body from intake manifold.



Intake Manifold

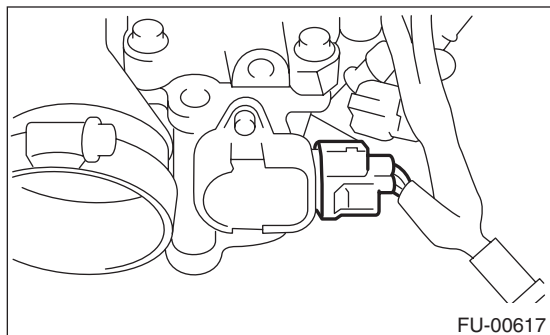
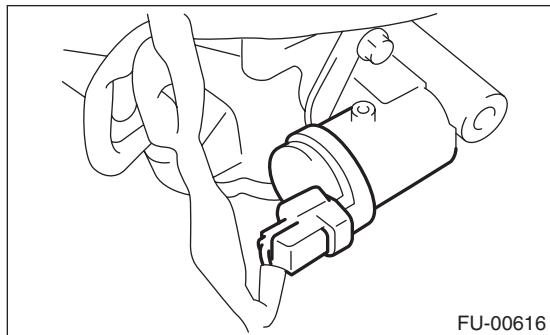
FUEL INJECTION (FUEL SYSTEMS)

6) Disconnect the connector from fuel injector.

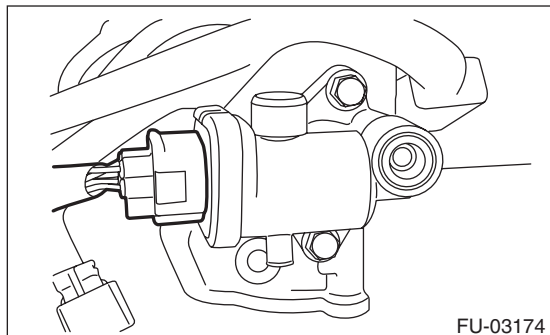


7) Disconnect the connector from the tumble generator valve assembly.

- Except for STI model

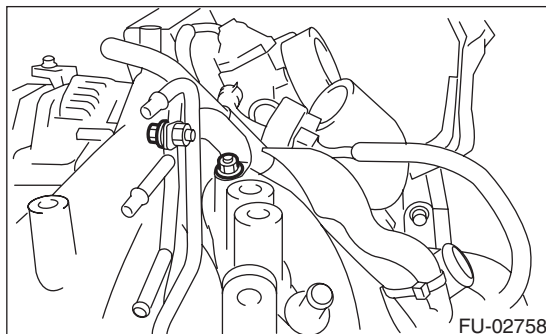


- STI model



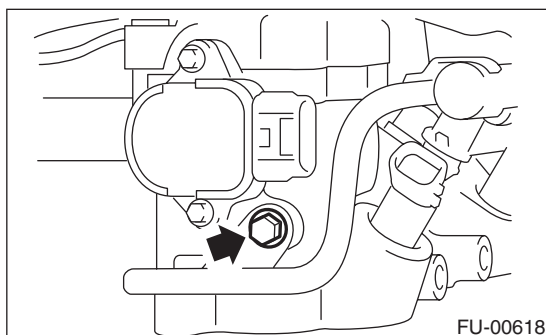
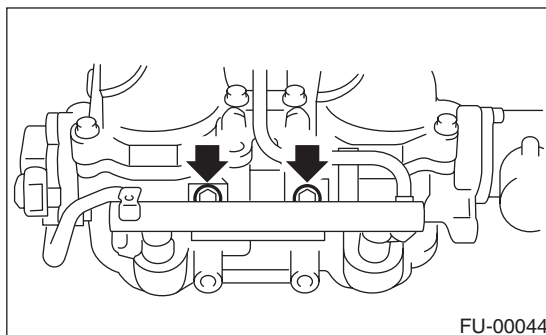
8) Remove the purge control solenoid valve. <Ref. to EC(H4DOTC)-8, REMOVAL, Purge Control Solenoid Valve.>

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



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

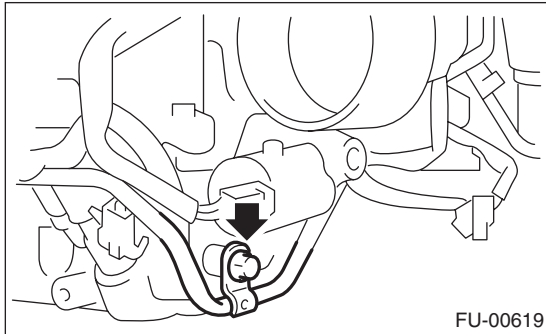
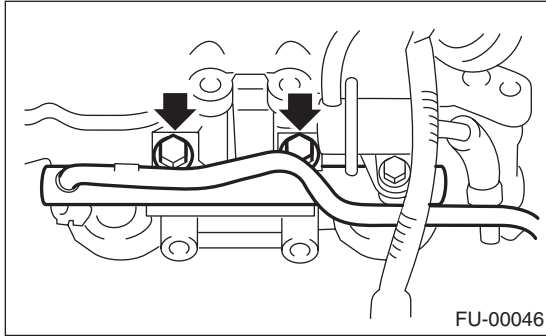
- LH side



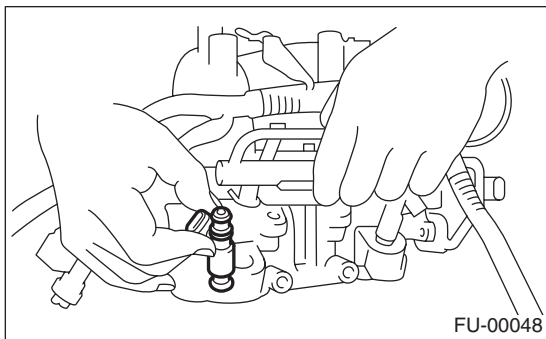
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

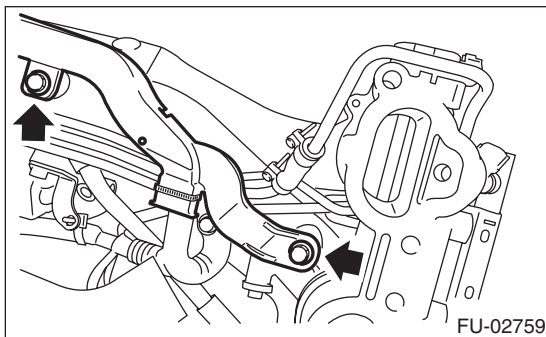
- RH side



- 11) Remove the fuel injector.

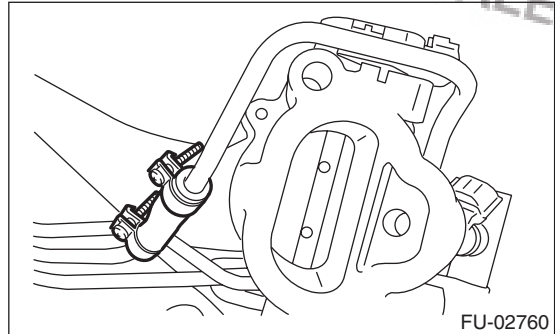


- 12) Remove the harness bracket which holds the engine harness onto intake manifold.

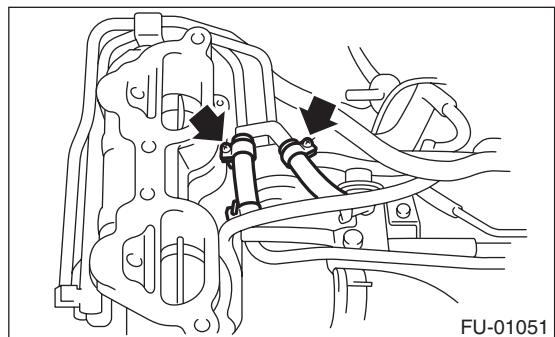


- 13) Remove the engine harness from intake manifold.

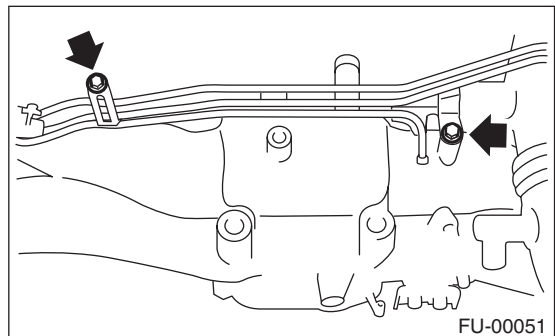
- 14) Loosen the clamp which holds the front LH side fuel hose to injector pipe to remove the pipe from clamp.



- 15) Loosen the clamp which holds the RH side fuel hose to injector pipe to remove the pipe from clamp.

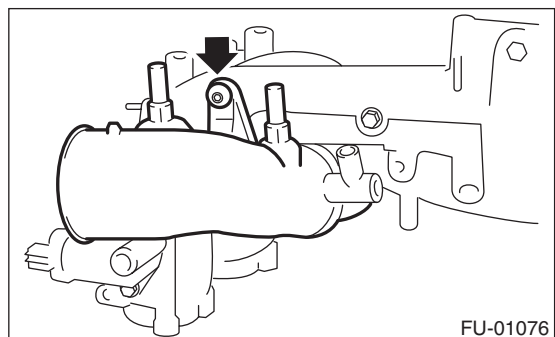


- 16) Remove the bolts which install fuel pipe assembly on intake manifold.



- 17) Remove the fuel pipe assembly and pressure regulator from intake manifold.

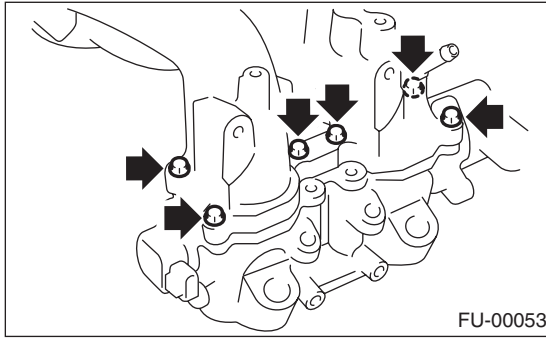
- 18) Remove the intake duct from intake manifold.



Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

19) Remove the tumble generator assembly from intake manifold.



D: ASSEMBLY

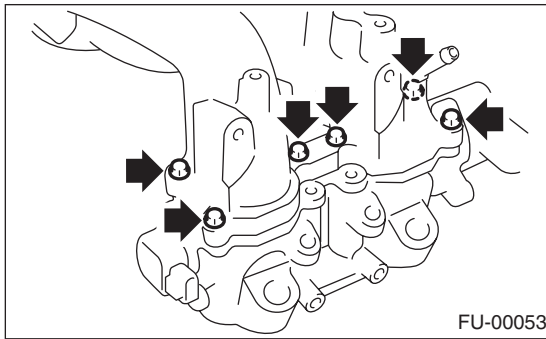
NOTE:

Use a new gasket.

1) Install the tumble generator valve assembly onto intake manifold.

Tightening torque:

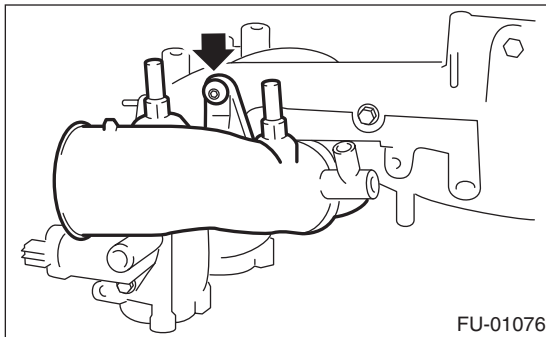
8.25 N·m (0.84 kgf-m, 6.1 ft-lb)



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

Tightening torque:

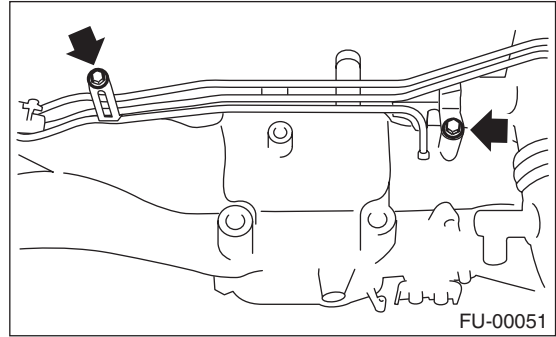
19 N·m (1.94 kgf-m, 14.0 ft-lb)



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

Tightening torque:

6.4 N·m (0.65 kgf-m, 4.7 ft-lb)

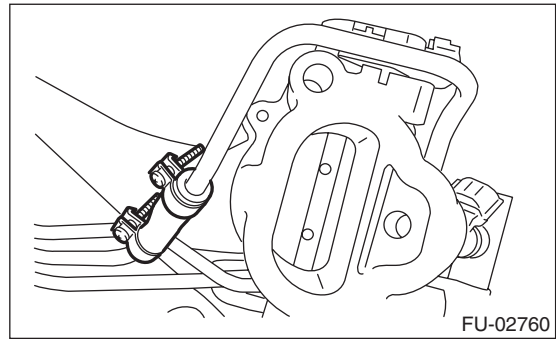


4) Install the fuel injector pipe LH.

5) Connect the fuel hose LH to the injector pipe, and tighten the clamp screw.

Tightening torque:

1.25 N·m (0.13 kgf-m, 0.94 ft-lb)

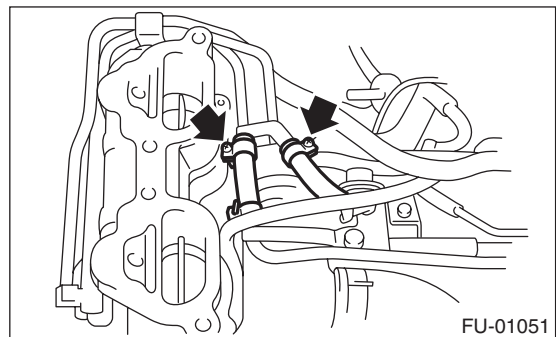


6) Install the fuel injector pipe RH.

7) Connect the fuel hose RH to the fuel injector pipe, and tighten the clamp screw.

Tightening torque:

1.25 N·m (0.13 kgf-m, 0.94 ft-lb)



8) Install the engine harness to the intake manifold.

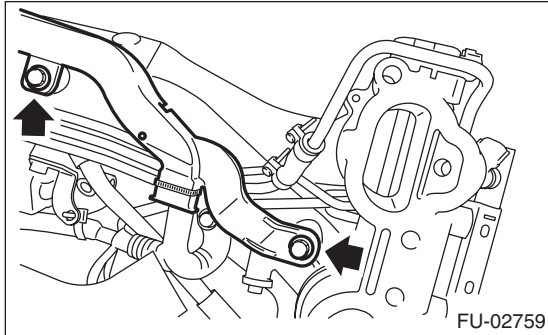
Intake Manifold

FUEL INJECTION (FUEL SYSTEMS)

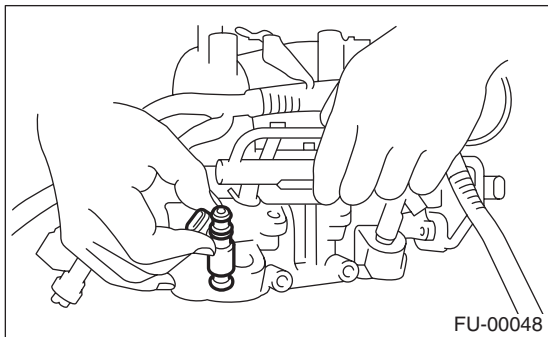
9) Install the harness bracket which holds the engine harness to intake manifold.

Tightening torque:

19 N·m (1.94 kgf·m, 14.0 ft·lb)



10) Install the fuel injector.

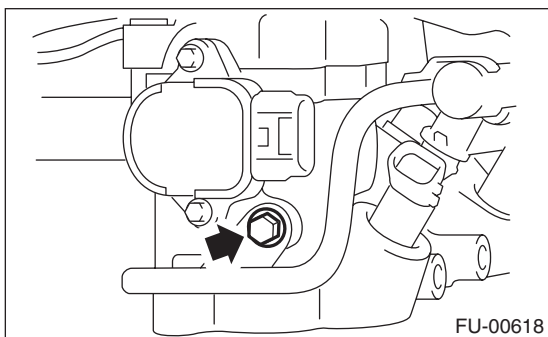
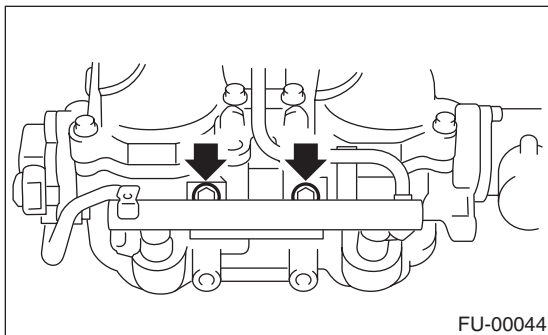


11) Tighten the bolts which secure fuel injector pipe onto intake manifold.

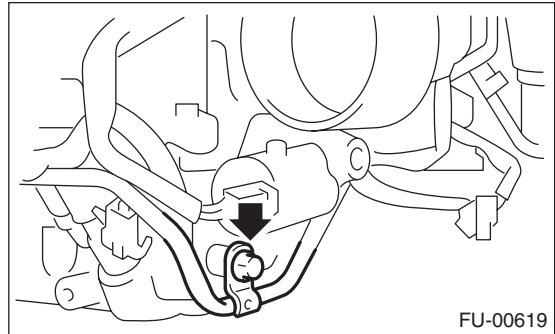
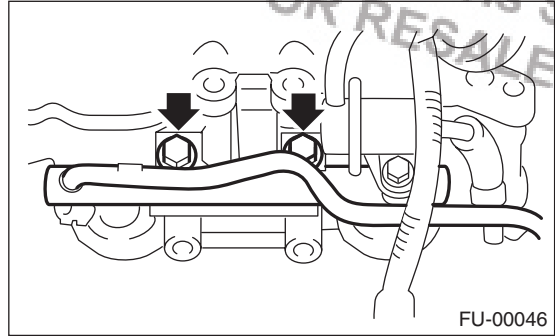
Tightening torque:

19 N·m (1.94 kgf·m, 14.0 ft·lb)

- LH side



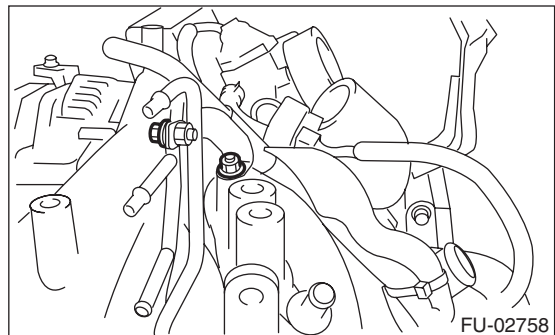
- RH side



12) Tighten the two bolts which install the fuel pipe on the LH side of intake manifold.

Tightening torque:

6.4 N·m (0.65 kgf·m, 4.7 ft·lb)



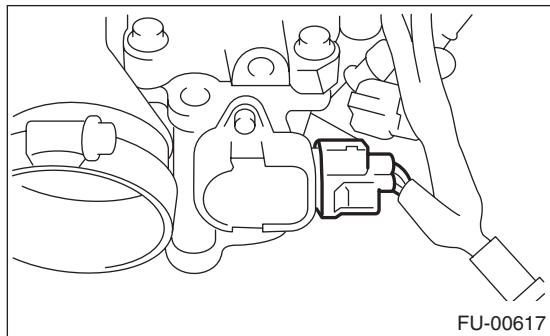
13) Install the purge control solenoid valve. <Ref. to EC(H4DOTC)-8, INSTALLATION, Purge Control Solenoid Valve.>

Intake Manifold

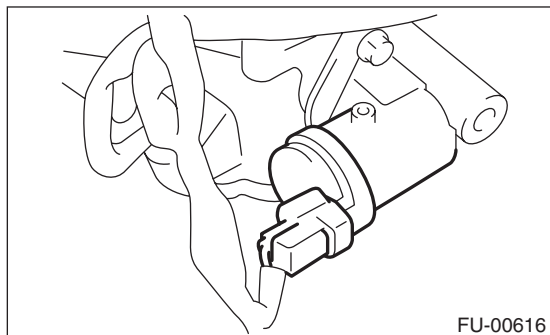
FUEL INJECTION (FUEL SYSTEMS)

14) Connect the connector to the tumble generator valve assembly.

- Except for STI model

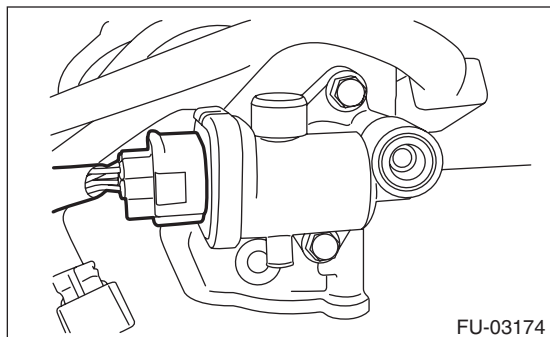


FU-00617



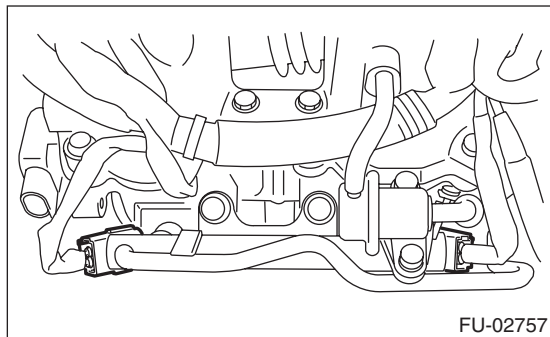
FU-00616

- STI model



FU-03174

15) Connect the connector to the fuel injector.



FU-02757

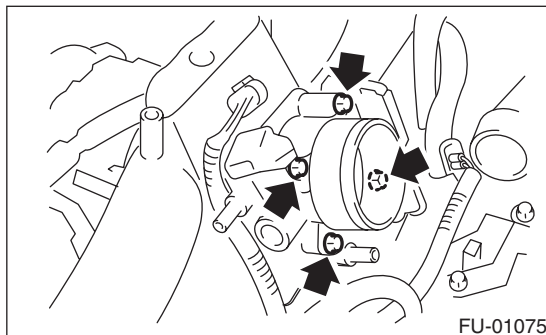
16) Install the throttle body to intake manifold.

NOTE:

Use a new gasket.

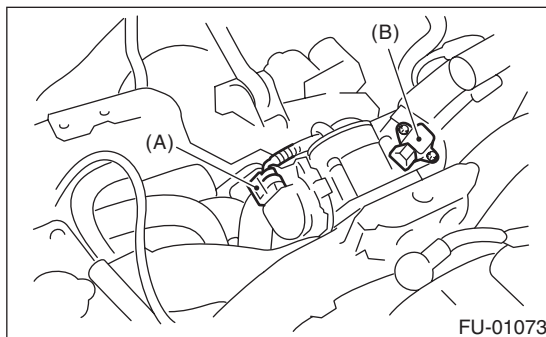
Tightening torque:

8 N·m (0.8 kgf·m, 5.8 ft·lb)



FU-01075

17) Connect the connector to the throttle position sensor (A), and the manifold pressure sensor (B).

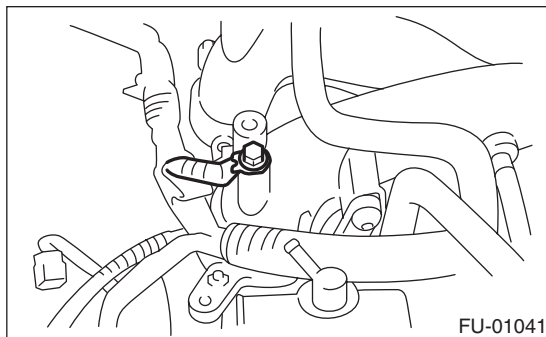


FU-01073

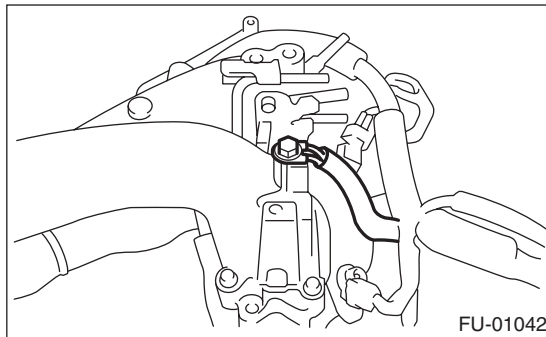
18) Install the engine ground terminal to the intake manifold.

Tightening torque:

19 N·m (1.94 kgf·m, 14.0 ft·lb)



FU-01041



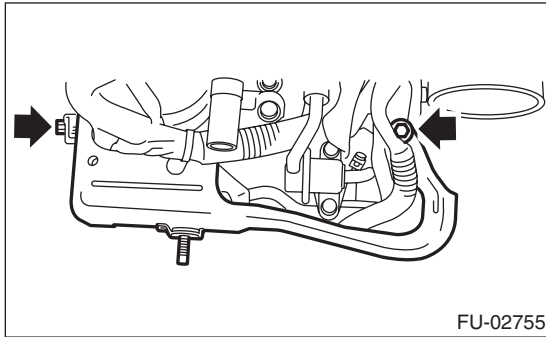
FU-01042

19) Install the fuel pipe protector RH.

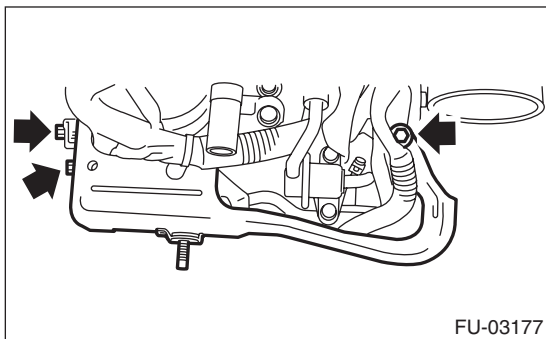
Tightening torque:

19 N·m (1.94 kgf-m, 14.0 ft-lb)

- Except for STI model



- STI model

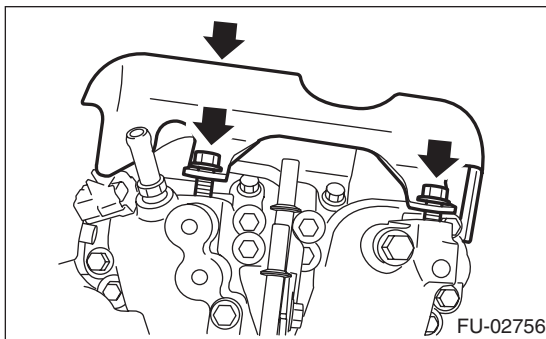


20) Install the fuel pipe protector LH.

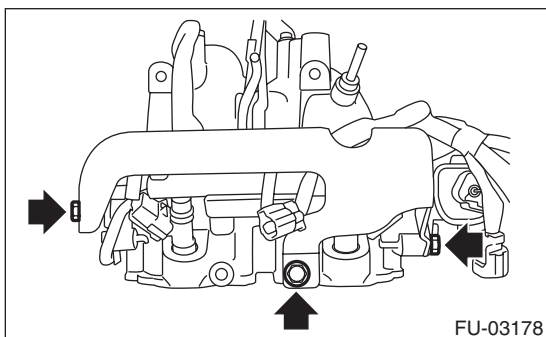
Tightening torque:

19 N·m (1.94 kgf-m, 14.0 ft-lb)

- Except for STI model



- STI model



E: INSPECTION

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

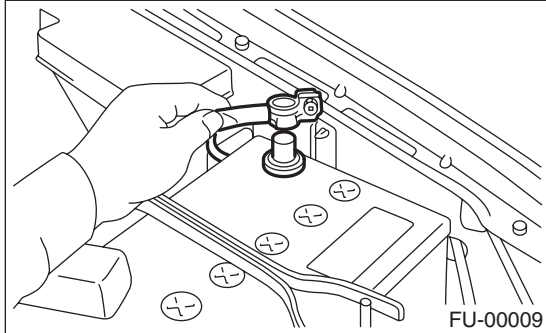
Engine Coolant Temperature Sensor

FUEL INJECTION (FUEL SYSTEMS)

4. Engine Coolant Temperature Sensor

A: REMOVAL

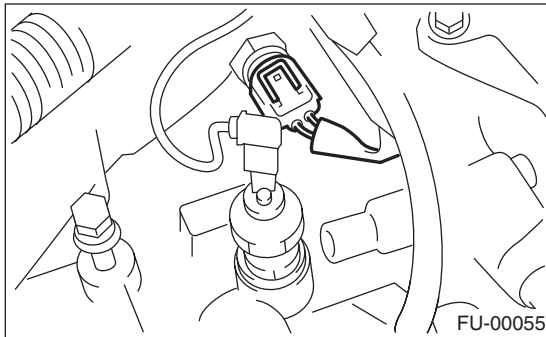
1) Disconnect the ground cable from the battery.



2) Remove the generator. <Ref. to SC(H4SO)-14, REMOVAL, Generator.>

3) Drain engine coolant. <Ref. to CO(H4DOTC)-19, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

4) Disconnect the connectors from the engine coolant temperature sensor.



5) Remove the engine coolant temperature sensor.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Use a new gasket.

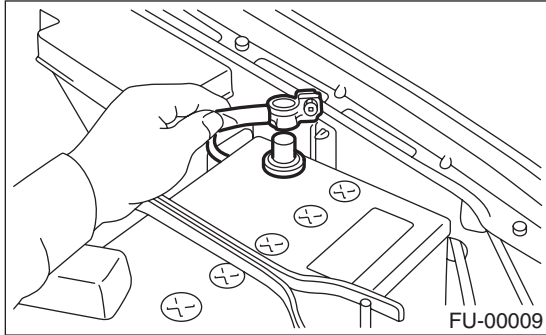
Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)

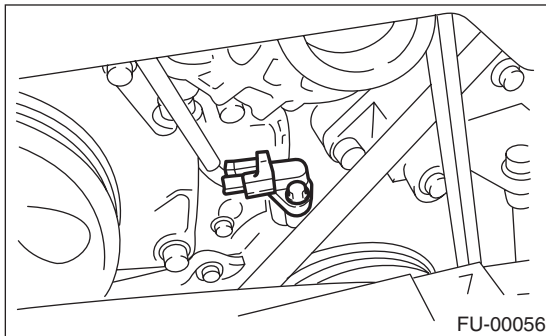
5. Crankshaft Position Sensor

A: REMOVAL

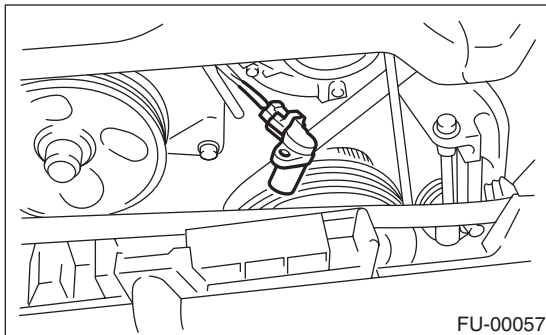
1) Disconnect the ground cable from the battery.



2) Remove the bolt which installs crankshaft position sensor to cylinder block.



3) Remove the crankshaft position sensor, and then disconnect the connector from it.

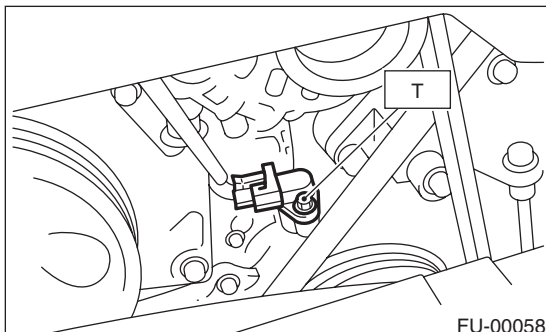


B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

T: 6.4 N·m (0.65 kgf-m, 4.7 ft-lb)



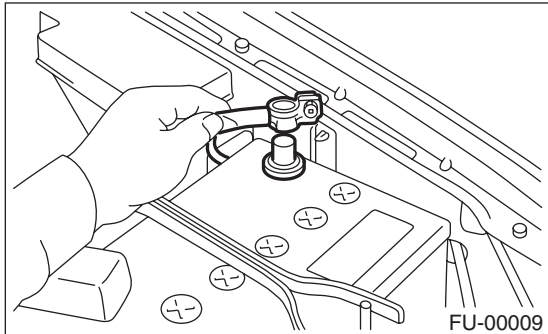
Camshaft Position Sensor

FUEL INJECTION (FUEL SYSTEMS)

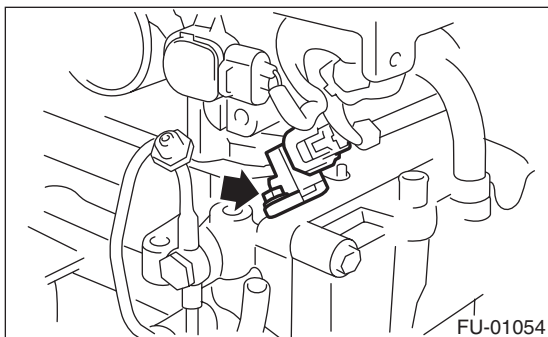
6. Camshaft Position Sensor

A: REMOVAL

- 1) Disconnect the ground cable from the battery.



- 2) Disconnect the connector from camshaft position sensor RH.
- 3) Remove the camshaft position sensor RH from the cylinder head rear.



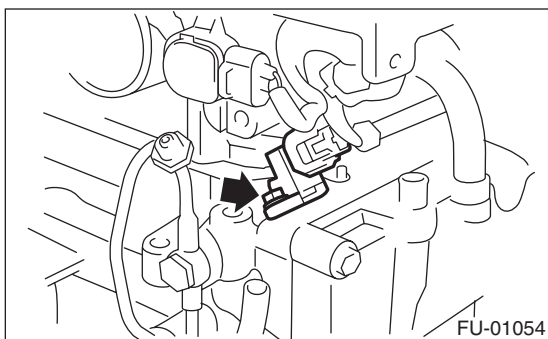
- 4) Remove the cam shaft position sensor LH in the same way as RH.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

6.4 N·m (0.65 kgf·m, 4.7 ft·lb)



7. Oil Flow Control Solenoid Valve

A: REMOVAL

Oil flow control solenoid valve is a unit with camshaft cap.

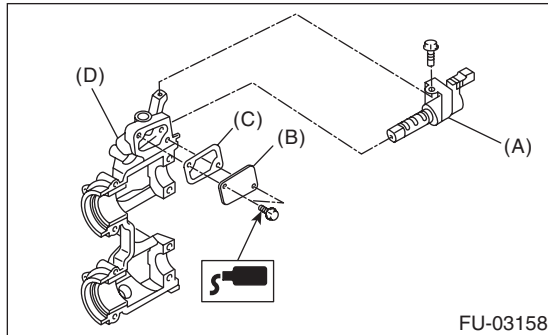
Refer to “Camshaft” for removal procedure. <Ref. to ME(H4DOTC)-58, REMOVAL, Camshaft.>

B: INSTALLATION

Refer to “Camshaft” for installation procedure. <Ref. to ME(H4DOTC)-59, INSTALLATION, Camshaft.>

C: DISASSEMBLY

- 1) Remove the 2 mounting bolts and remove the oil return cover and gasket.
- 2) Remove the mounting bolt and remove the oil flow control solenoid valve.



- (A) Oil flow control solenoid valve
- (B) Oil return cover
- (C) Gasket
- (D) Camshaft cap

D: ASSEMBLY

- 1) Install the oil flow control solenoid valve.

Tightening torque:

8 N·m (0.8 kgf·m, 5.9 ft·lb)

- 2) Apply liquid gasket to the two bolts which secure the oil return cover.

Liquid gasket:

THREE BOND 1324 (Part No. 004403042) or equivalent

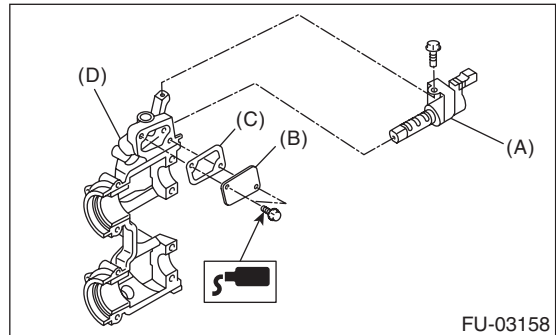
- 3) Attach the oil return cover and gasket.

Tightening torque:

8 N·m (0.8 kgf·m, 5.9 ft·lb)

NOTE:

Use a new gasket.

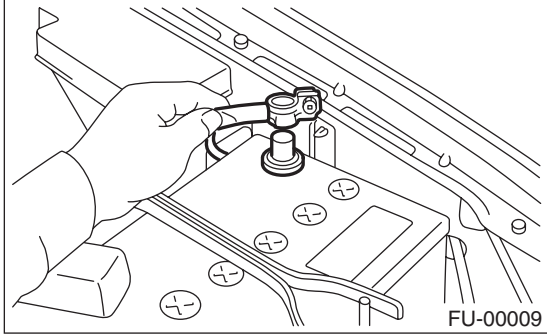


- (A) Oil flow control solenoid valve
- (B) Oil return cover
- (C) Gasket
- (D) Camshaft cap

8. Knock Sensor

A: REMOVAL

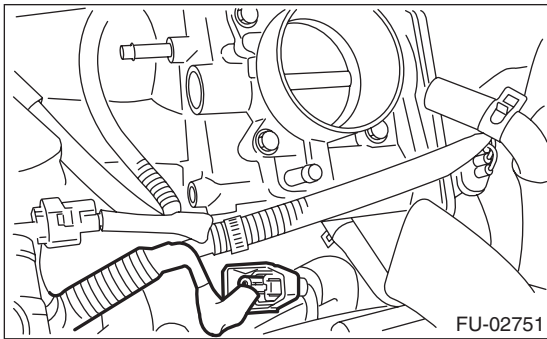
- 1) Disconnect the ground cable from the battery.



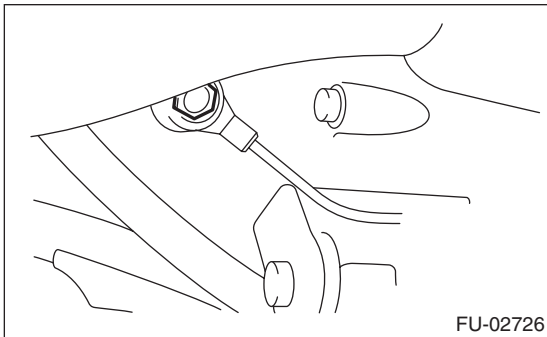
- 2) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>

- 3) Remove the secondary air combination valve. <Ref. to EC(H4DOTC)-10, REMOVAL, Secondary Air Combination Valve.>

- 4) Disconnect the knock sensor connector.



- 5) Remove the knock sensor from the cylinder block.



B: INSTALLATION

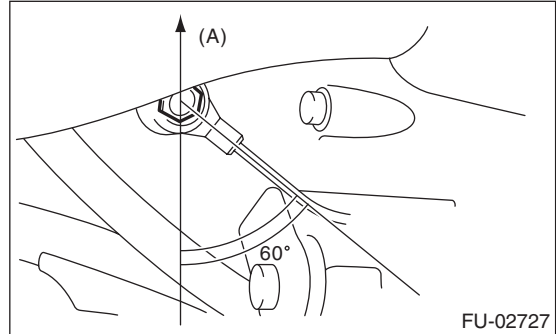
- 1) Install the knock sensor to the cylinder block.

Tightening torque:

24 N·m (2.4 kgf-m, 17.4 ft-lb)

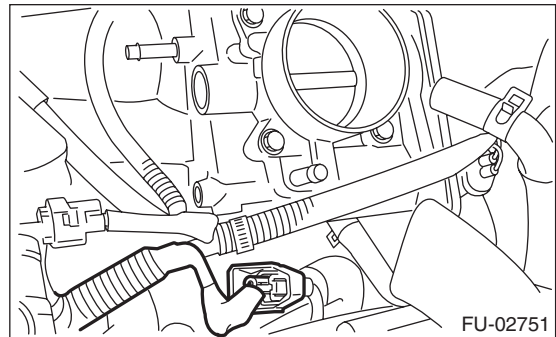
NOTE:

The portion of the knock sensor cord that is pulled out must be positioned at a 60° angle relative to the engine rear.



(A) Front side

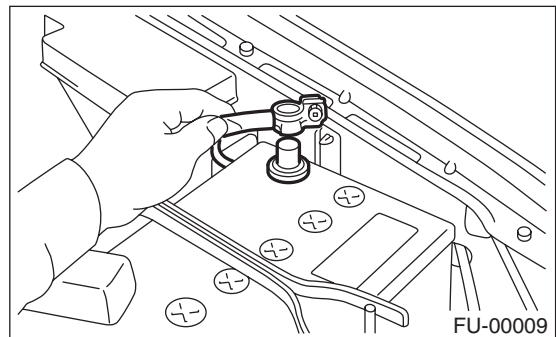
- 2) Connect the knock sensor connector.



- 3) Install the secondary air combination valve. <Ref. to EC(H4DOTC)-11, INSTALLATION, Secondary Air Combination Valve.>

- 4) Install the intercooler. <Ref. to IN(H4DOTC)-14, INSTALLATION, Intercooler.>

- 5) Connect the ground cable to the battery.



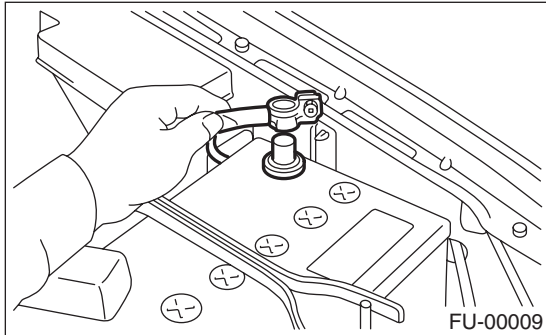
Mass Air Flow and Intake Air Temperature Sensor

FUEL INJECTION (FUEL SYSTEMS)

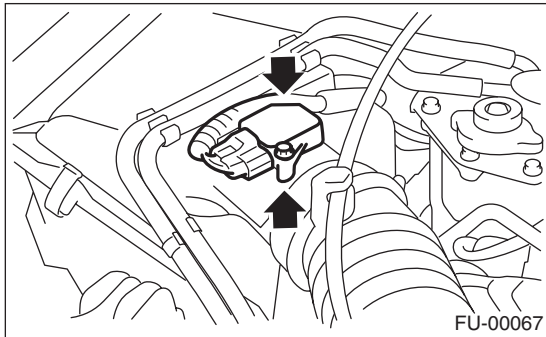
9. Mass Air Flow and Intake Air Temperature Sensor

A: REMOVAL

- 1) Disconnect the ground cable from the battery.



- 2) Disconnect the connector from the mass air flow and intake air temperature sensor.
- 3) Remove the mass air flow and intake air temperature sensor.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

1.0 N·m (0.1 kgf·m, 0.7 ft·lb)

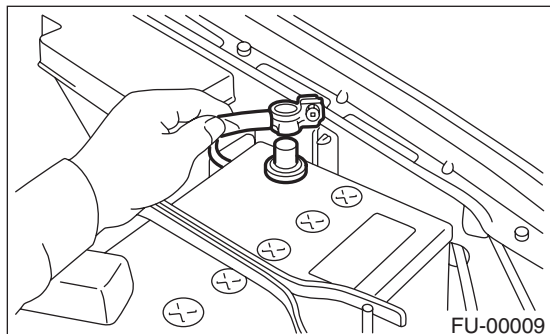
Manifold Absolute Pressure Sensor

FUEL INJECTION (FUEL SYSTEMS)

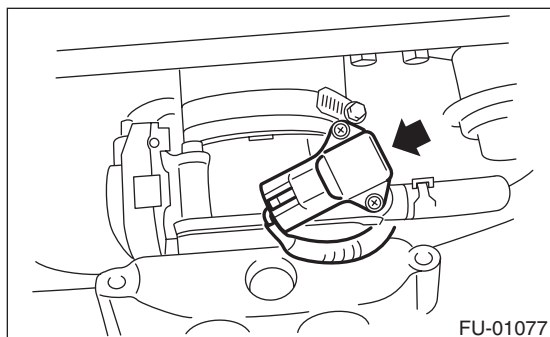
10. Manifold Absolute Pressure Sensor

A: REMOVAL

1) Disconnect the ground cable from the battery.



2) Disconnect the connector from manifold absolute pressure sensor.



3) Remove the manifold absolute pressure sensor from throttle body.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Use new O-rings.

Tightening torque:

1.6 N·m (0.16 kgf-m, 1.2 ft-lb)

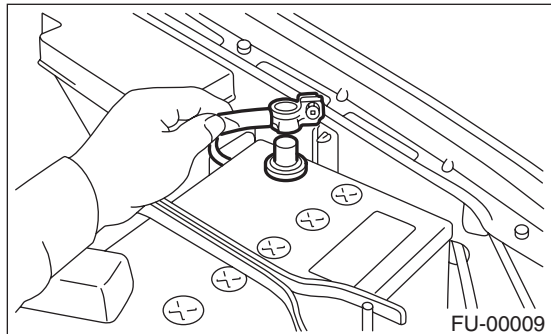
11. Fuel Injector

A: REMOVAL

1. RH SIDE

1) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>

2) Disconnect the ground cable from the battery.



3) Open the fuel filler flap lid, and remove the fuel filler cap.

4) Remove the air cleaner upper cover and air intake boot. <Ref. to IN(H4DOTC)-10, REMOVAL, Air Cleaner Case.>

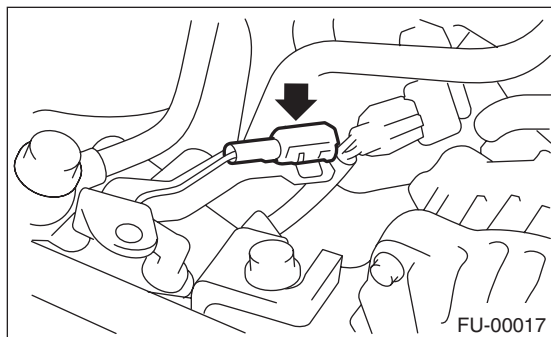
5) Remove the air cleaner element.

6) Remove the coolant filler tank. <Ref. to CO(H4DOTC)-35, REMOVAL, Coolant Filler Tank.>

7) Remove the power steering pump.

(1) Remove the front V-belt. <Ref. to ME(H4DOTC)-44, REMOVAL, V-belt.>

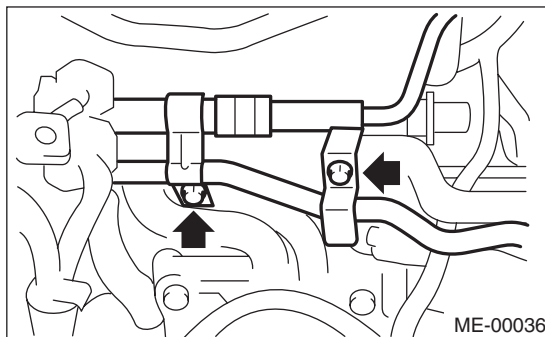
(2) Disconnect the power steering switch connector.



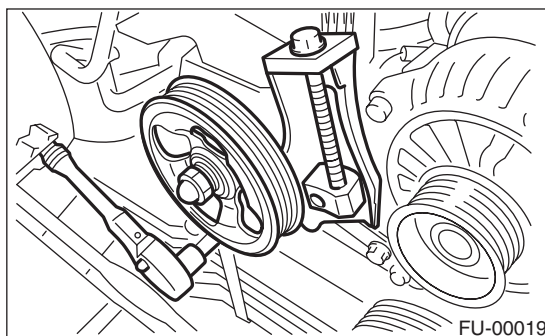
(3) Remove the bolts which install the power steering pipe bracket to the intake manifold.

NOTE:

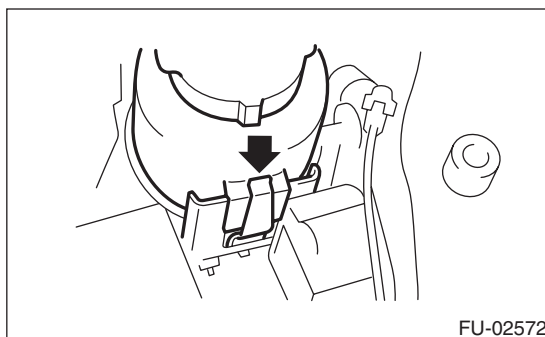
Do not disconnect the power steering hose.



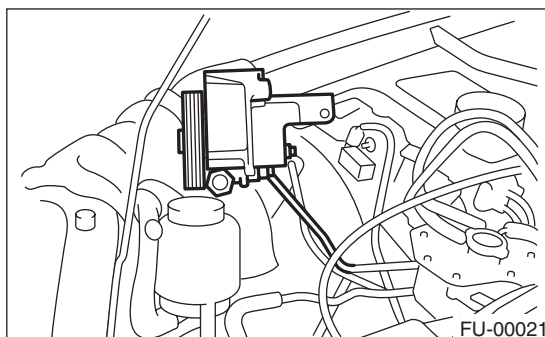
(4) Remove the bolts, which install power steering pump bracket.



(5) Remove the reservoir tank from the bracket by pulling it upward.



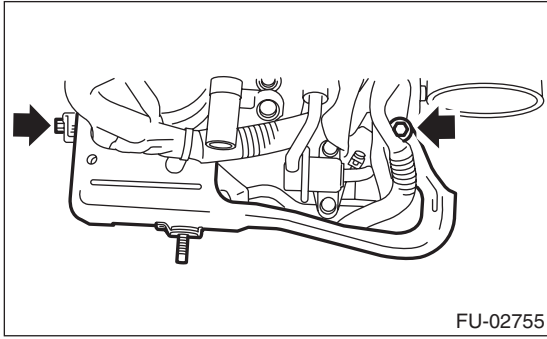
(6) Place the power steering pump on the right side wheel apron.



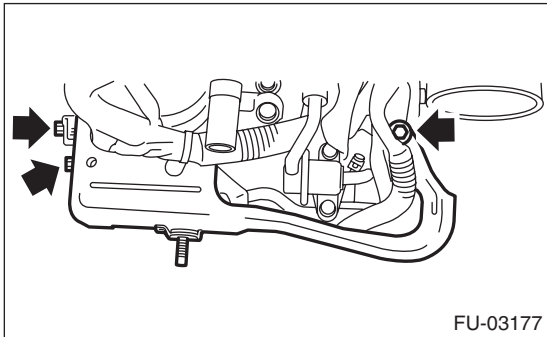
Fuel Injector

FUEL INJECTION (FUEL SYSTEMS)

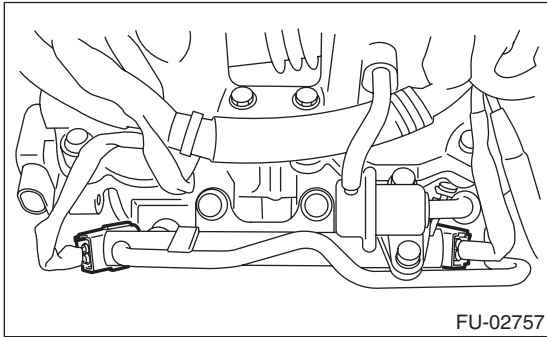
- 8) Remove the fuel pipe protector RH.
• Except for STI model



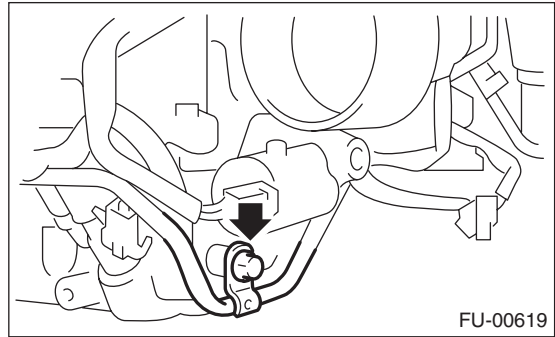
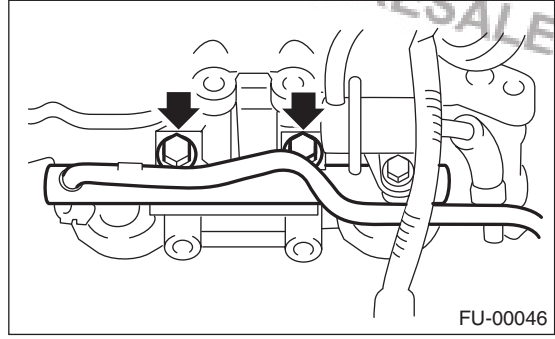
- STI model



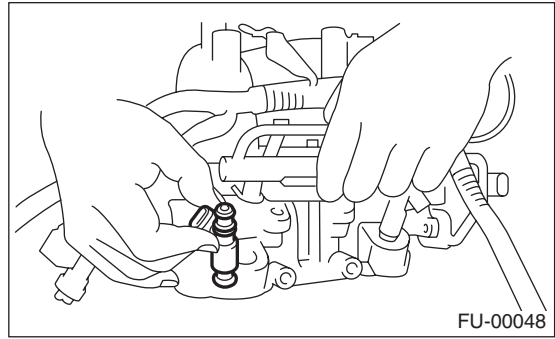
- 9) Disconnect the connector from fuel injector.



- 10) Remove the bolt which holds the injector pipe to the intake manifold.

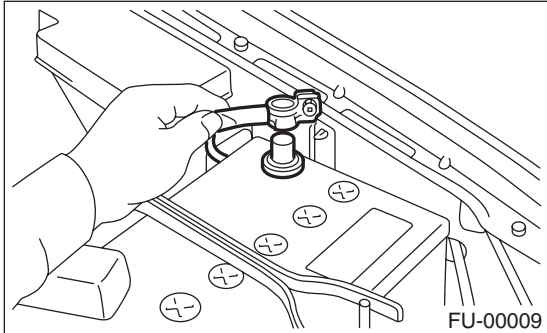


- 11) Remove the fuel injector while lifting up the fuel injector pipe.

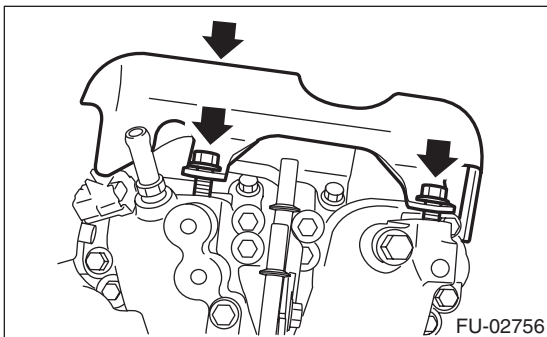


2. LH SIDE

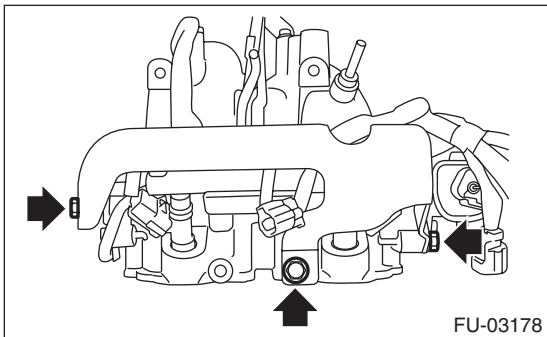
- 1) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 2) Disconnect the ground cable from the battery.



- 3) Open the fuel filler flap lid, and remove the fuel filler cap.
- 4) Remove the intake manifold. <Ref. to FU(H4DOTC)-17, REMOVAL, Intake Manifold.>
- 5) Remove the fuel pipe protector LH.
 - Except for STI model

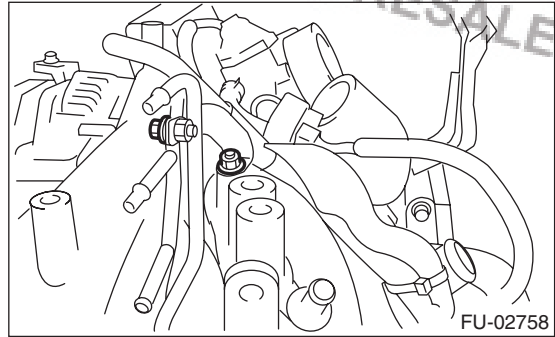


- STI model

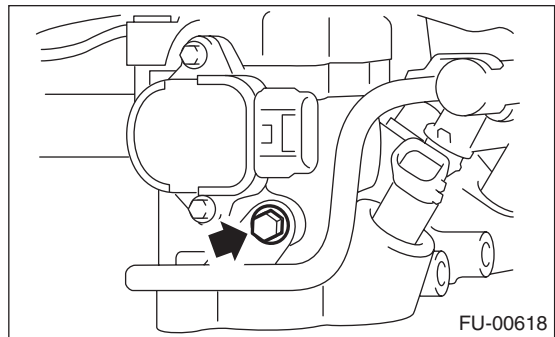
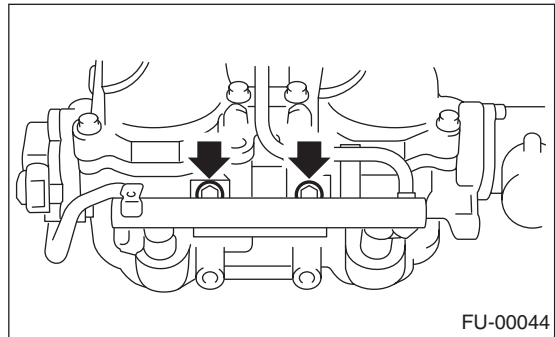


- 6) Disconnect the connector from fuel injector.
- 7) Remove the purge control solenoid valve. <Ref. to EC(H4DOTC)-8, REMOVAL, Purge Control Solenoid Valve.>

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



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



- 10) Remove the fuel injector while lifting up the fuel injector pipe.

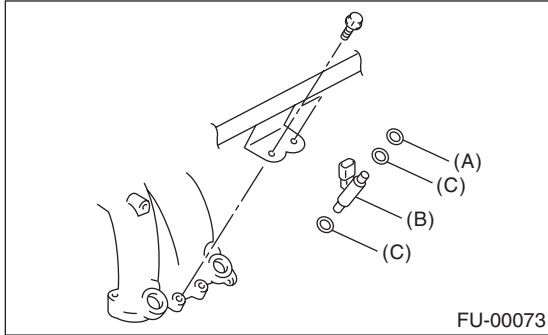
B: INSTALLATION

1. RH SIDE

Install in the reverse order of removal.

NOTE:

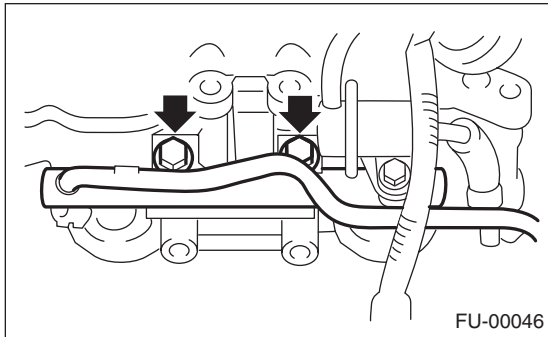
Use new O-ring and insulator.



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

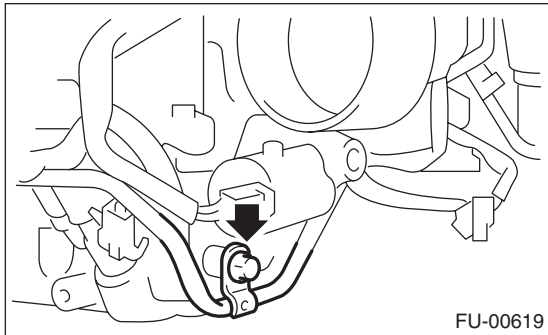
Tightening torque:

19 N·m (1.9 kgf-m, 14.0 ft-lb)



Tightening torque:

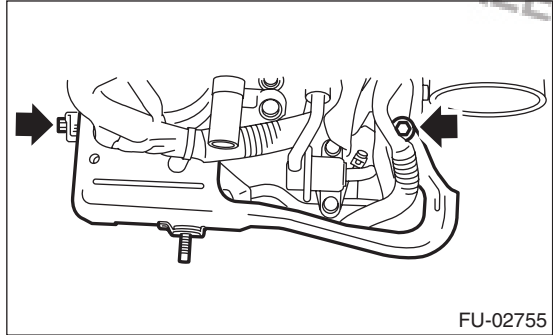
19 N·m (1.9 kgf-m, 14.0 ft-lb)



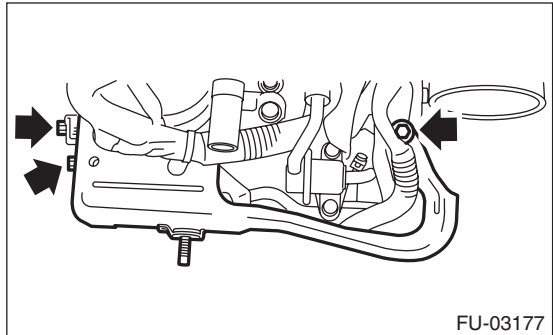
Tightening torque:

19 N·m (1.9 kgf-m, 14.0 ft-lb)

- Except for STI model



- STI model

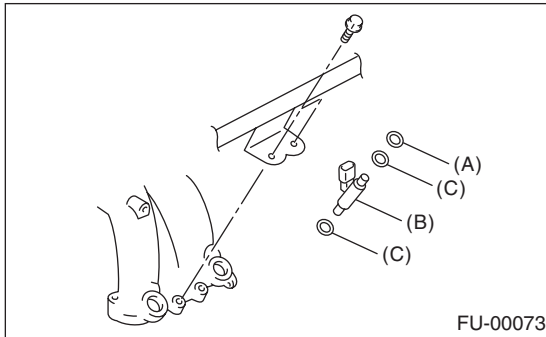


2. LH SIDE

Install in the reverse order of removal.

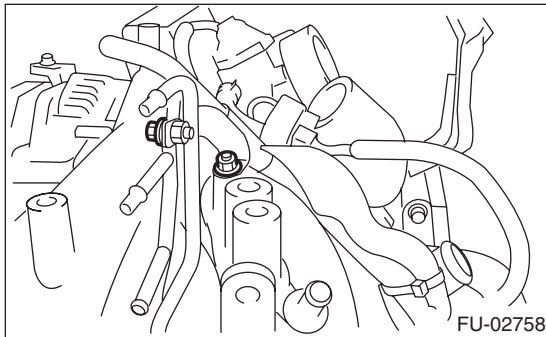
NOTE:

Use new O-ring and insulator.

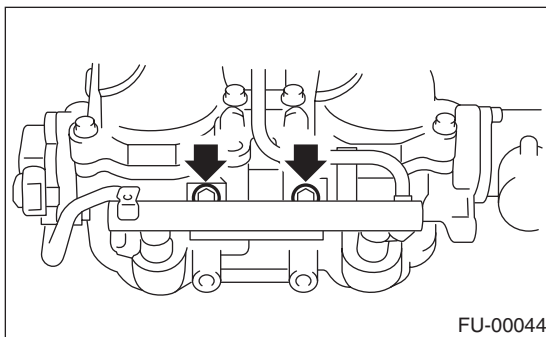


- (A) O-ring
- (B) Fuel injector
- (C) Insulator

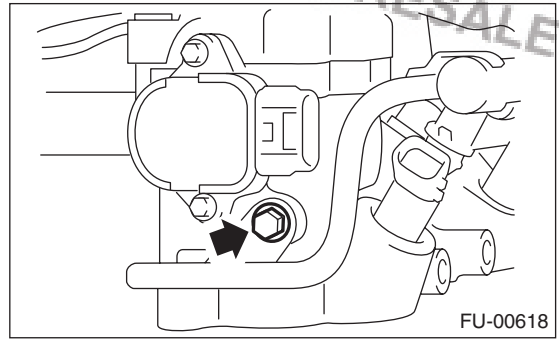
Tightening torque:
6.4 N·m (0.65 kgf-m, 4.7 ft-lb)



Tightening torque:
19 N·m (1.9 kgf-m, 14.0 ft-lb)

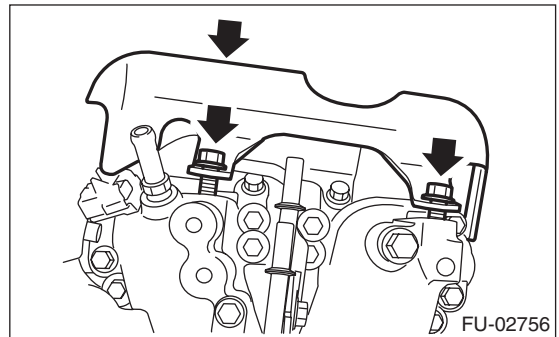


Tightening torque:
19 N·m (1.9 kgf-m, 14.0 ft-lb)

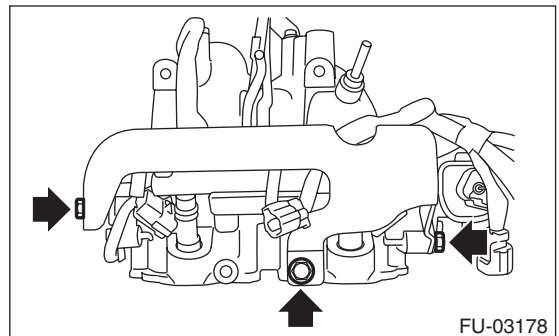


Tightening torque:
19 N·m (1.9 kgf-m, 14.0 ft-lb)

- Except for STI model



- STI model



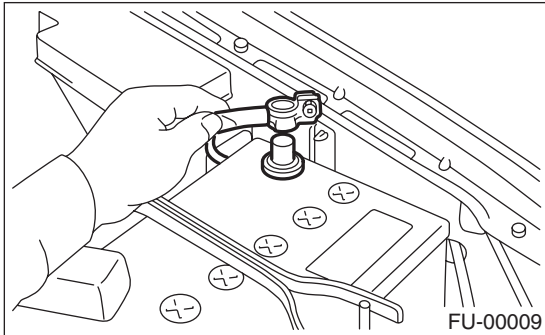
Tumble Generator Valve Assembly

FUEL INJECTION (FUEL SYSTEMS)

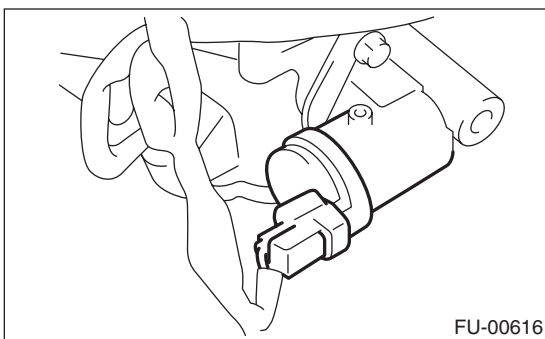
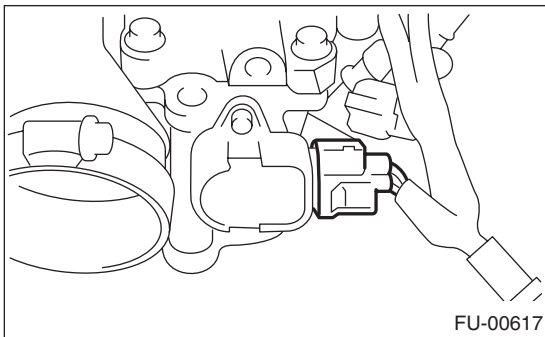
12. Tumble Generator Valve Assembly

A: REMOVAL

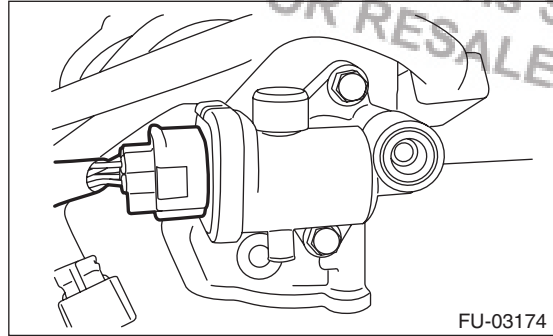
- 1) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 2) Disconnect the ground cable from the battery.



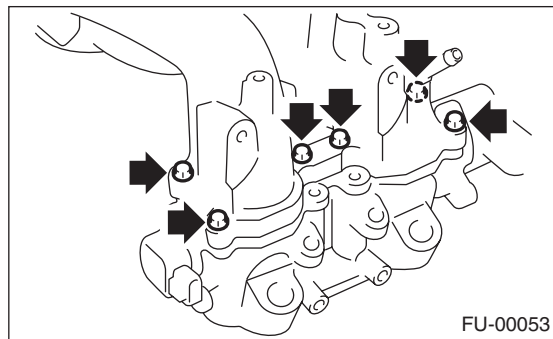
- 3) Open the fuel filler flap lid, and remove the fuel filler cap.
- 4) Remove the intake manifold. <Ref. to FU(H4DOTC)-17, REMOVAL, Intake Manifold.>
- 5) Disconnect the connector from the tumble generator valve assembly.
 - Except for STI model



- STI model



- 6) Remove the fuel injector. <Ref. to FU(H4DOTC)-37, REMOVAL, Fuel Injector.>
- 7) Remove the tumble generator valve assembly from the intake manifold.



B: INSTALLATION

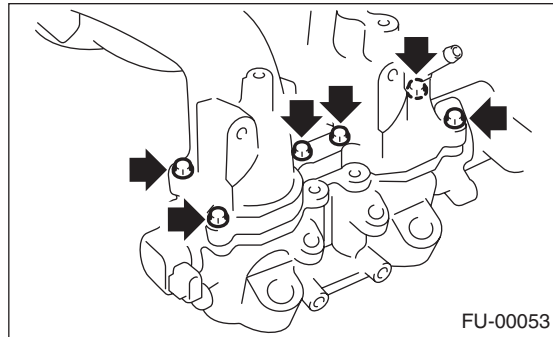
Install in the reverse order of removal.

NOTE:

Use a new gasket.

Tightening torque:

8.25 N·m (0.84 kgf-m, 6.1 ft-lb)



13. Tumble Generator Valve Actuator

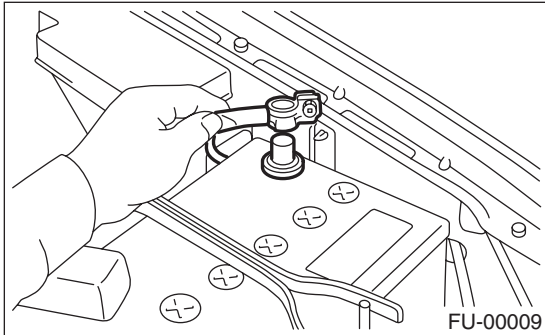
A: REMOVAL

NOTE:

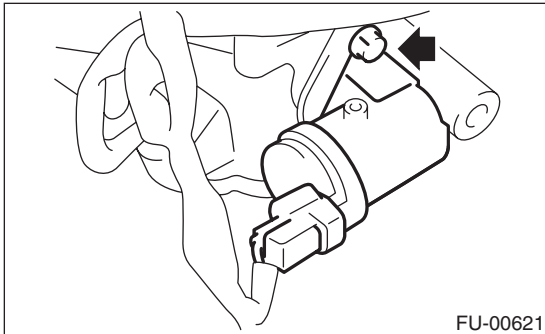
The tumble generator valve assembly of the STI model cannot be disassembled.

1. RH SIDE

- 1) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 2) Disconnect the ground cable from the battery.

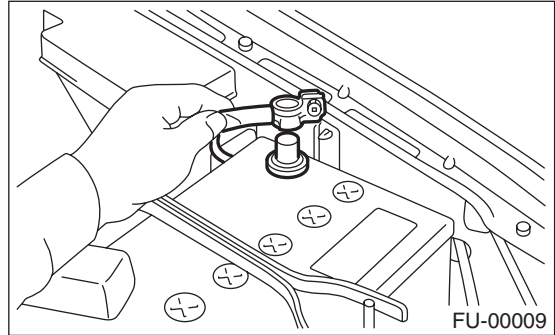


- 3) Open the fuel filler flap lid, and remove the fuel filler cap.
- 4) Remove the intake manifold. <Ref. to FU(H4DOTC)-17, REMOVAL, Intake Manifold.>
- 5) Disconnect the connector from tumble generator valve actuator.
- 6) Remove the tumble generator valve actuator.

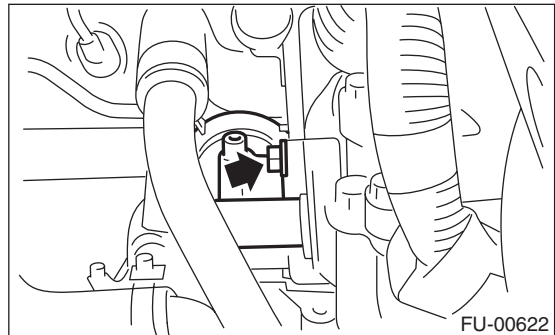


2. LH SIDE

- 1) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 2) Disconnect the ground cable from the battery.



- 3) Open the fuel filler flap lid, and remove the fuel filler cap.
- 4) Remove the secondary air pump. <Ref. to EC(H4DOTC)-9, REMOVAL, Secondary Air Pump.>
- 5) Disconnect the connector from tumble generator valve actuator.
- 6) Remove the tumble generator valve actuator.



B: INSTALLATION

1. RH SIDE

Install in the reverse order of removal.

2. LH SIDE

Install in the reverse order of removal.

Tumble Generator Valve Position Sensor

FUEL INJECTION (FUEL SYSTEMS)

14. Tumble Generator Valve Position Sensor

A: SPECIFICATION

1. Except for STI MODEL

The tumble generator valve position sensor cannot be adjusted when installed, so it should not be removed from the tumble generator valve assembly. Refer to "Tumble Generator Valve Assembly" for removal and installation procedure. <Ref. to FU(H4DOTC)-42, REMOVAL, Tumble Generator Valve Assembly.> <Ref. to FU(H4DOTC)-42, INSTALLATION, Tumble Generator Valve Assembly.>

2. STI MODEL

The tumble generator valve assembly cannot be disassembled.

Refer to "Tumble Generator Valve Assembly" for removal and installation procedure. <Ref. to FU(H4DOTC)-42, REMOVAL, Tumble Generator Valve Assembly.> <Ref. to FU(H4DOTC)-42, INSTALLATION, Tumble Generator Valve Assembly.>

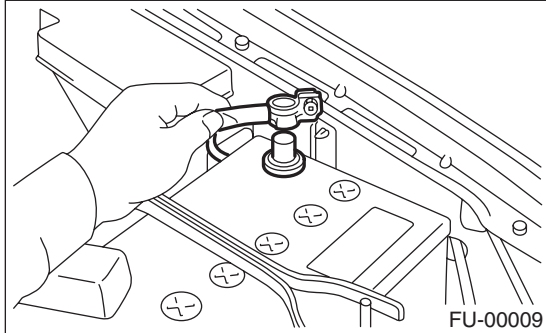
Wastegate Control Solenoid Valve

FUEL INJECTION (FUEL SYSTEMS)

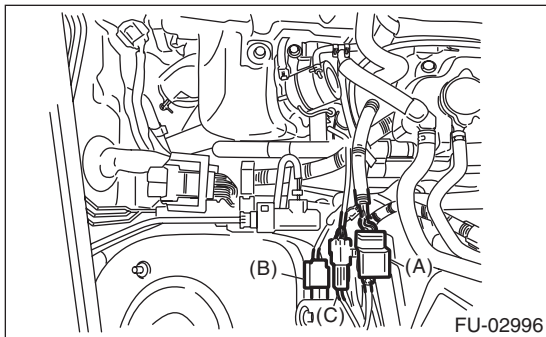
15. Wastegate Control Solenoid Valve

A: REMOVAL

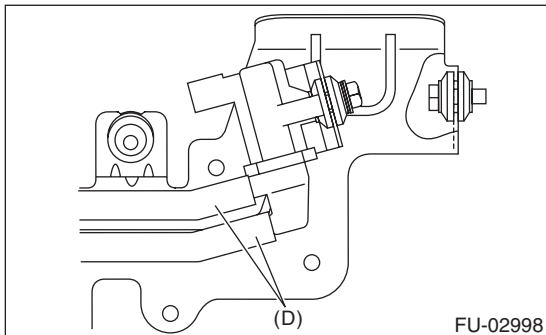
- 1) Disconnect the ground cable from the battery.



- 2) Disconnect the engine harness connector (A) from bracket.
- 3) Disconnect the connector (B) from wastegate control solenoid valve.
- 4) Disconnect the connector (C) of front oxygen (A/F) sensor from bracket.
- 5) Remove the bracket from vehicle body.



- 6) Disconnect pressure hose (D) from the wastegate control solenoid valve.



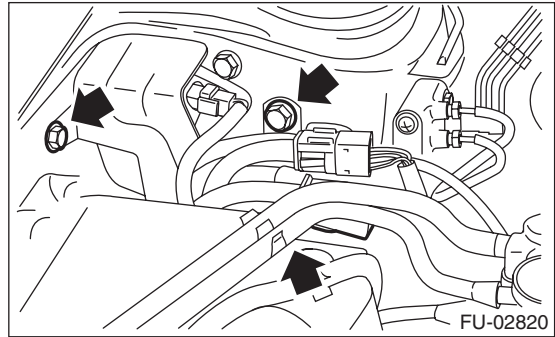
- 7) Remove the wastegate control solenoid valve from the bracket.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

6.5 N·m (0.66 kgf-m, 4.8 ft-lb)



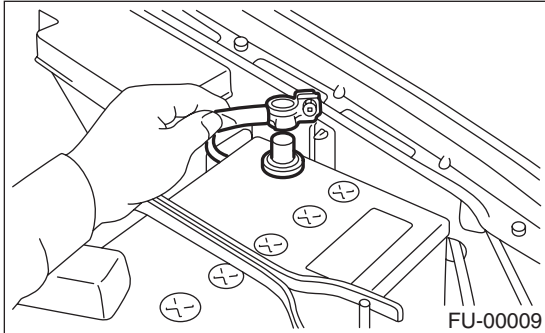
Front Oxygen (A/F) Sensor

FUEL INJECTION (FUEL SYSTEMS)

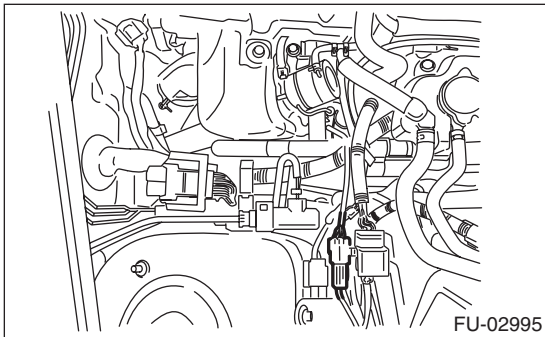
16. Front Oxygen (A/F) Sensor

A: REMOVAL

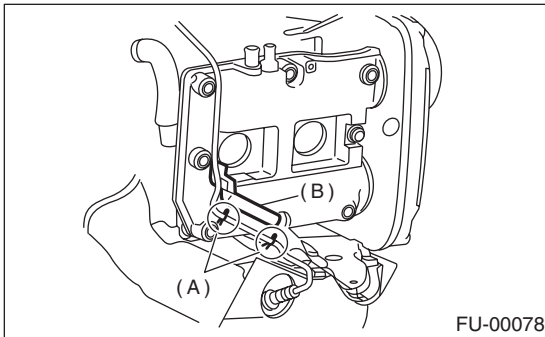
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from the battery.



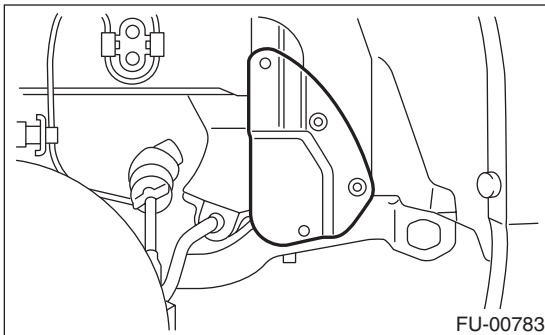
- 3) Disconnect the connector from front oxygen (A/F) sensor.



- 4) Disconnect the engine harness fixed by clip (A) from the bracket (B).



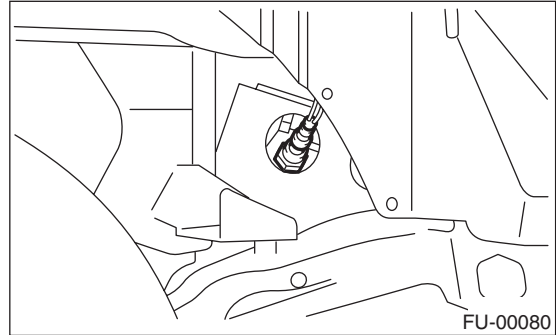
- 5) Remove the front right side wheel.
- 6) Lift up the vehicle.
- 7) Remove the service hole cover.



- 8) Apply spray-type lubricant or equivalent to the threaded portion of front oxygen (A/F) sensor, and leave it for one minute or more.
- 9) Remove the front oxygen (A/F) sensor.

CAUTION:

When removing the oxygen (A/F) sensor, wait until exhaust pipe cools, otherwise it will damage the exhaust pipe.



B: INSTALLATION

- 1) Before installing front oxygen (A/F) sensor, apply the anti-seize compound only to the threaded portion of front oxygen (A/F) sensor. This facilitates the next removal.

CAUTION:

Never apply anti-seize compound to the protector of front oxygen (A/F) sensor.

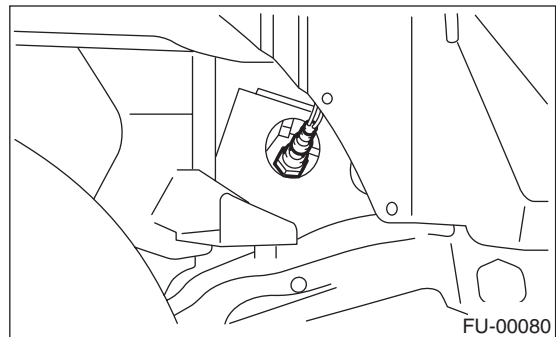
Anti-seize compound:

NEVER-SEEZ NSN, JET LUBE SS-30 or equivalent

- 2) Install the front oxygen (A/F) sensor.

Tightening torque:

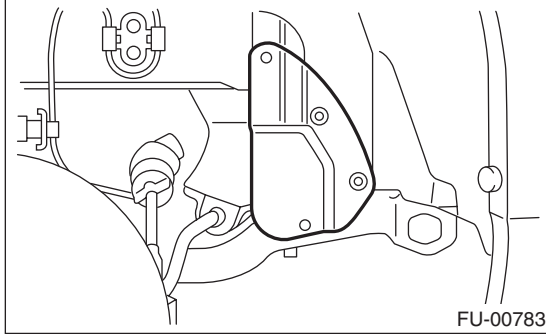
30 N·m (3.1 kgf·m, 22.1 ft·lb)



Front Oxygen (A/F) Sensor

FUEL INJECTION (FUEL SYSTEMS)

3) Install the service hole cover.



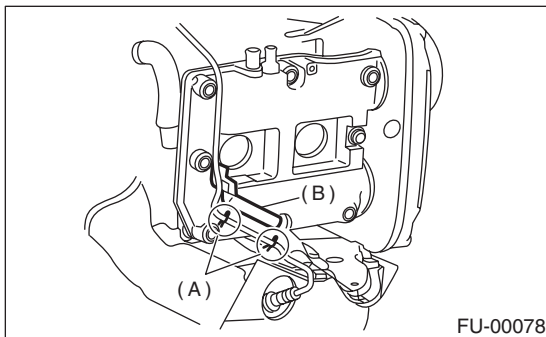
4) Lower the vehicle.

5) Install the front right side wheel.

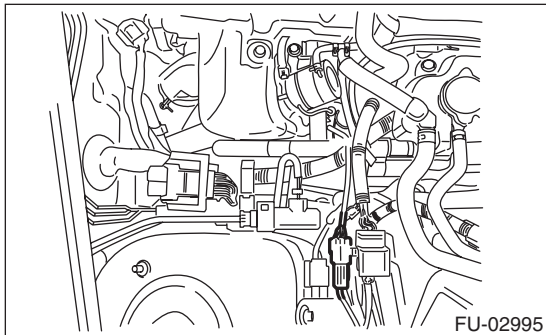
Tightening torque:

100 N·m (10.2 kgf·m, 73.8 ft·lb)

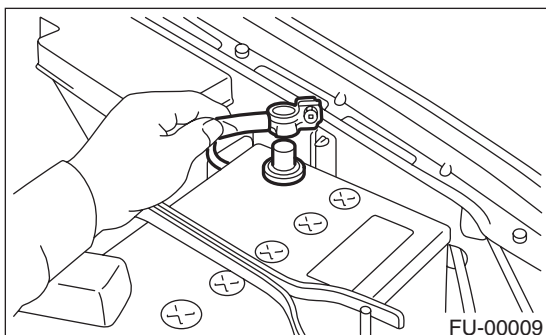
6) Connect the engine harness to the bracket (B) using the clip (A).



7) Connect the connector of front oxygen (A/F) sensor.



8) Connect the ground cable to the battery.



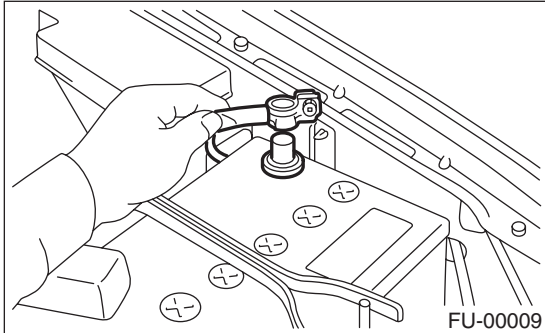
Rear Oxygen Sensor

FUEL INJECTION (FUEL SYSTEMS)

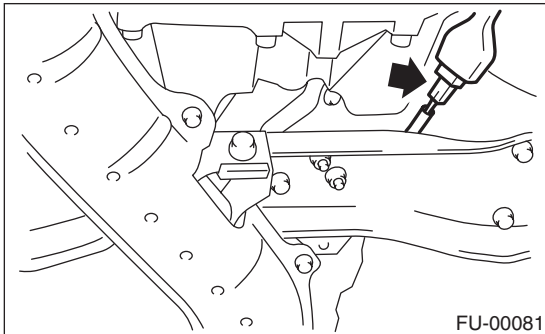
17.Rear Oxygen Sensor

A: REMOVAL

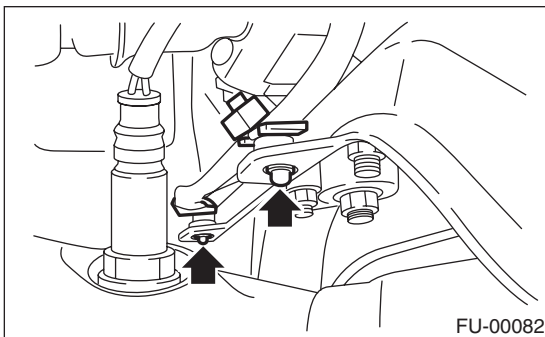
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from the battery.



- 3) Lift up the vehicle.
- 4) Disconnect the connector from the rear oxygen sensor.



- 5) Remove the clip by pulling out from the upper side of crossmember.

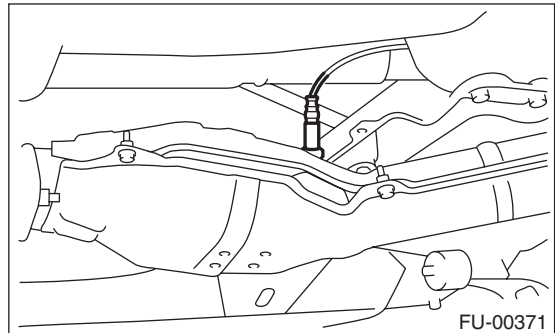


- 6) Apply spray-type lubricant or equivalent to the threaded portion of rear oxygen sensor, and leave it for one minute or more.

- 7) Remove the rear oxygen sensor.

CAUTION:

When removing the oxygen (A/F) sensor, wait until exhaust pipe cools, because it can damage the exhaust pipe.



B: INSTALLATION

- 1) Before installing rear oxygen sensor, apply the anti-seize compound only to the threaded portion of rear oxygen sensor. This facilitates the next removal.

CAUTION:

Never apply anti-seize compound to the protector of rear oxygen sensor.

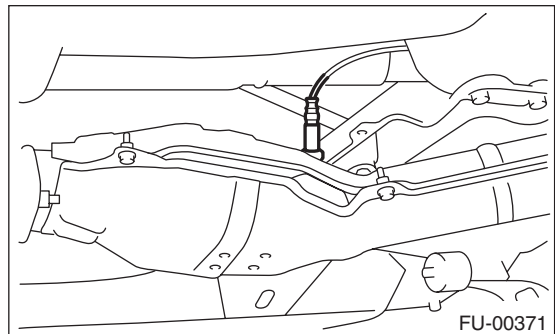
Anti-seize compound:

NEVER-SEEZ NSN, JET LUBE SS-30 or equivalent

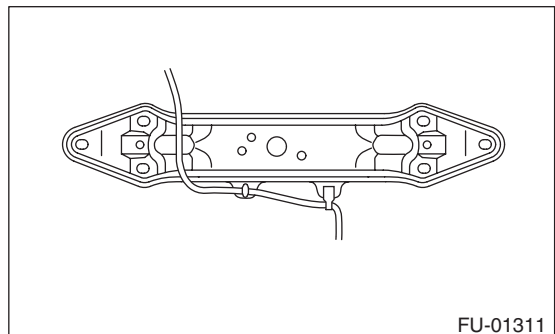
- 2) Install the rear oxygen sensor.

Tightening torque:

21 N·m (2.1 kgf-m, 15.2 ft-lb)



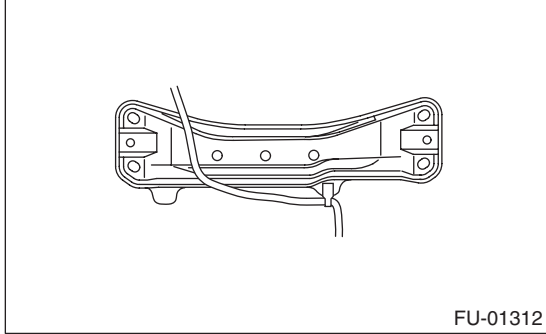
- AT model



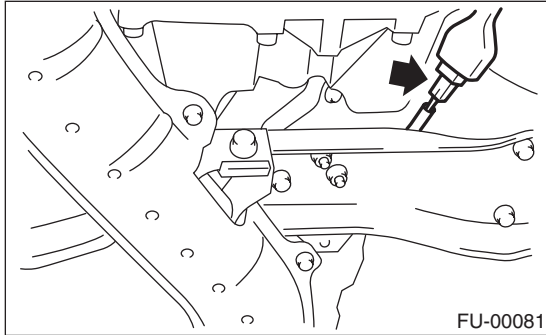
Rear Oxygen Sensor

FUEL INJECTION (FUEL SYSTEMS)

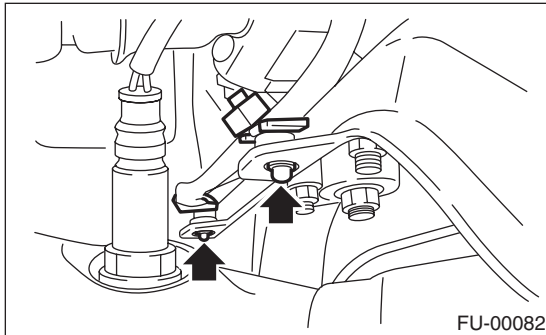
- MT model



- 3) Connect the connector to rear oxygen sensor.

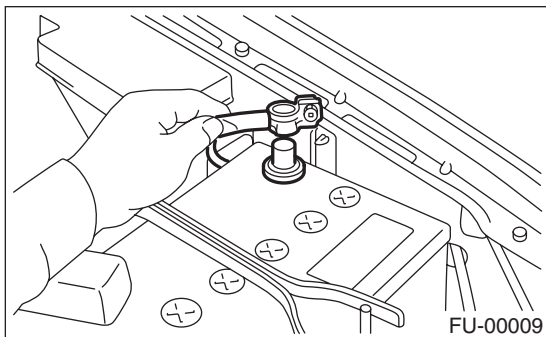


- 4) Connect the clip to the crossmember.



- 5) Lower the vehicle.

- 6) Connect the ground cable to the battery.



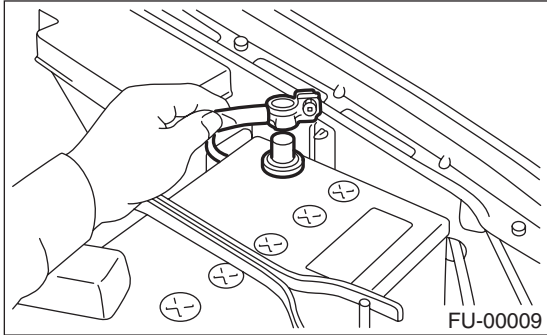
Engine Control Module (ECM)

FUEL INJECTION (FUEL SYSTEMS)

18.Engine Control Module (ECM)

A: REMOVAL

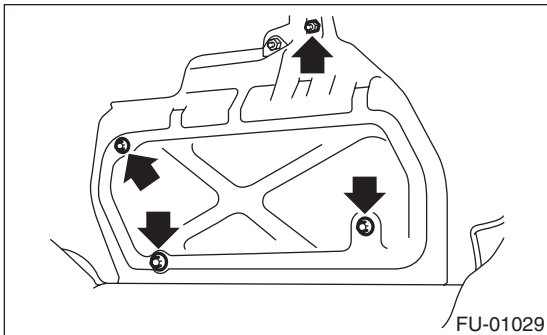
1) Disconnect the ground cable from the battery.



2) Remove the lower inner trim of passenger's side. <Ref. to EI-51, REMOVAL, Lower Inner Trim.>

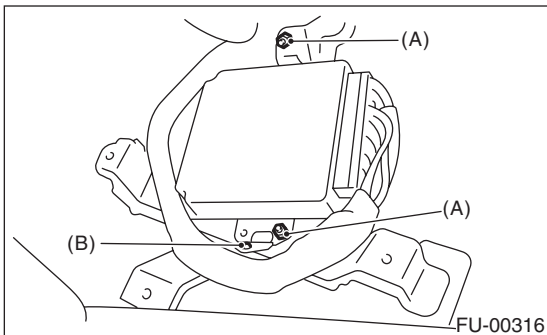
3) Detach the floor mat of passenger's seat.

4) Remove the protect cover.



5) Remove the nuts (A) which hold ECM to bracket.

6) Remove the clip (B) from the bracket.



7) Disconnect the ECM connectors, and take out the ECM.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

When replacing the ECM, be careful not to use the wrong spec. ECM to avoid any damage on the fuel injection system.

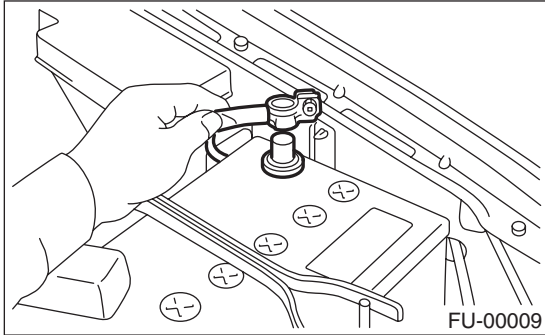
Tightening torque:

7.5 N·m (0.76 kgf·m, 5.5 ft·lb)

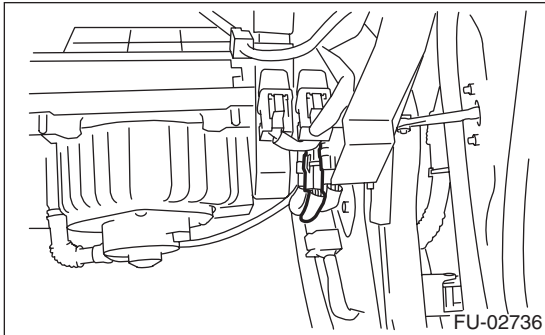
19. Main Relay

A: REMOVAL

- 1) Disconnect the ground cable from the battery.



- 2) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 3) Remove the passenger's side front side sill cover.
- 4) Disconnect the connectors from main relay.



- 5) Remove the main relay from the mounting bracket.

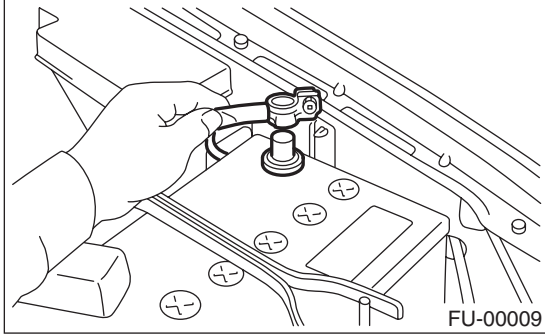
B: INSTALLATION

Install in the reverse order of removal.

20. Fuel Pump Relay

A: REMOVAL

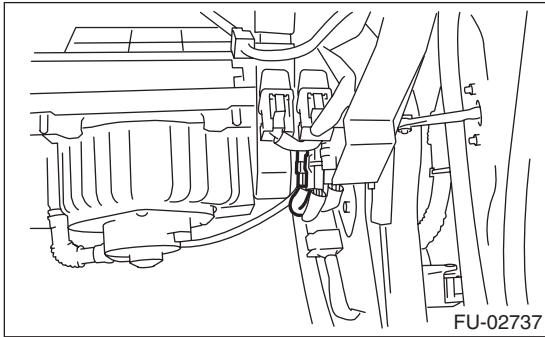
1) Disconnect the ground cable from the battery.



2) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>

3) Remove the passenger's side front side sill cover.

4) Disconnect the connector from the fuel pump relay.



5) Remove the fuel pump relay from the mounting bracket.

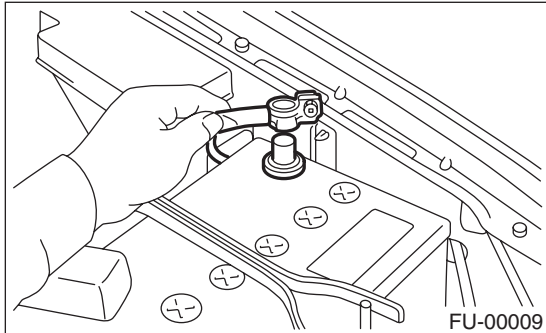
B: INSTALLATION

Install in the reverse order of removal.

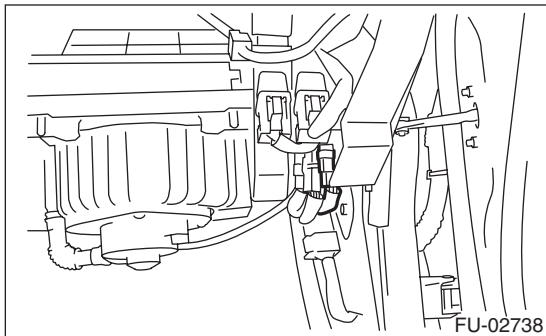
21. Electronic Throttle Control Relay

A: REMOVAL

- 1) Disconnect the ground cable from the battery.



- 2) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 3) Remove the passenger's side front side sill cover.
- 4) Disconnect the connector from electronic throttle control relay.



- 5) Remove the electronic throttle control relay from the mounting bracket.

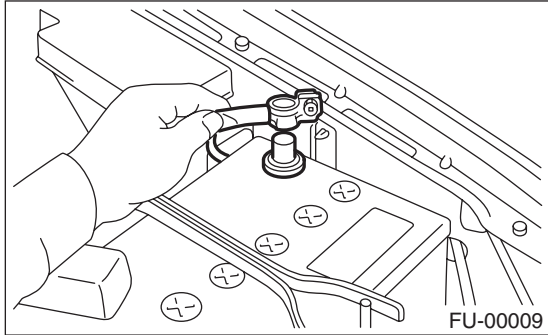
B: INSTALLATION

Install in the reverse order of removal.

22. Fuel Pump Control Unit

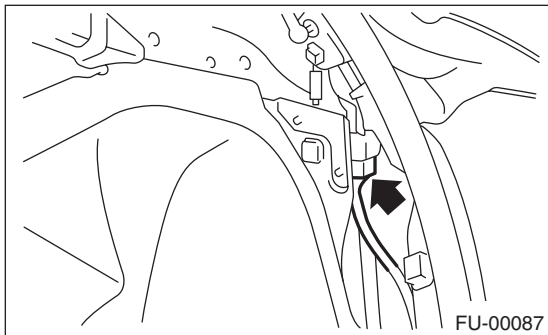
A: REMOVAL

1) Disconnect the ground cable from the battery.

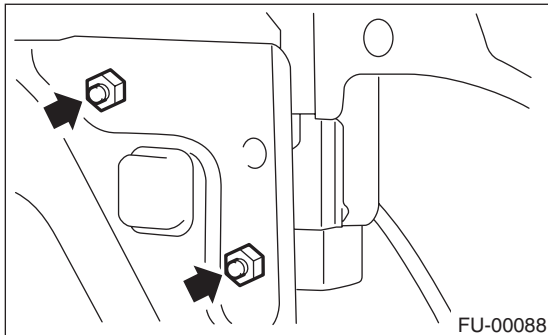


2) Remove the rear quarter trim. <Ref. to EI-52, REMOVAL, Rear Quarter Trim.>

3) Disconnect the connector from fuel pump control unit.



4) Remove the fuel pump control unit.



B: INSTALLATION

Install in the reverse order of removal.

23. Fuel

A: PROCEDURE

1. RELEASING OF FUEL PRESSURE

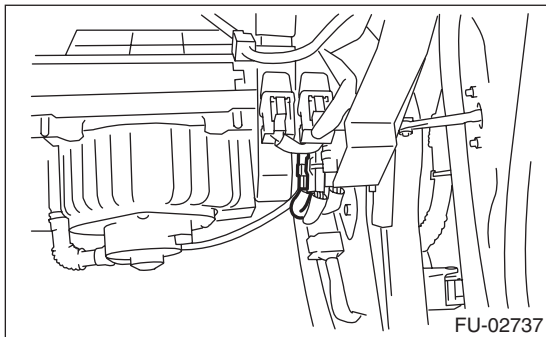
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

CAUTION:

Be careful not to spill fuel.

- 1) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 2) Remove the passenger's side front side sill cover.
- 3) Disconnect the connector from fuel pump relay.



- 4) Start the engine and run it until it stalls.
- 5) After the engine stalls, crank it for five more seconds.
- 6) Turn the ignition switch to OFF.

2. DRAINING FUEL

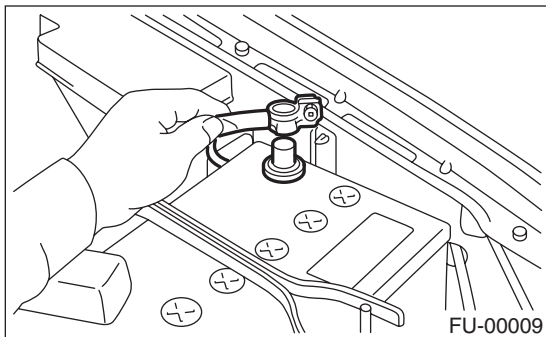
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

CAUTION:

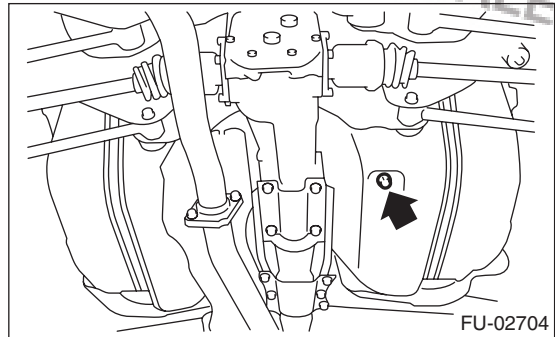
Be careful not to spill fuel.

- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from the battery.



- 3) Open the fuel filler flap lid, and remove the fuel filler cap.
- 4) Lift up the vehicle.
- 5) Remove the heat shield cover. (STI model)

- 6) Drain fuel from fuel tank. Set a container under the vehicle and remove the drain plug from the fuel tank.



- 7) Tighten the fuel drain plugs.

NOTE:

Use a new gasket.

Tightening torque:

26 N·m (2.65 kgf·m, 19.2 ft·lb)

24. Fuel Tank

A: REMOVAL

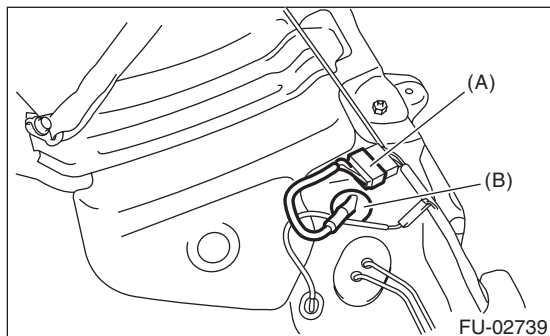
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

CAUTION:

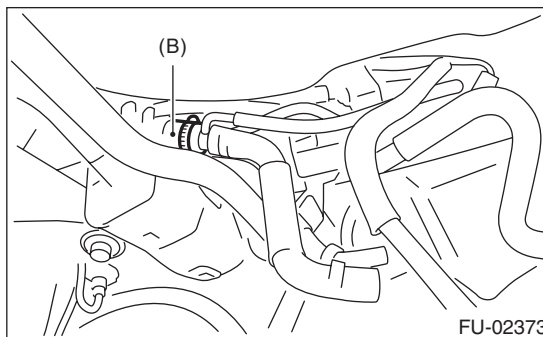
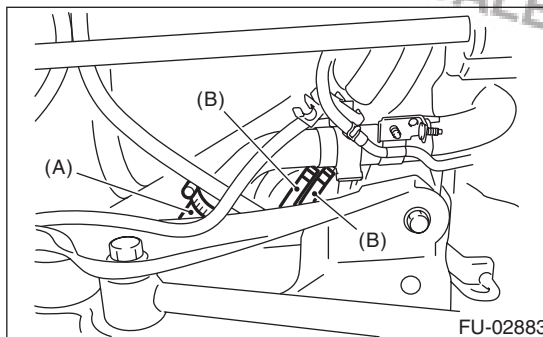
Be careful not to spill fuel.

- 1) Set the vehicle on a lift.
- 2) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 3) Drain fuel from fuel tank. <Ref. to FU(H4DOTC)-55, DRAINING FUEL, PROCEDURE, Fuel.>
- 4) Remove the rear seat.
- 5) Disconnect the connector (A) of fuel tank cord connected to the rear harness.
- 6) Push the grommet (B) which holds the fuel tank cord on the floor panel into under the body.

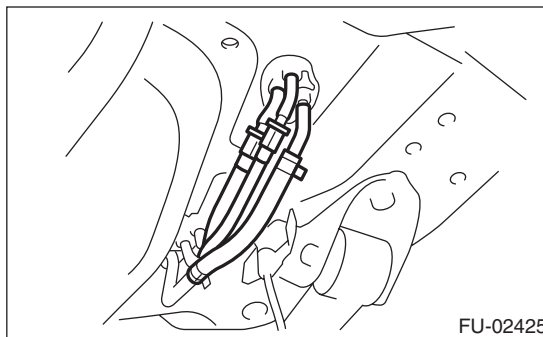


- 7) Remove the rear crossmember. <Ref. to RS-17, REMOVAL, Rear Crossmember.>
- 8) Remove the canister. <Ref. to EC(H4DOTC)-7, REMOVAL, Canister.>
- 9) Disconnect the connector from the pressure control solenoid valve.

- 10) Loosen the clamp, and disconnect the fuel filler hose (A) and evaporation hose (B) from fuel filler pipe.



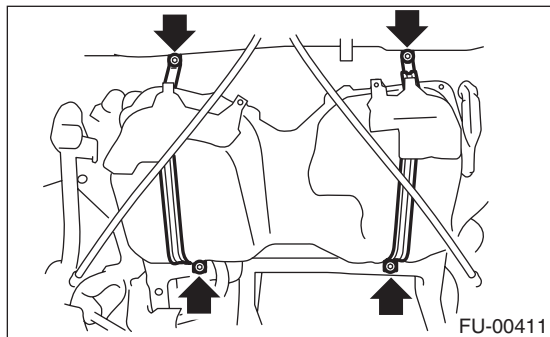
- 11) Move the clips, and disconnect the quick connector. <Ref. to FU(H4DOTC)-70, REMOVAL, Fuel Delivery, Return and Evaporation Lines.>
- 12) Disconnect the fuel hoses.



13) Support the fuel tank with a transmission jack, remove the band mounting bolts, and remove the fuel tank from the vehicle.

WARNING:

- A helper is required to perform this work.
- Fuel may remain in the side which does not have drain plug of fuel tank. This will cause the left and right sides to be unbalanced. Be careful not to drop the fuel tank when removing.

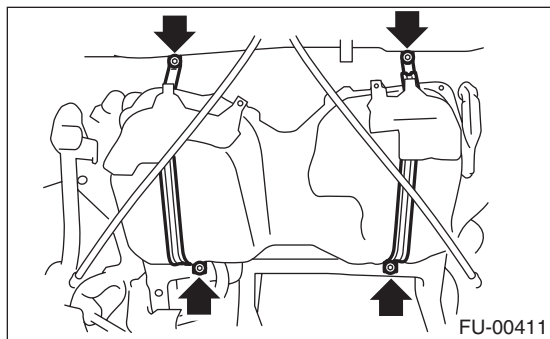


B: INSTALLATION

- 1) Support the fuel tank with a transmission jack and push the fuel tank harness into the access hole together with the grommet.
- 2) Set the fuel tank and temporarily tighten the bolts of fuel tank bands.

WARNING:

- A helper is required to perform this work.**

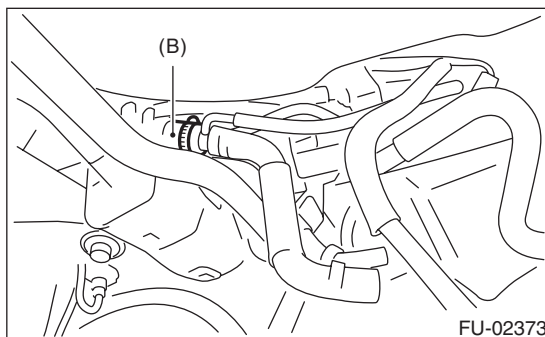
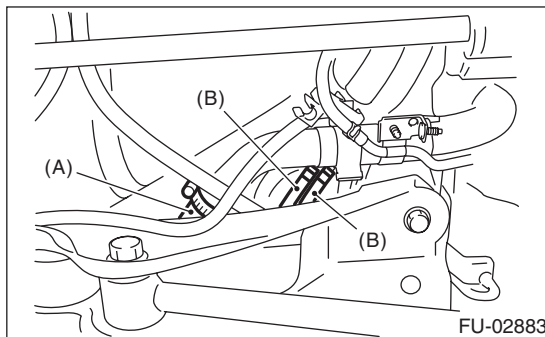


3) Connect the fuel filler hose (A) to the pipe with an overlap of 35 — 40 mm (1.38 — 1.57 in).

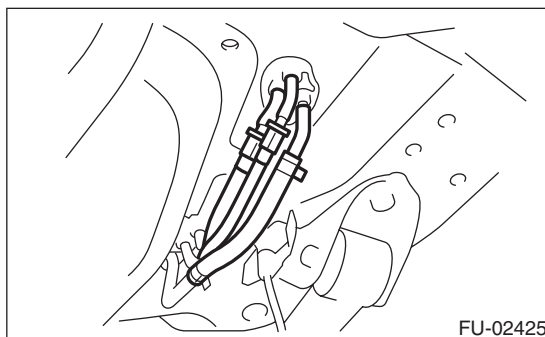
4) Connect the evaporation hose (B) to the pipe.

NOTE:

Do not allow the clips to touch other hoses and rear suspension crossmember.



5) Connect the fuel hoses, and secure with clips and quick connectors. <Ref. to FU(H4DOTC)-71, INSTALLATION, Fuel Delivery, Return and Evaporation Lines.>



6) Connect the connector to the pressure control solenoid valve.

7) Attach the canister. <Ref. to EC(H4DOTC)-7, INSTALLATION, Canister.>

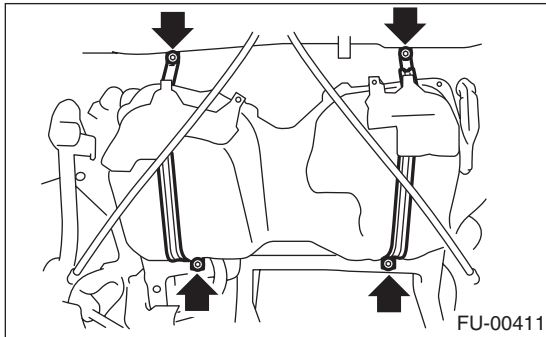
Fuel Tank

FUEL INJECTION (FUEL SYSTEMS)

8) Tighten the band mounting bolts.

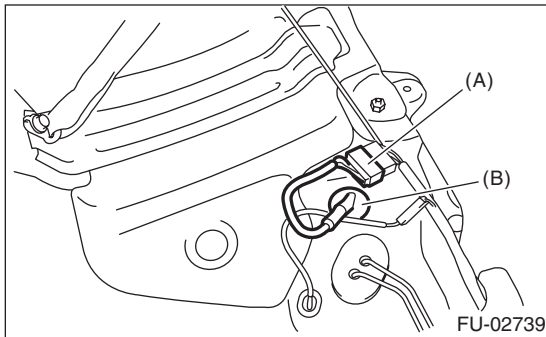
Tightening torque:

33 N·m (3.4 kgf-m, 25 ft-lb)



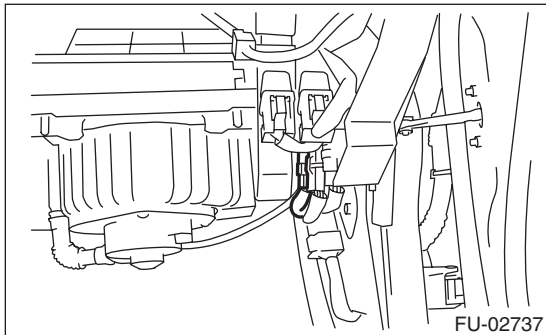
9) Install the rear crossmember. <Ref. to RS-17, INSTALLATION, Rear Crossmember.>

10) Connect connector (A) to the fuel tank cord and plug the service hole with grommet (B).



11) Set the rear seat and floor mats.

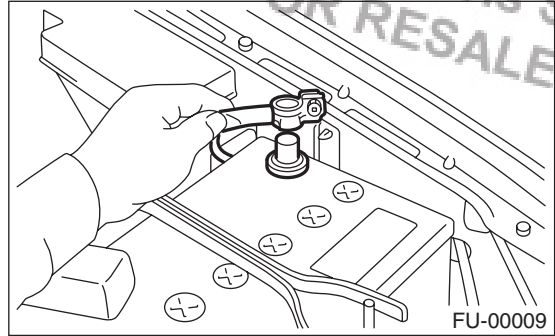
12) Connect the connector to fuel pump relay.



13) Install the passenger's side front side sill cover.

14) Install the glove box. <Ref. to EI-43, INSTALLATION, Glove Box.>

15) Connect the ground cable to the battery.



C: INSPECTION

1) Check that there are no cracks, holes or other damage to the fuel tank.

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

25. Fuel Filler Pipe

A: REMOVAL

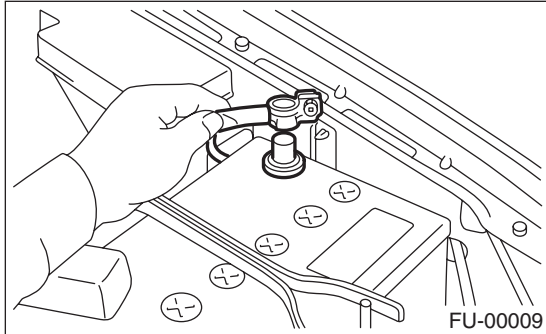
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

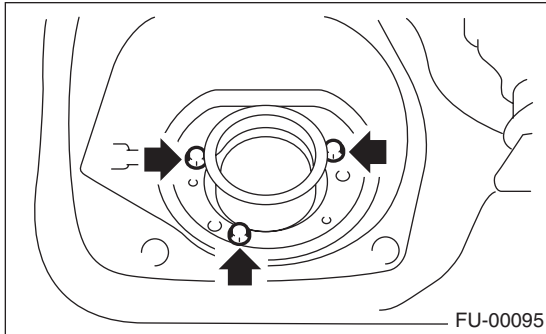
CAUTION:

Be careful not to spill fuel.

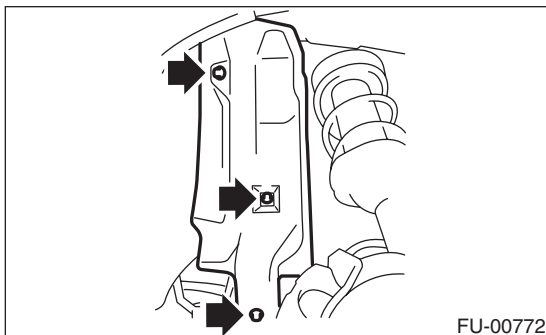
- 1) Set the vehicle on a lift.
- 2) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 3) Disconnect the ground cable from the battery.



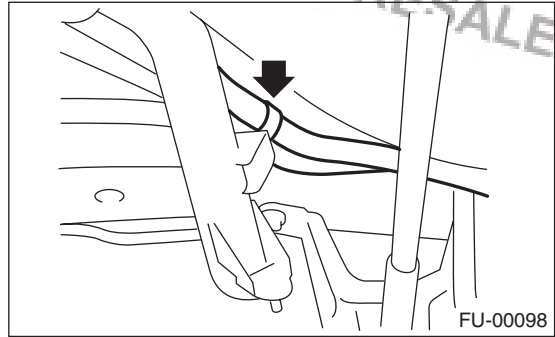
- 4) Open the fuel filler flap lid, and remove the fuel filler cap.
- 5) Remove the screws which secure gasket.



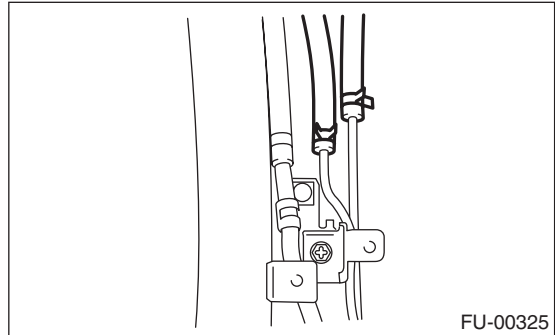
- 6) Remove the rear wheel RH.
- 7) Lift up the vehicle.
- 8) Drain the fuel tank. <Ref. to FU(H4DOTC)-55, DRAINING FUEL, PROCEDURE, Fuel.>
- 9) Remove the fuel filler pipe protector.



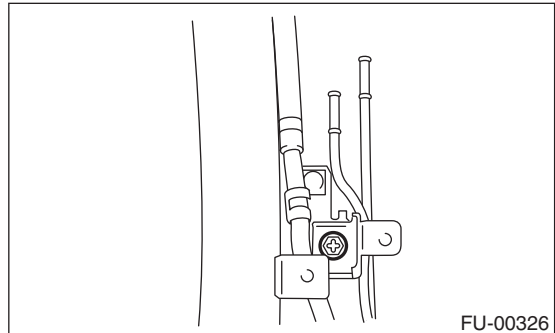
- 10) Disconnect the evaporation hose from the clip of fuel filler pipe.



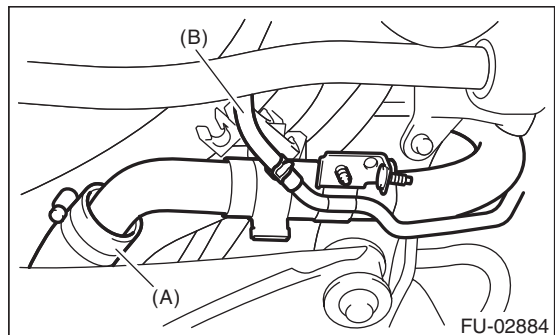
- 11) Disconnect the air vent hose from the fuel filler pipe.



- 12) Remove the bolts which hold fuel filler pipe bracket on the body.



- 13) Loosen the clamp and disconnect the fuel filler hose (A) from the fuel filler pipe.
- 14) Loosen the clip and separate the evaporation hose (B).

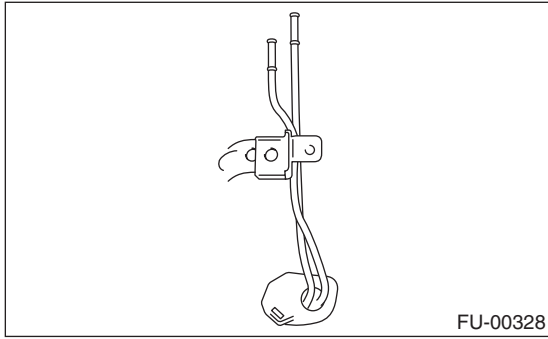


- 15) Remove the fuel filler pipe to the underside of the vehicle.

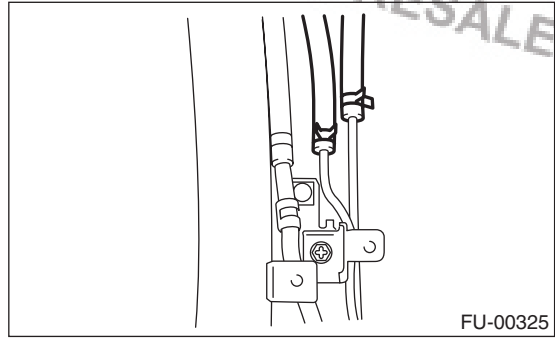
Fuel Filler Pipe

FUEL INJECTION (FUEL SYSTEMS)

16) Remove the air vent pipe together with the clips from the body.



5) Connect the evaporation hose to the fuel filler pipe.

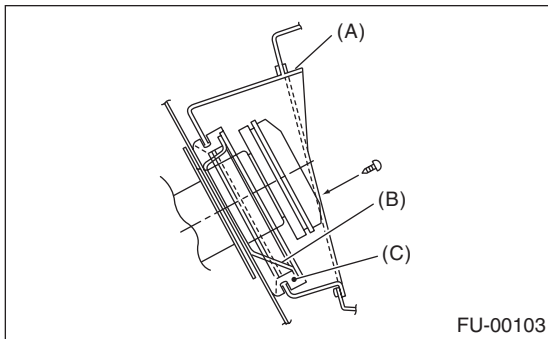


B: INSTALLATION

- 1) Open the fuel filler flap lid.
- 2) Set the fuel saucer (A) with rubber seal (C), and insert the fuel filler pipe into hole from the inner side of apron.
- 3) Align the holes in fuel filler pipe neck and set the cup (B), and tighten the screws.

NOTE:

If the edges of rubber seal are folded toward the inside, straighten it with a screwdriver.



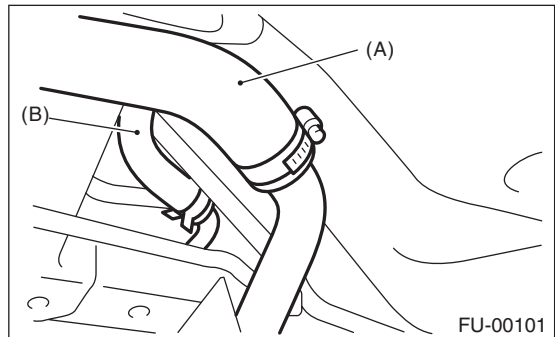
6) Connect the fuel filler hose (A) to the pipe with an overlap of 35 — 40 mm (1.38 — 1.57 in).

7) Connect the evaporation hose (B) to the pipe with an overlap of 25 — 30 mm (0.98 — 1.18 in).

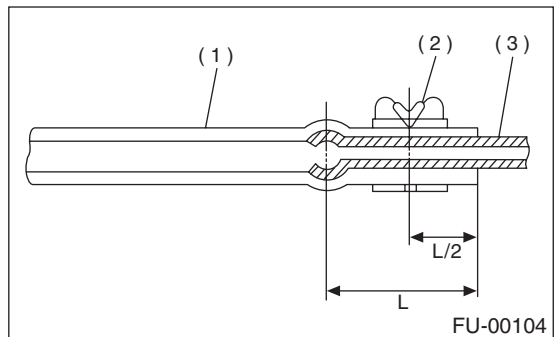
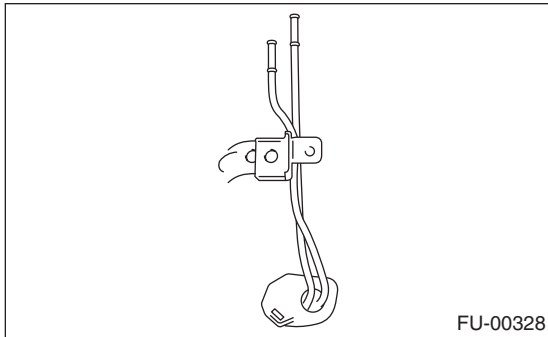
$L = 27.5 \pm 2.5 \text{ mm (1.083 \pm 0.098 in)}$

NOTE:

Do not allow the clips to touch other hoses and rear suspension crossmember.



4) Connect the evaporation pipe.

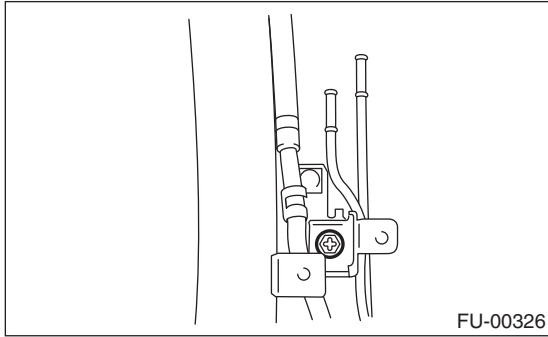


- (1) Hose
- (2) Clip
- (3) Pipe

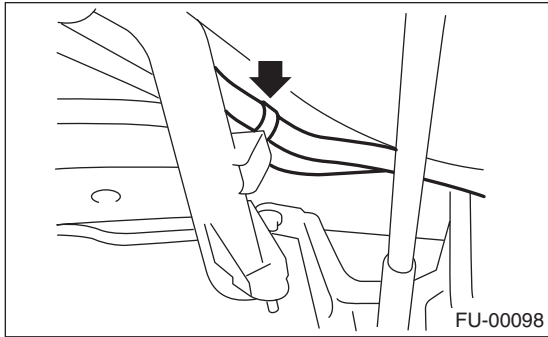
8) Tighten the bolts which hold fuel filler pipe bracket on the body.

Tightening torque:

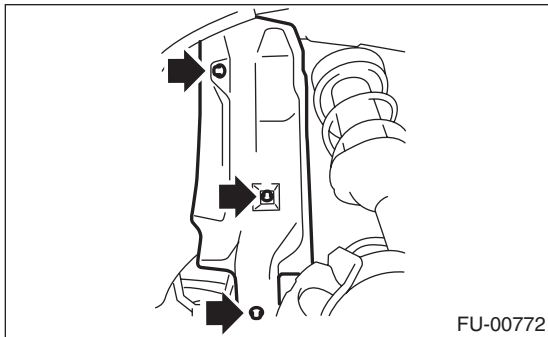
7.5 N·m (0.76 kgf·m, 5.5 ft·lb)



9) Fasten the evaporation hoses to the clip of fuel filler pipe.



10) Install the fuel filler pipe protector.



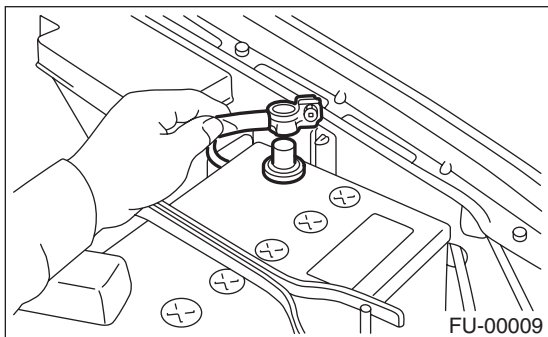
11) Lower the vehicle.

12) Install the rear wheel RH.

Tightening torque:

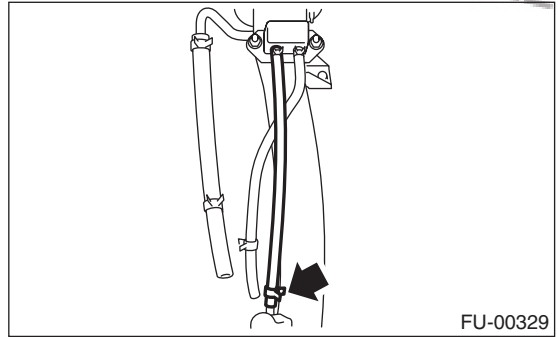
100 N·m (10.2 kgf·m, 73.8 ft·lb)

13) Connect the ground cable to the battery.

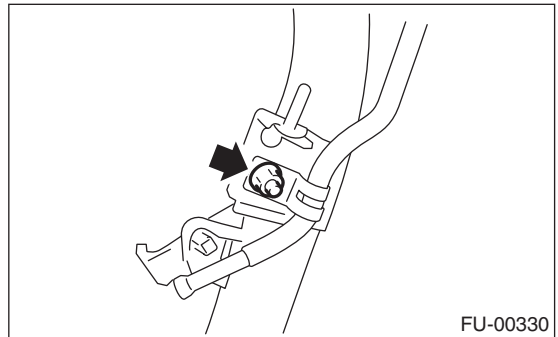


C: DISASSEMBLY

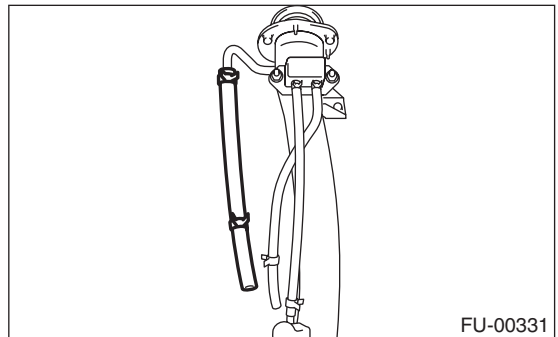
1) Move the clamp and disconnect the evaporation hose from the joint pipe.



2) Remove the bolts which install joint pipe to the fuel filler pipe.



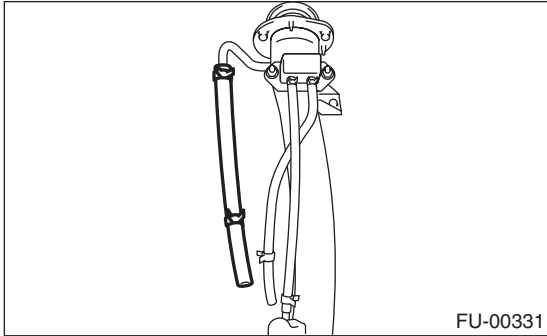
3) Disconnect the evaporation hose from the fuel filler pipe.



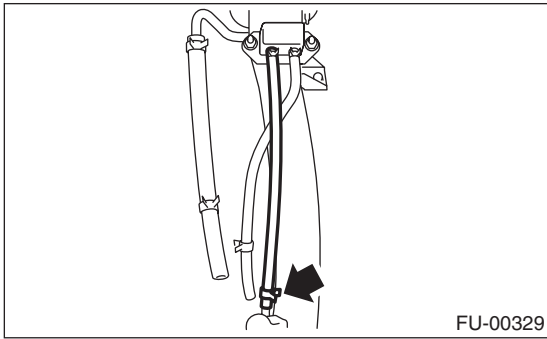
4) Remove the shut valve from the fuel filler pipe.
<Ref. to EC(H4DOTC)-19, REMOVAL, Shut Valve.>

D: ASSEMBLY

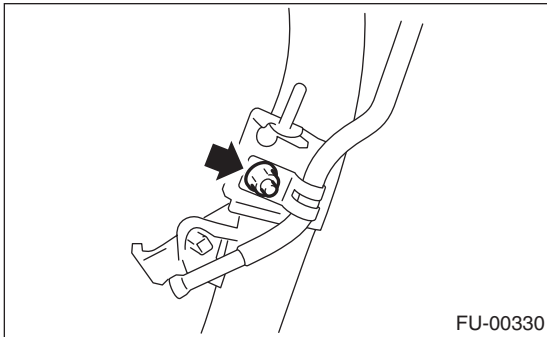
- 1) Install the shut pipe to the fuel filler pipe. <Ref. to EC(H4DOTC)-19, INSTALLATION, Shut Valve.>
- 2) Connect the evaporation hose to the fuel filler pipe.



- 3) Connect the evaporation hose to the evaporation pipe.



- 4) Connect the evaporation pipe to the fuel filler pipe.



26. Fuel Pump

A: REMOVAL

WARNING:

Place "NO OPEN FLAMES" signs near the working area.

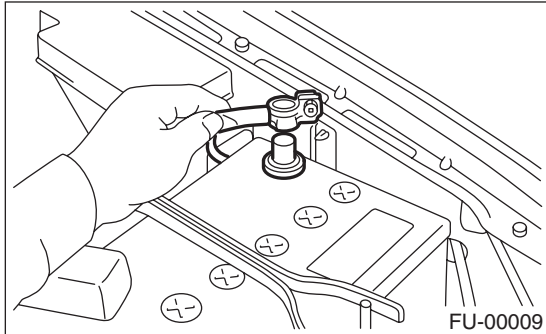
CAUTION:

Be careful not to spill fuel.

NOTE:

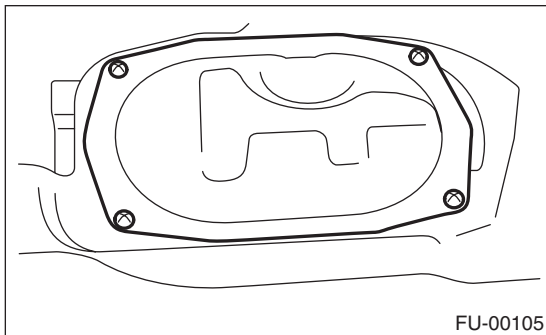
Fuel pump assembly consists of fuel pump, fuel filter and fuel level sensor.

- 1) Set the vehicle on a lift.
- 2) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 3) Disconnect the ground cable from the battery.



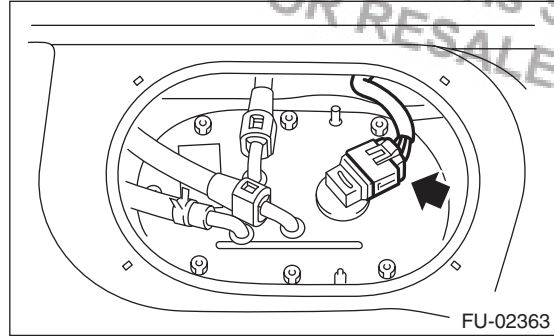
FU-00009

- 4) Open the fuel filler flap lid, and remove the fuel filler cap.
- 5) Lift up the vehicle.
- 6) Drain fuel from the fuel tank. <Ref. to FU(H4DOTC)-55, DRAINING FUEL, PROCEDURE, Fuel.>
- 7) Remove the trunk room mat. (Sedan model)
- 8) Remove the luggage floor mat. (Wagon model) <Ref. to EI-61, REMOVAL, Luggage Floor Mat.>
- 9) Remove the service hole cover.



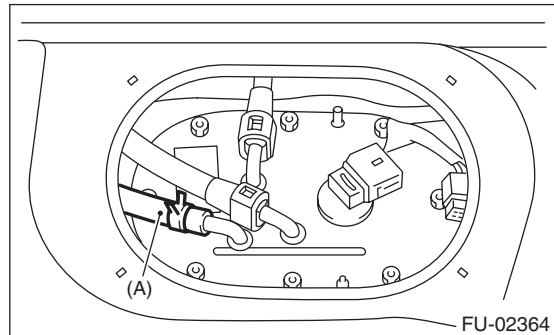
FU-00105

- 10) Disconnect the connector from fuel pump.



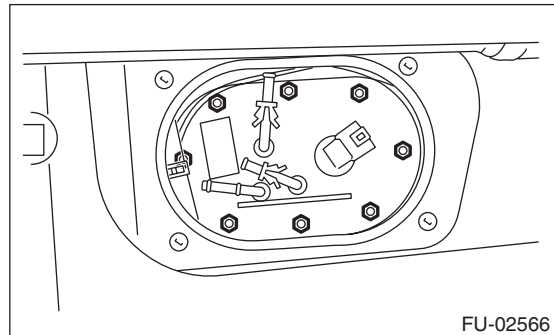
FU-02363

- 11) Disconnect the quick connector and then disconnect the fuel delivery hose. <Ref. to FU(H4DOTC)-70, REMOVAL, Fuel Delivery, Return and Evaporation Lines.>
- 12) Move the clips, and disconnect the fuel return hose (A) and jet pump hose (B).



FU-02364

- 13) Remove the nuts which install fuel pump assembly onto fuel tank.



FU-02566

- 14) Remove the fuel pump assembly from the fuel tank.

NOTE:

When removing, be careful not to let the float portion of the fuel level sensor interfere with fuel tank.

B: INSTALLATION

Install in the reverse order of removal while being careful of the following.

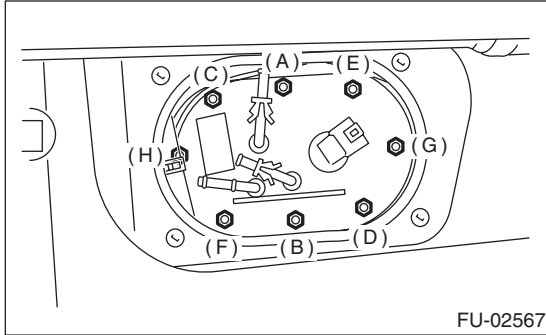
- Make sure the sealing portion is free from fuel or foreign matter before installation.
- Tighten the nuts in alphabetical sequence shown in the figure to the specified torque.

NOTE:

Use a new gasket and retainer.

Tightening torque:

4.4 N·m (0.45 kgf·m, 3.3 ft·lb)

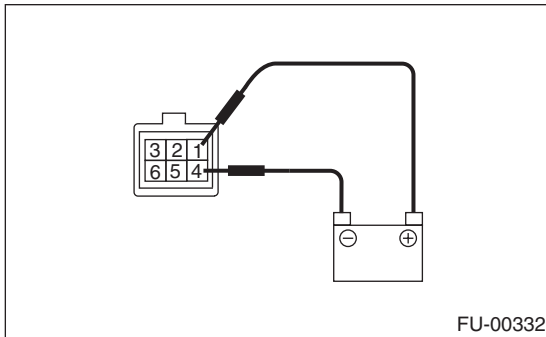


C: INSPECTION

Connect the lead harness to the connector terminal of fuel pump, and apply the battery power supply to check whether the pump operates.

WARNING:

- Wipe off fuel completely.
- Keep the battery as far apart from fuel pump as possible.
- Be sure to perform the ON/OFF operation on the battery side.
- Do not run the fuel pump for a long time under non-load condition.



27. Fuel Level Sensor

A: REMOVAL

WARNING:

Place "NO OPEN FLAMES" signs near the working area.

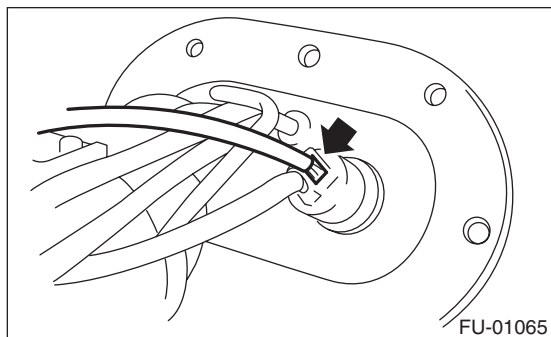
CAUTION:

Be careful not to spill fuel.

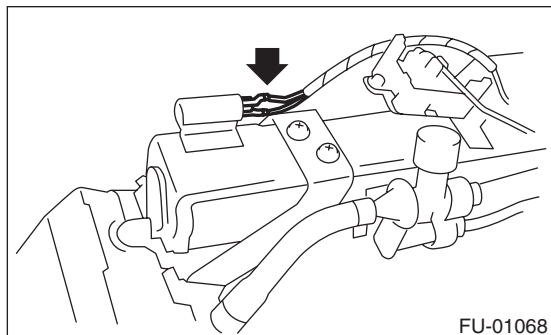
NOTE:

The fuel level sensor is built in fuel pump assembly.

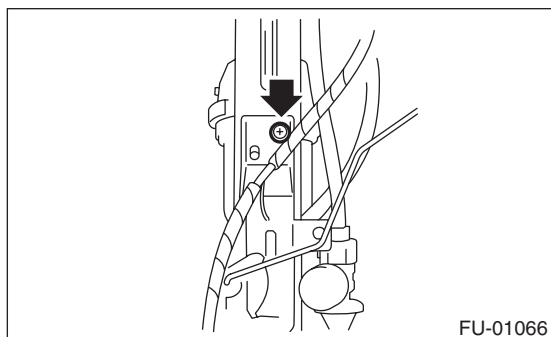
- 1) Remove the fuel pump assembly. <Ref. to FU(H4DOTC)-63, REMOVAL, Fuel Pump.>
- 2) Disconnect the connector from fuel pump bracket.



- 3) Remove the fuel temperature sensor.



- 4) Remove the bolts which attach the fuel level sensor onto the mounting bracket.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

1.4 N·m (0.14 kgf-m, 1.03 ft-lb)

28. Fuel Sub Level Sensor

A: REMOVAL

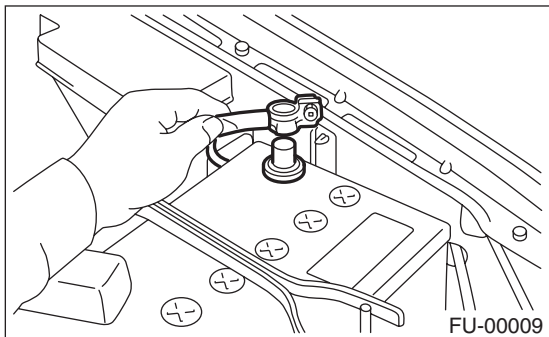
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

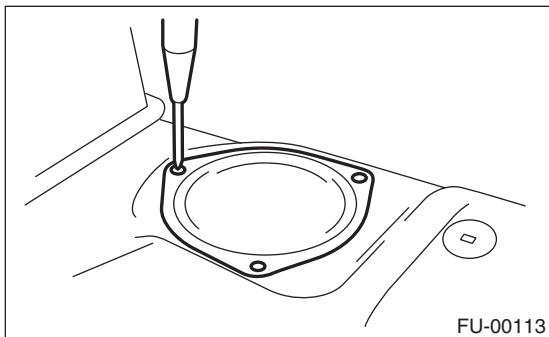
CAUTION:

Be careful not to spill fuel.

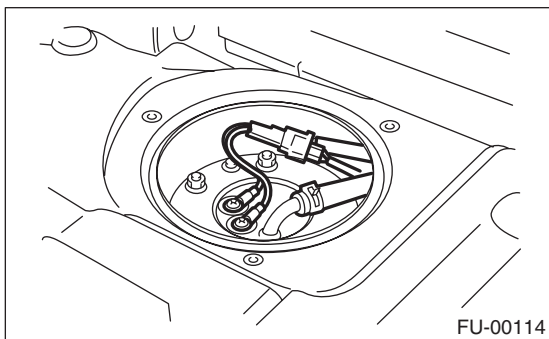
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from the battery.



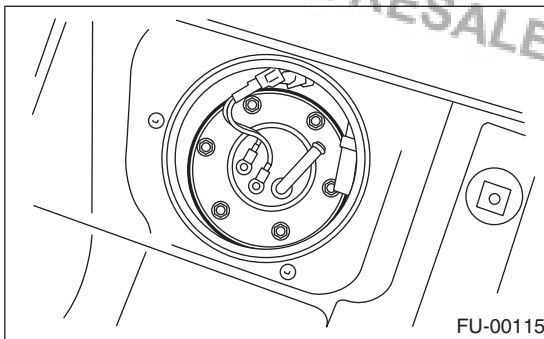
- 3) Lift up the vehicle.
- 4) Drain the fuel tank. <Ref. to FU(H4DOTC)-55, DRAINING FUEL, PROCEDURE, Fuel.>
- 5) Remove the trunk room mat. (Sedan model)
- 6) Remove the luggage floor mat. (Wagon model) <Ref. to EI-61, REMOVAL, Luggage Floor Mat.>
- 7) Remove the service hole cover.



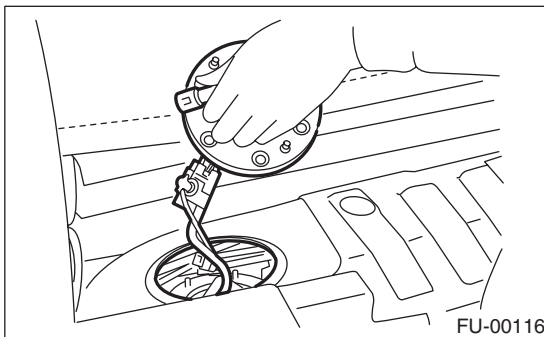
- 8) Disconnect the connector from the fuel sub level sensor.
- 9) Disconnect the fuel jet pump hose.



- 10) Remove the bolts which install fuel sub level sensor on fuel tank.



- 11) Remove the fuel sub level sensor.



B: INSTALLATION

Install in the reverse order of removal while being careful of the following.

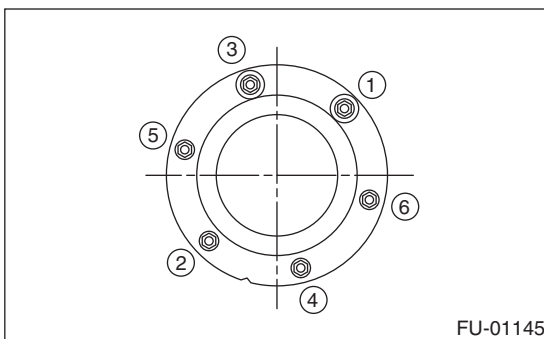
- Make sure the sealing portion is free from fuel or foreign matter before installation.
- Tighten the nuts to the specified torque in the order as shown in the figure.

NOTE:

Use a new gasket.

Tightening torque:

4.4 N·m (0.45 kgf·m, 3.3 ft·lb)



29. Fuel Filter

A: REMOVAL

WARNING:

Place “NO OPEN FLAMES” signs near the working area.

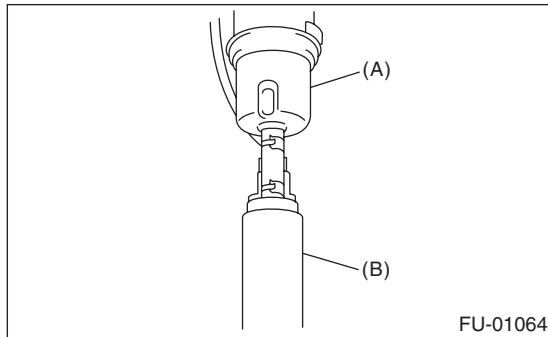
CAUTION:

Be careful not to spill fuel.

NOTE:

The fuel filter is built in the fuel pump assembly.

- 1) Remove the fuel pump assembly. <Ref. to FU(H4DOTC)-63, REMOVAL, Fuel Pump.>
- 2) Separate the fuel pump and fuel filter.



- (A) Fuel filter
(B) Fuel pump

B: INSTALLATION

CAUTION:

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

Install in the reverse order of removal.

C: INSPECTION

- 1) Pour the fuel remaining in the fuel filter into a container, and check it for dirt, water and sediment.
- 2) If it is clogged, or if the replacement interval has been reached, replace it.

30. Fuel Cut Valve

A: REMOVAL

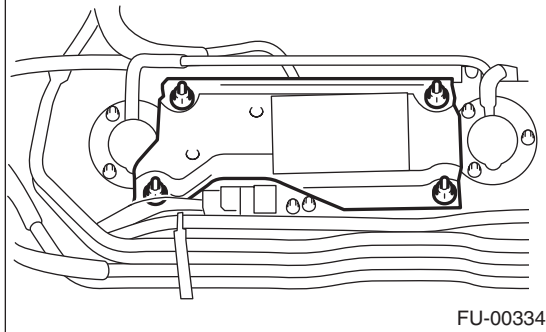
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

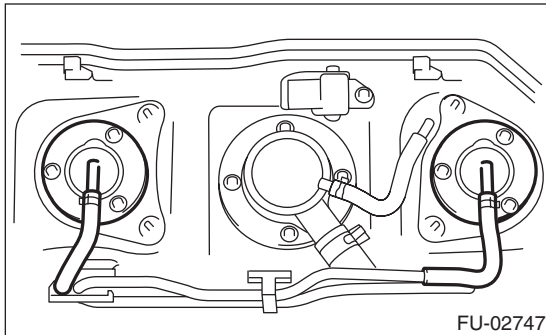
CAUTION:

Be careful not to spill fuel.

- 1) Remove the fuel tank. <Ref. to FU(H4DOTC)-56, REMOVAL, Fuel Tank.>
- 2) Remove the protect cover.



- 3) Move the clip and disconnect the evaporation hose from the fuel cut valve.



- 4) Remove the nut which installs the fuel cut valve.

B: INSTALLATION

Install in the reverse order of removal while being careful of the following.

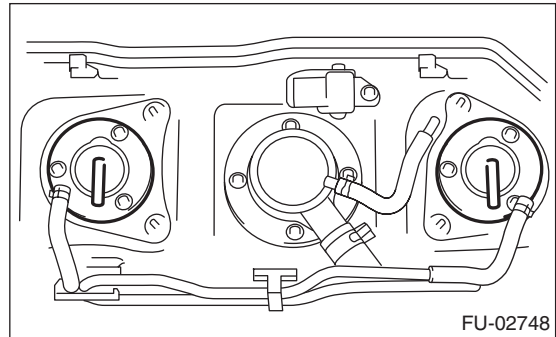
- Make sure the sealing portion is free from fuel or foreign matter before installation.

NOTE:

Use a new gasket.

Tightening torque:

4.4 N·m (0.45 kgf-m, 3.3 ft-lb)



31. Fuel Damper Valve

A: REMOVAL

WARNING:

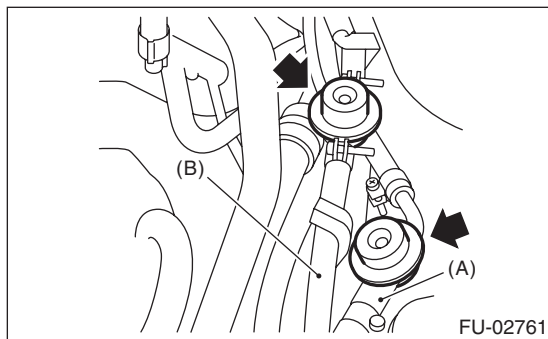
Place "NO OPEN FLAMES" signs near the working area.

CAUTION:

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

1) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>

2) Remove the fuel damper valve from the fuel delivery line (A) and the fuel return line (B).



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

Tightening torque:

1.25 N·m (0.13 kgf-m, 0.94 ft-lb)

Fuel Delivery, Return and Evaporation Lines

FUEL INJECTION (FUEL SYSTEMS)

32. Fuel Delivery, Return and Evaporation Lines

A: REMOVAL

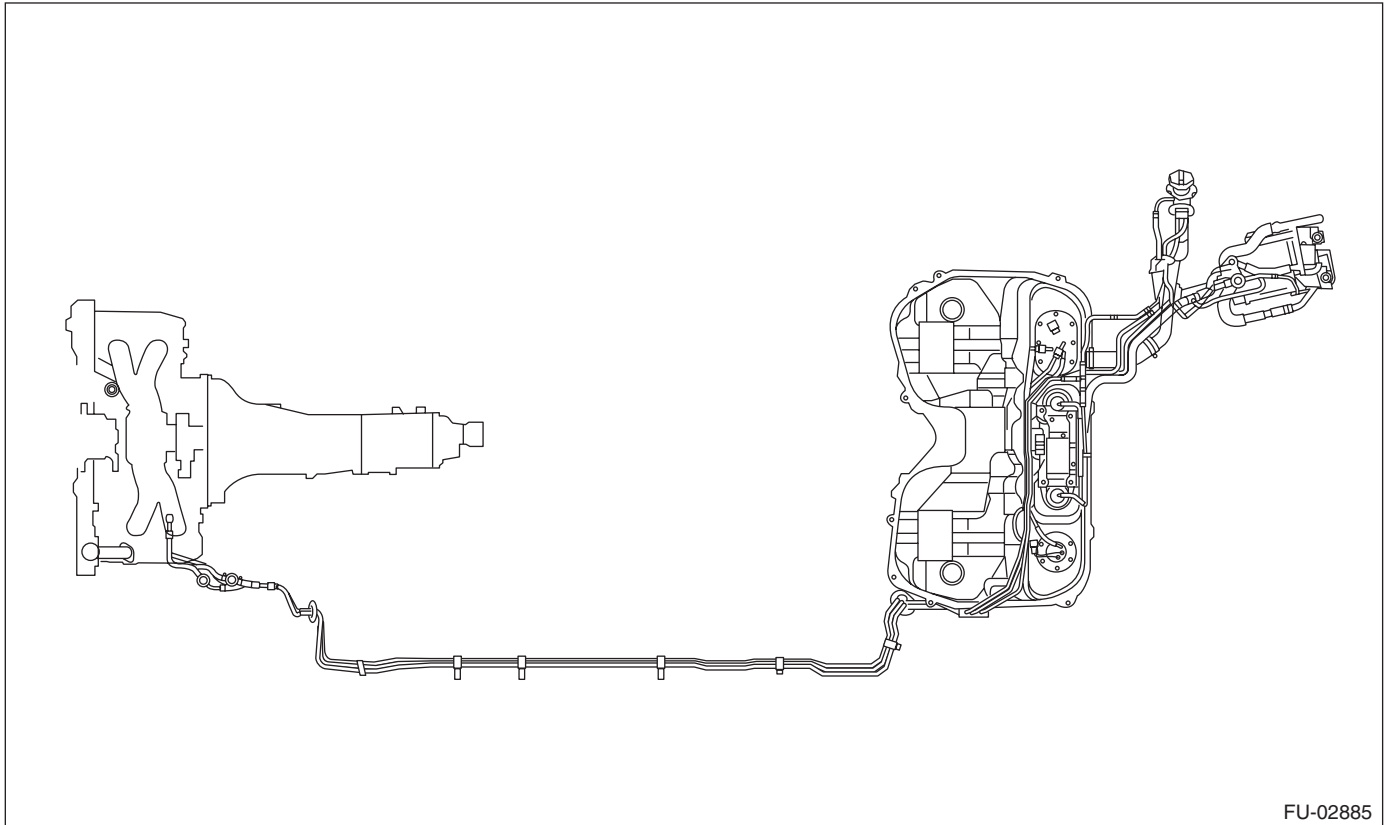
WARNING:

Place "NO OPEN FLAMES" signs near the working area.

CAUTION:

Be careful not to spill fuel.

- 1) Set the vehicle on a lift.
- 2) Release the fuel pressure. <Ref. to FU(H4DOTC)-55, RELEASING OF FUEL PRESSURE, PROCEDURE, Fuel.>
- 3) Open the fuel filler flap lid, and remove the fuel filler cap.
- 4) Remove the floor mat. <Ref. to EI-60, REMOVAL, Floor Mat.>
- 5) Disconnect the fuel delivery pipes and hoses, and then disconnect the fuel return pipes and hoses, evaporation pipes and hoses.



FU-02885

Fuel Delivery, Return and Evaporation Lines

FUEL INJECTION (FUEL SYSTEMS)

6) In the engine compartment, disconnect the fuel delivery hose, return hose and evaporation hose.

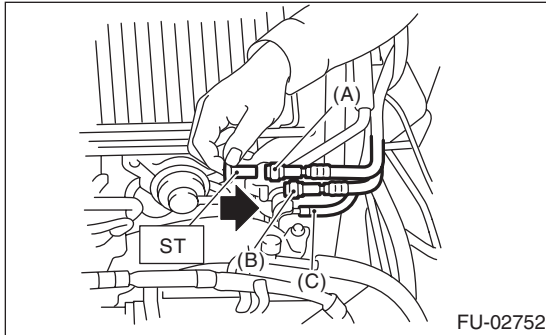
(1) Disconnect the quick connector on the fuel delivery line and return line by pushing the ST in the direction of the arrow.

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.



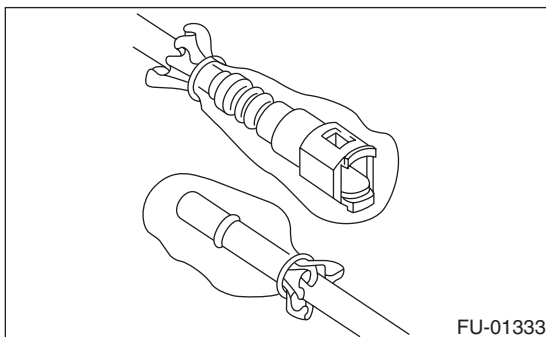
- (A) Fuel delivery hose
- (B) Return hose
- (C) Evaporation hose

7) Lift up the vehicle.

8) Disconnect the quick connector on the fuel line.

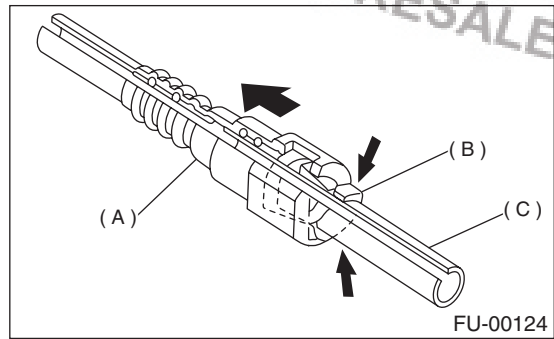
(1) Clean the pipe and connector, if they are covered with dust.

(2) To prevent from damaging or entering foreign matter, wrap the pipes and connectors with plastic bag etc.



(3) Hold the connector (A) and push the retainer (B) down.

(4) Pull out the connector (A) from the retainer (B).



- (A) Connector
- (B) Retainer
- (C) Pipe

B: INSTALLATION

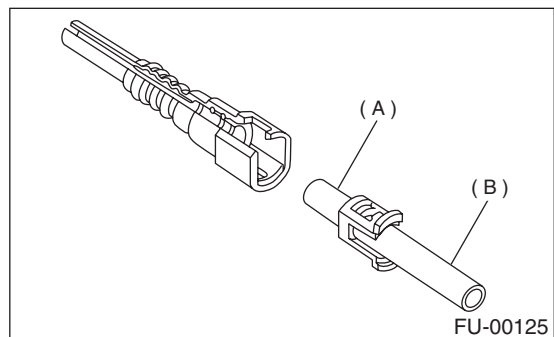
1) Connect the quick connector on fuel line.

CAUTION:

Make sure there is no damage or dust on the connections. If necessary, clean seal surface of pipe.

NOTE:

Use a new retainer.

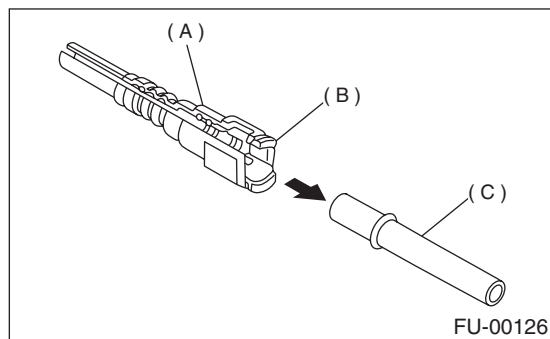


- (A) Seal surface
- (B) Pipe

Fuel Delivery, Return and Evaporation Lines

FUEL INJECTION (FUEL SYSTEMS)

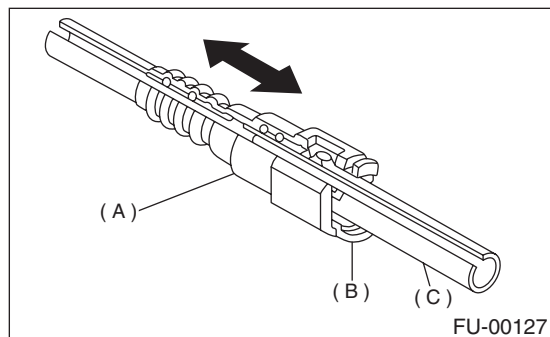
- (1) Set the new retainer (B) to connector (A).
- (2) Push the pipe into the connector completely.



- (A) Connector
- (B) Retainer
- (C) Pipe

CAUTION:

- Pull the connector to ensure it is connected securely.
- Make sure the two retainer pawls are engaged in their mating positions in the connector.
- Be sure to inspect hoses and their connections for any leakage of fuel.



- (A) Connector
- (B) Retainer
- (C) Pipe

- 2) Connect the fuel delivery hose and return hose to the pipe with an overlap of 20 to 25 mm (0.79 to 0.98 in).

Type A: When the amount to be inserted is specified.

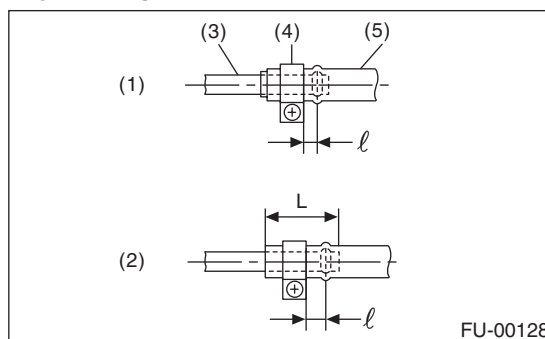
Type B: When the amount to be inserted is not specified.

$\varnothing : 2.5 \pm 1.5 \text{ mm } (0.098 \pm 0.059 \text{ in})$

$L : 22.5 \pm 2.5 \text{ mm } (0.886 \pm 0.098 \text{ in})$

CAUTION:

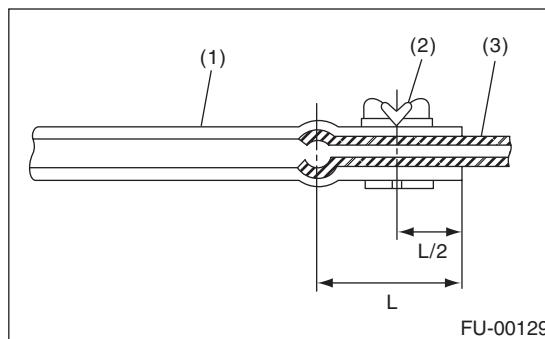
Be sure to inspect hoses and their connections for any leakage of fuel.



- (1) Type A
- (2) Type B
- (3) Pipe
- (4) Clamp
- (5) Hose

- 3) Connect the evaporation hose to the pipe with an overlap of 15 to 20 mm (0.59 to 0.79 in).

$L = 17.5 \pm 2.5 \text{ mm } (0.689 \pm 0.098 \text{ in})$



- (1) Hose
- (2) Clip
- (3) Pipe

C: INSPECTION

- 1) Make sure that there are no cracks on the fuel pipes and fuel hoses.
- 2) Check that the fuel pipe and fuel hose connections are connected securely.

Fuel System Trouble in General

FUEL INJECTION (FUEL SYSTEMS)

33. Fuel System Trouble in General

A: INSPECTION

Trouble and possible cause		Corrective action
1. Insufficient fuel supply to injector		
1)	Fuel pump does not operate.	
	○ Defective terminal contact	Inspect contact, especially ground, and tighten it securely.
	○ Trouble in electromagnetic or electronic circuit parts	Replace the faulty parts.
2)	Decline of fuel pump function	Replace the fuel pump.
3)	Clogged fuel filter	Replace the fuel filter.
4)	Clogged or bent fuel pipe or hose	Clean, correct or replace the fuel pipe or hose.
5)	Air is mixed in the fuel system.	Inspect or retighten each connection part.
6)	Clogged or bent air breather tube or pipe.	Clean, correct or replace the air breather tube or pipe.
7)	Damaged diaphragm of pressure regulator	Replace.
2. Leakage or blow out of fuel		
1)	Loose joints of the fuel pipe	Retighten.
2)	Cracked fuel pipe, hose and fuel tank	Replace.
3)	Defective welding part on the fuel tank	Replace.
4)	Defective drain gasket of the fuel tank	Replace.
5)	Clogged or bent air breather tube or air vent tube	Clean, correct or replace the air breather tube or air vent tube.
3. Gasoline smell inside of compartment		
1)	Loose joints at air breather tube, air vent tube and fuel filler pipe	Retighten.
2)	Problem in tightness of the fuel saucer gasket air	Correct or replace the gasket.
3)	Fuel pump trouble	Replace.
4. Defective fuel meter indicator		
1)	Defective operation of fuel level sensor	Replace.
2)	Defective operation of fuel meter	Replace.
5. Noise		
1)	Large operation noise or vibration of fuel pump	Replace.

NOTE:

- When the vehicle is left unattended for an extended period of time, water may accumulate in the fuel tank. Fully fill the fuel tank to prevent the problem.
- In snow-covered areas, mountainous areas, skiing areas, etc. where ambient temperatures drop below 0°C (32°F) throughout the winter season, use a water removing agent in the fuel system to prevent freezing fuel system and accumulating water.
- When water is accumulated in fuel filter, fill the water removing agent in the fuel tank.
- Before using water removing agent, follow the cautions noted on the bottle.

Fuel System Trouble in General

FUEL INJECTION (FUEL SYSTEMS)

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