SUPPLEMENT FOR 6 CYLINDER ENGINE MODEL

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.
This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.
Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUJI HEAVY INDUSTRIES LTD.

G2281GE

SUPPLEMENT FOR 6 CYLINDER ENGINE MODEL

FUEL INJECTION (FUEL SYSTEMS)

FU(H6)

1. General Description S145001

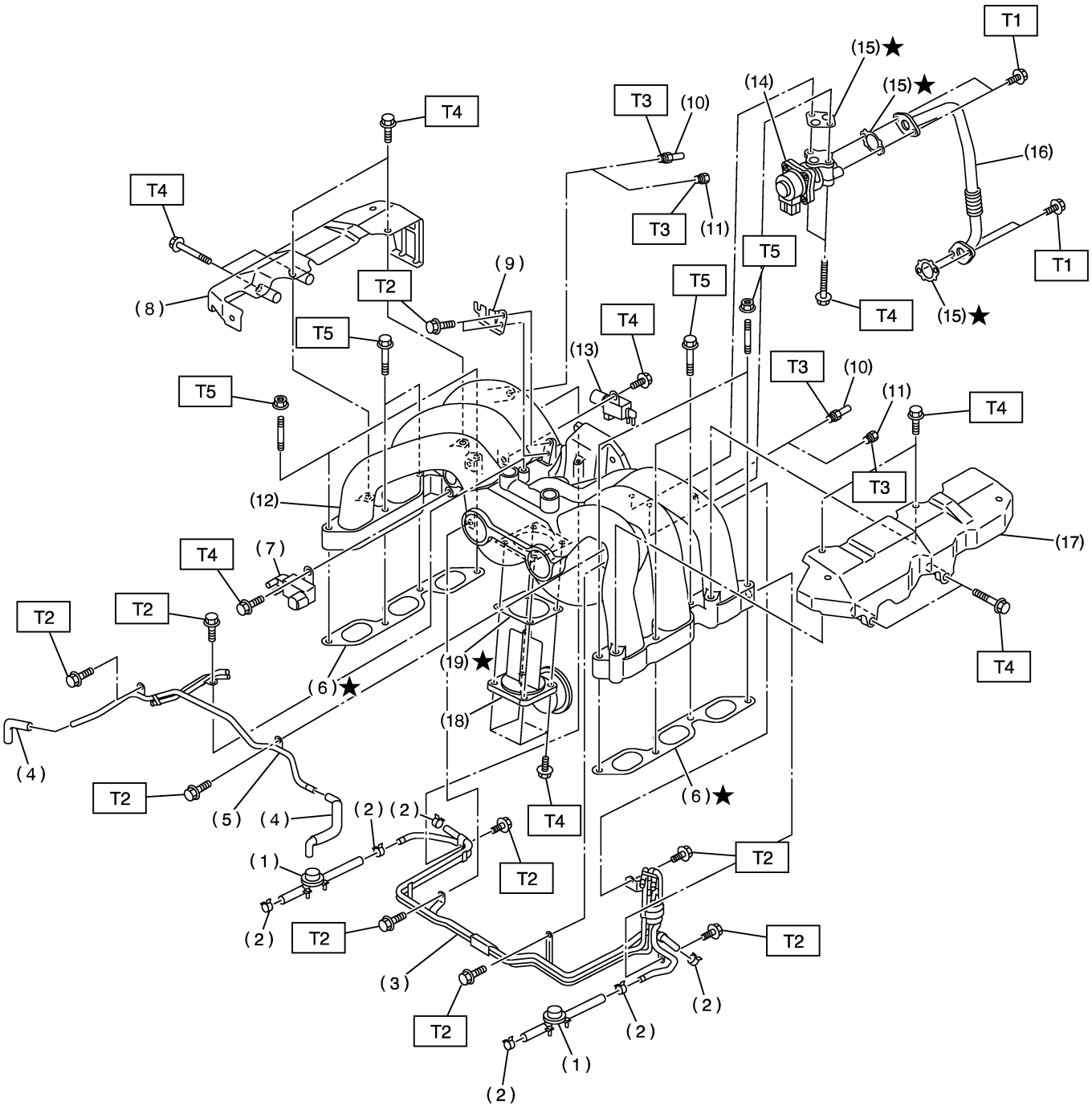
A: SPECIFICATIONS S145001E49

Model		
Fuel tank	Capacity	64 ℓ (16.9 US gal, 14.1 Imp gal)
	Location	Under rear seat
Fuel pump	Type	Impeller
	Shutoff discharge pressure	370 — 677 kPa (3.77 — 6.9 kg/cm^2, 53.6 — 98 psi)
	Discharge flow	More than 65 ℓ (17.2 US gal, 14.3 Imp gal)/h [12 V at 300 kPa (3.06 kg/cm^2, 43.5 psi)]
Fuel filter		Cartridge type

MEMO:

B: COMPONENT S145001A05

1. INTAKE MANIFOLD S145001A0501

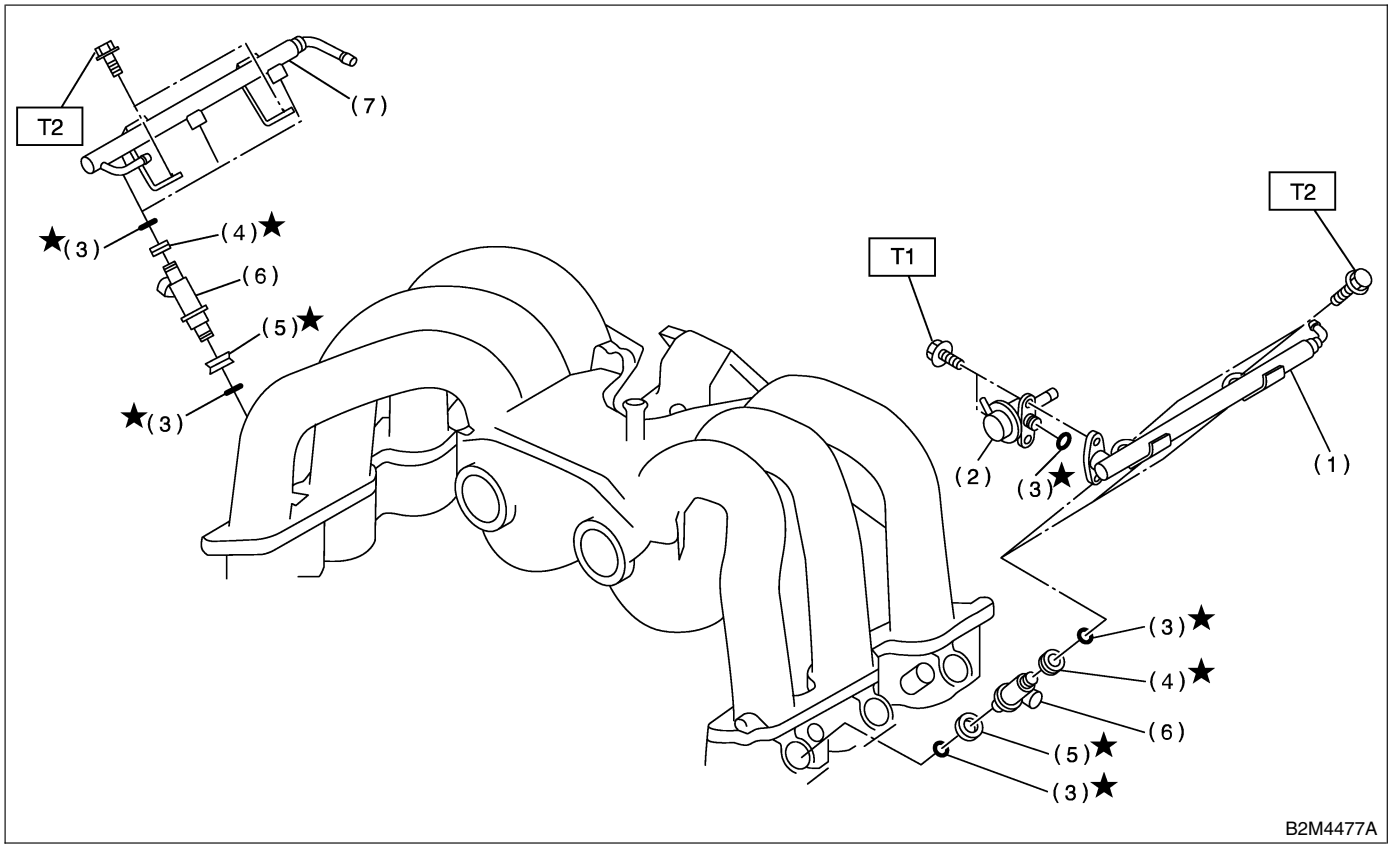


B2M4476A

(1) Fuel damper valve
(2) Clamp
(3) Fuel pipe ASSY
(4) Air assist hose
(5) Air assist and purge pipe ASSY
(6) Gasket
(7) Purge control solenoid valve
(8) Fuel pipe protector RH
(9) Accelerator cable bracket
(10) Nipple
(11) Plug
(12) Intake manifold
(13) Induction valve control solenoid
(14) EGR valve
(15) Gasket
(16) EGR pipe
(17) Fuel pipe protector LH
(18) Induction valve
(19) Gasket

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 5.0 (0.51, 3.7)
T3: 17 (1.7, 12)
T4: 19 (1.9, 14)
T5: 25 (2.5, 18)

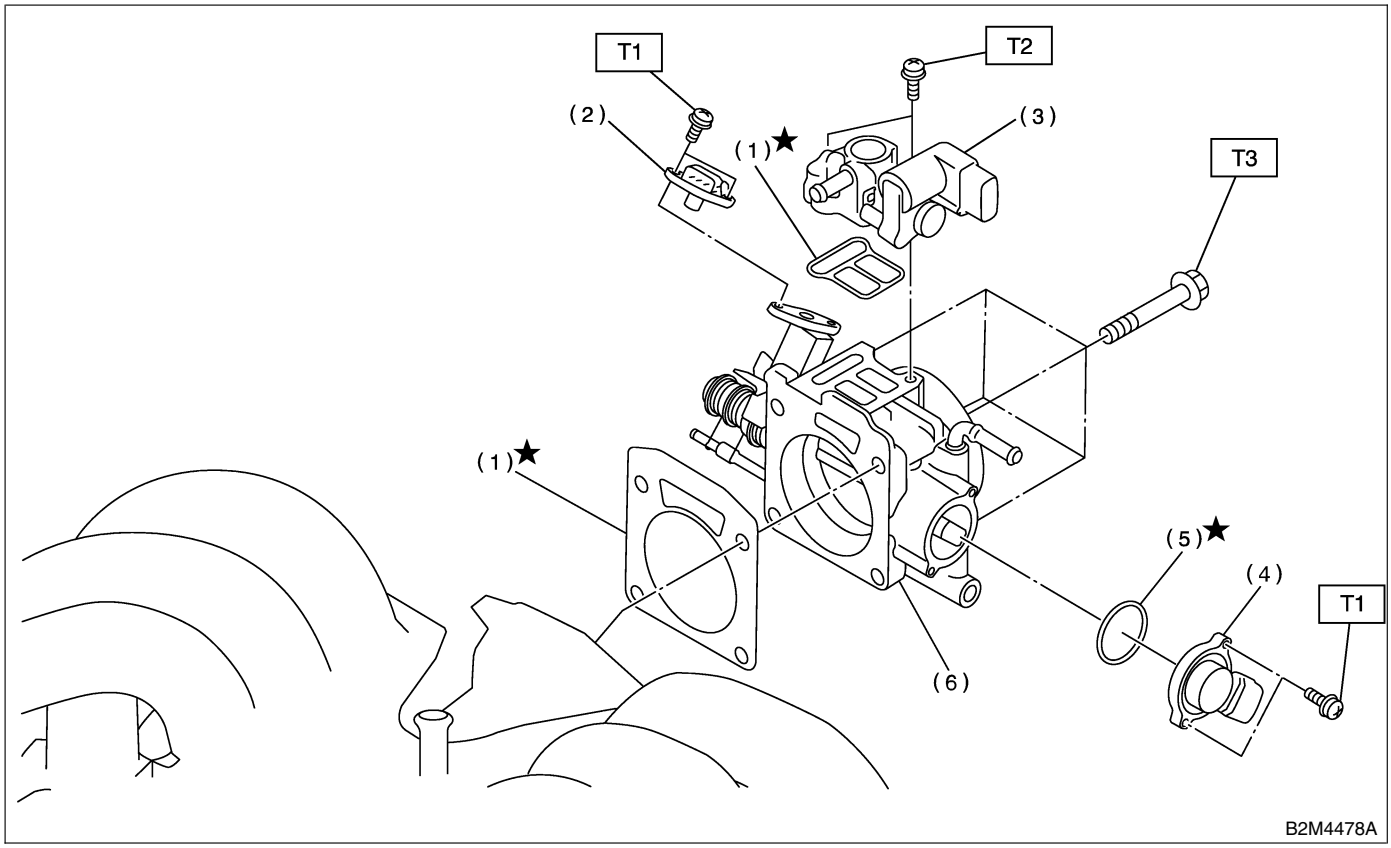
2. FUEL INJECTOR S145001A0502



(1) Fuel injector pipe LH
(2) Pressure regulator
(3) O-ring
(4) Injection rubber
(5) Insulator
(6) Fuel injector
(7) Fuel injector pipe RH

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 19 (1.9, 14)

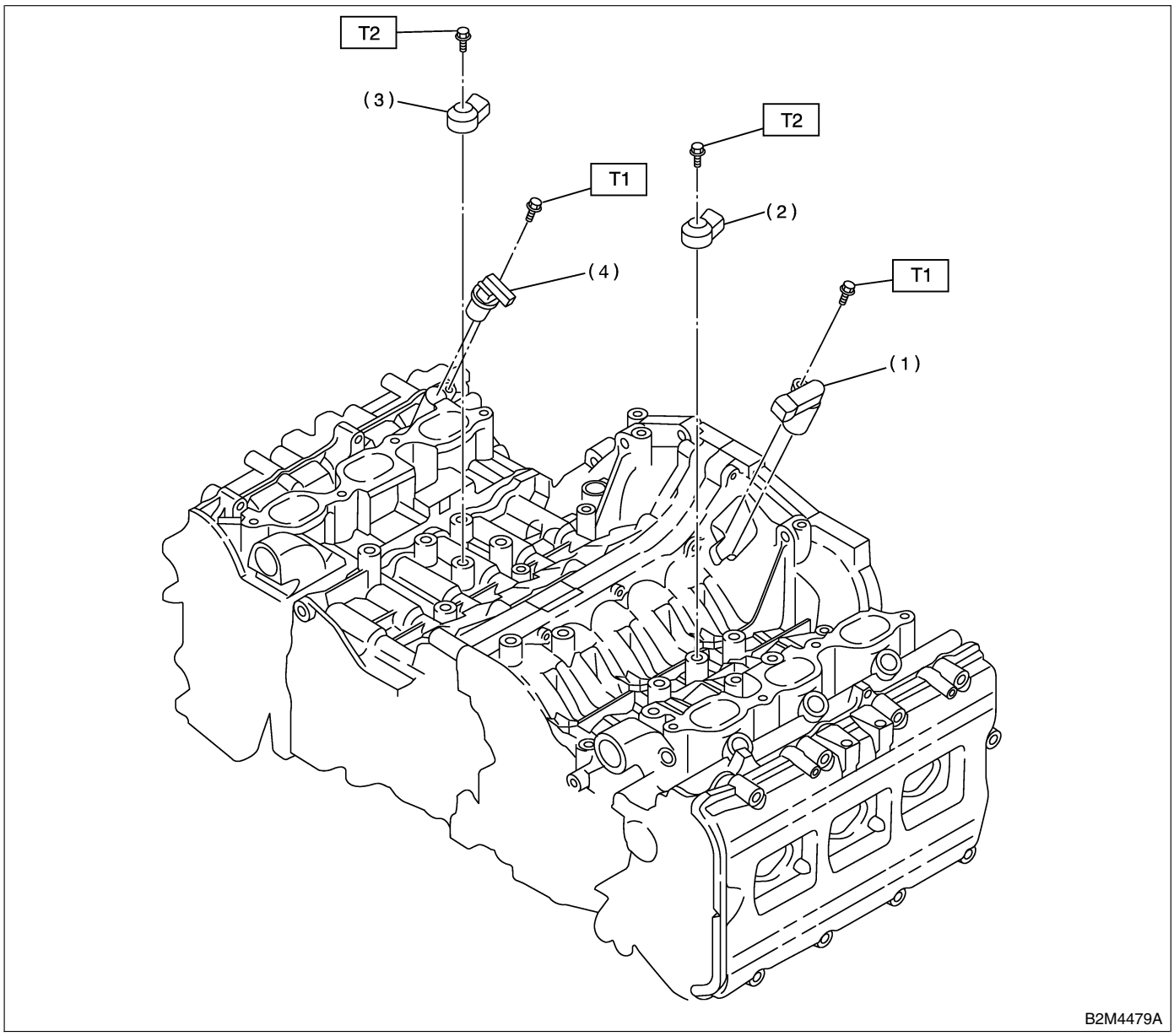
3. AIR INTAKE SYSTEM S145001A0503



(1) Gasket
(2) Intake manifold pressure sensor
(3) Idle air control solenoid valve
(4) Throttle position sensor
(5) O-ring
(6) Throttle body

Tightening torque: N·m (kgf-m, ft-lb)
T1: 1.6 (0.16, 1.2)
T2: 2.8 (0.29, 2.1)
T3: 22 (2.2, 15.9)

4. CRANKSHAFT POSITION, CAMSHAFT POSITION AND KNOCK SENSORS S145001A0504

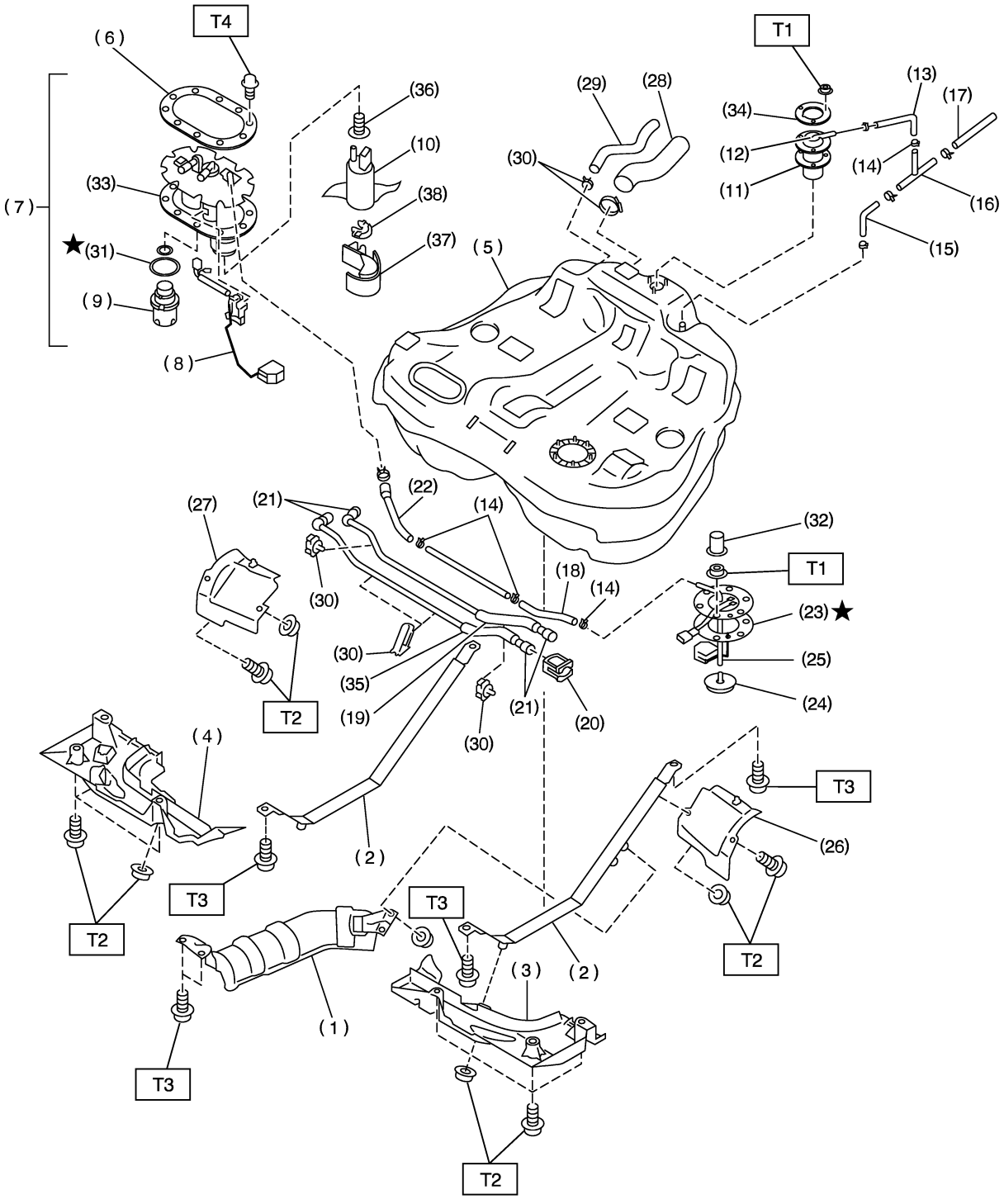


(1) Crankshaft position sensor
(2) Knock sensor LH
(3) Knock sensor RH
(4) Camshaft position sensor

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 25 (2.5, 18)

MEMO:

5. FUEL TANK S145001A0505

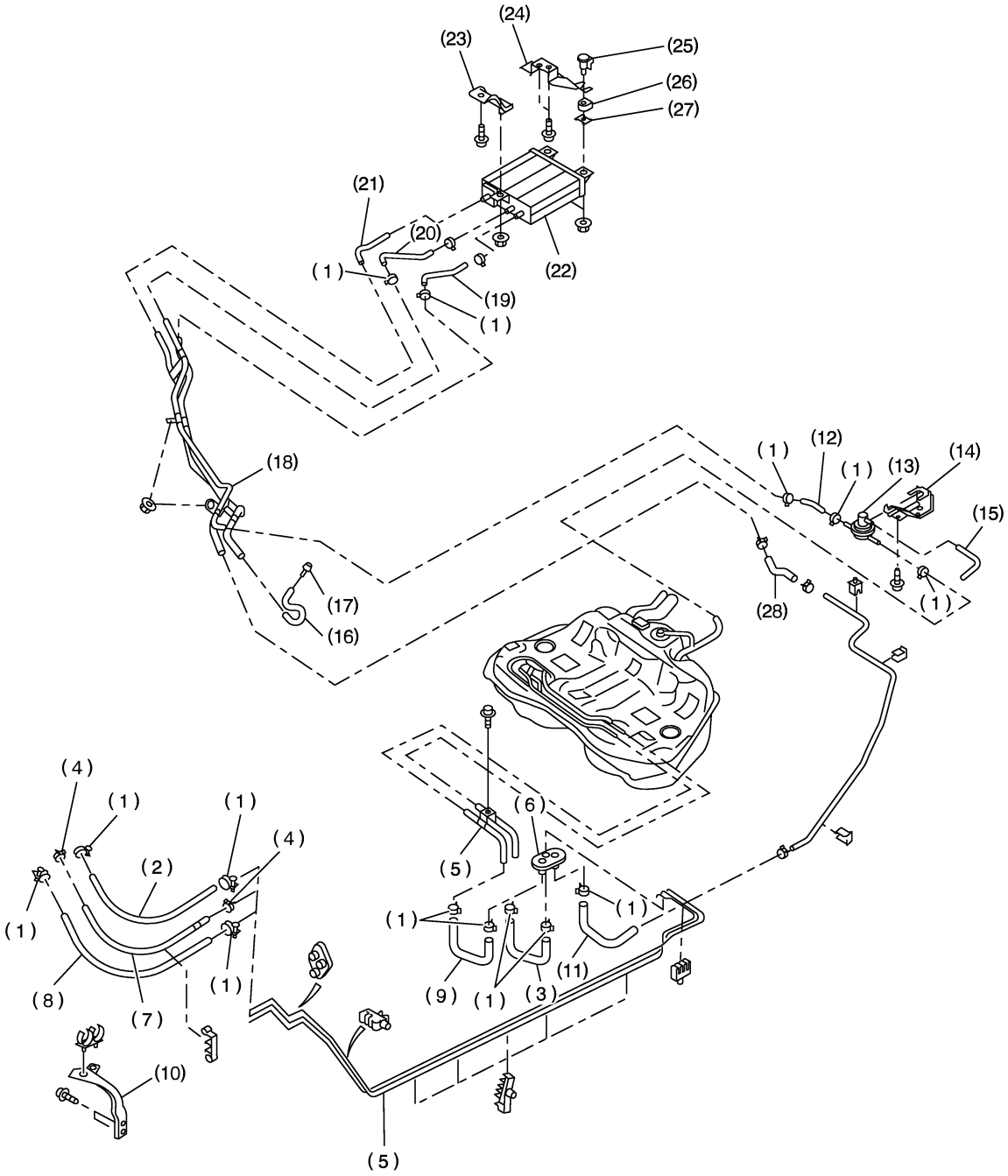


B2M3837A

(1) Heat sealed cover
(2) Fuel tank band
(3) Protector LH (Front)
(4) Protector RH (Front)
(5) Fuel tank
(6) Fuel pump plate
(7) Fuel pump ASSY
(8) Fuel level sensor
(9) Fuel filter
(10) Fuel pump with filter
(11) Fuel cut valve gasket
(12) Fuel cut valve
(13) Evaporation hose A
(14) Clip
(15) Evaporation hose C
(16) Joint pipe
(17) Evaporation hose B
(18) Jet pump hose A
(19) Fuel return tube
(20) Retainer
(21) Quick connector
(22) Jet pump hose B
(23) Fuel sub level sensor gasket
(24) Jet pump filter
(25) Fuel sub level sensor
(26) Protector LH (Rear)
(27) Protector RH (Rear)
(28) Fuel filler hose
(29) Air vent hose
(30) Clamp
(31) Gasket
(32) Cap
(33) Gasket
(34) Fuel cut valve plate
(35) Fuel delivery tube
(36) Seal
(37) Fuel pump holder
(38) Grommet

Tightening torque: N·m (kgf-m, ft-lb)
T1: 4.4 (0.45, 3.3)
T2: 18 (1.8, 13.0)
T3: 33 (3.4, 25)
T4: 5.9 (0.6, 4.3)

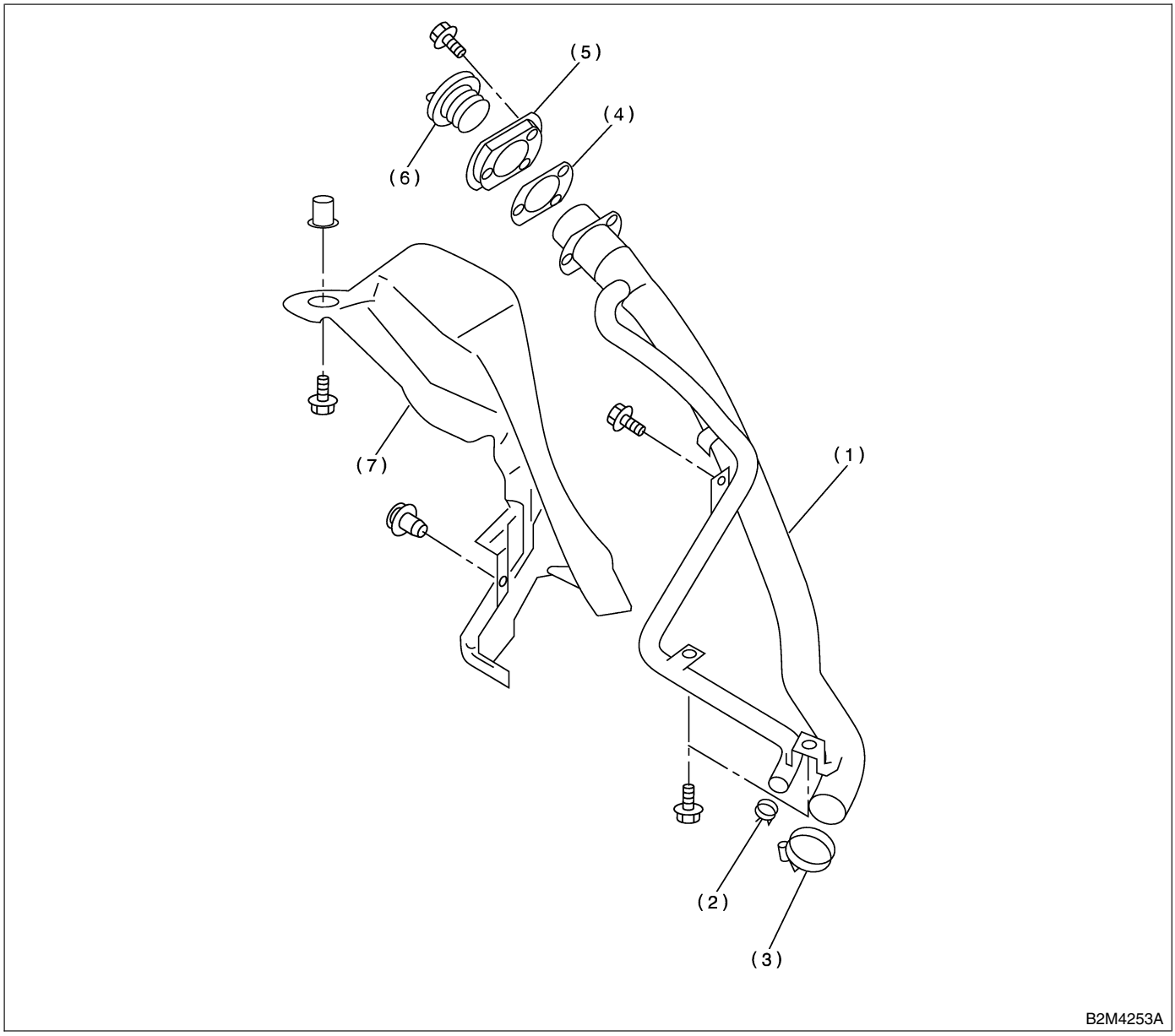
6. FUEL LINE S145001A0506



B2M4585A

(1) Clamp
(2) Fuel return hose A
(3) Fuel return hose B
(4) Clip
(5) Fuel pipe ASSY
(6) Grommet
(7) Evaporation hose A
(8) Fuel delivery hose A
(9) Fuel delivery hose B
(10) Bracket
(11) Evaporation hose B
(12) Two-way valve hose
(13) Two-way valve
(14) Two-way valve bracket
(15) Two-way valve drain hose
(16) Drain hose
(17) Fuel pipe connector
(18) Evaporation pipe ASSY
(19) Purge hose
(20) Evaporation hose C
(21) Canister drain hose
(22) Canister
(23) Front canister bracket
(24) Rear canister bracket
(25) Canister bracket spacer
(26) Cushion
(27) Canister bracket plate
(28) Evaporation hose D

7. FUEL FILLER PIPE S145001A0507

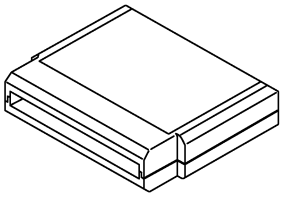


(1) Fuel filler pipe ASSY
(2) Clip
(3) Clamp
(4) Filler pipe packing
(5) Filler ring
(6) Filler cap
(7) Filler pipe protector

C: CAUTION S145001A03

- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Be careful not to burn your hands, because each part on the vehicle is hot after running.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or safety stands at the specified points.
- Before disconnecting electrical connectors of sensors or units, be sure to disconnect negative terminal from battery.
- Place “NO FIRE” signs near the working area.
- Be careful not to spill fuel on the floor.

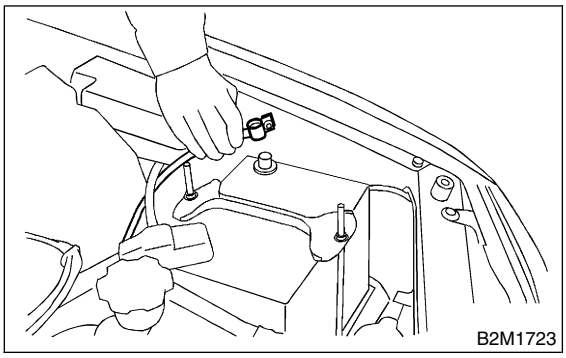
D: PREPARATION TOOL S145001A17

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 B2M3876	24082AA150 (Newly adopted tool)	CARTRIDGE	Troubleshooting for electrical systems.
 B2M3877	22771AA030	SELECT MONITOR KIT	Troubleshooting for electrical systems. • English: 22771AA030 (Without printer) • German: 22771AA070 (Without printer) • French: 22771AA080 (Without printer) • Spanish: 22771AA090 (Without printer)

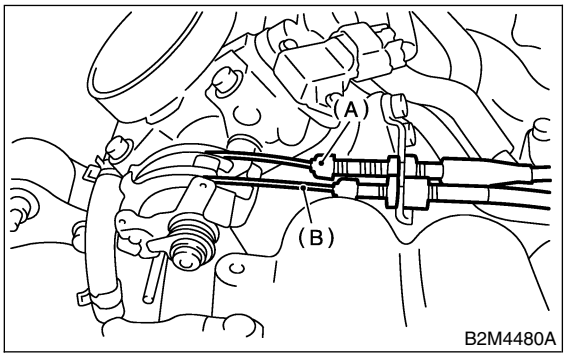
2. Throttle Body S145010

A: REMOVAL S145010A18

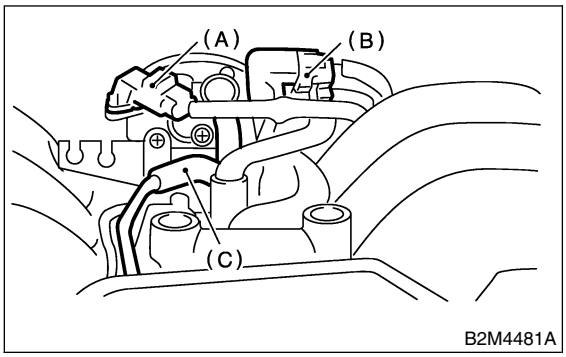
1) Disconnect battery ground cable.



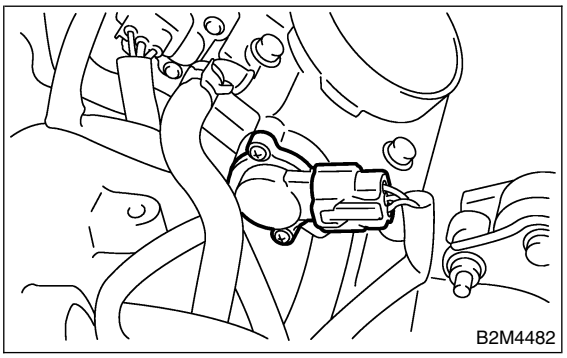
2) Remove air intake chamber. <Ref. to IN(H6)-6, REMOVAL, Air Intake Chamber.>
3) Disconnect accelerator cable (A).
4) Disconnect cruise control cable (B). (With cruise control model)



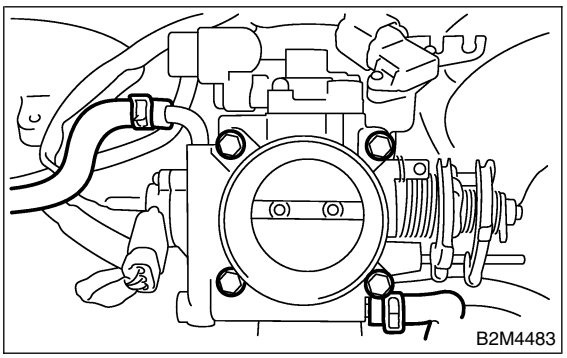
5) Disconnect connectors from intake manifold pressure sensor (A) and idle air control solenoid valve (B).
6) Disconnect air by-pass hose (C) from idle air control solenoid valve.



7) Disconnect throttle position sensor connector.



8) Disconnect engine coolant hoses from throttle body.
9) Remove bolts which secure throttle body to intake manifold.



B: INSTALLATION S145010A11

Install in the reverse order of removal.

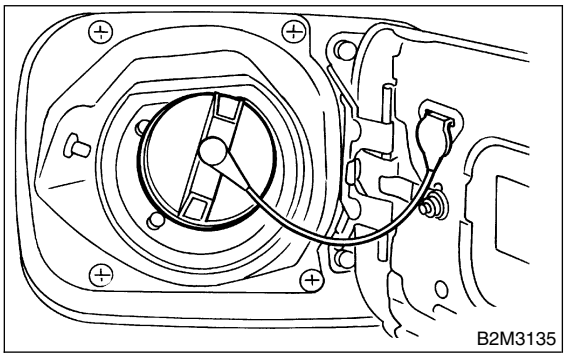
CAUTION:
Always use a new gasket.

Tightening torque:
Throttle body;
22 N·m (2.2 kgf-m, 15.9 ft-lb)

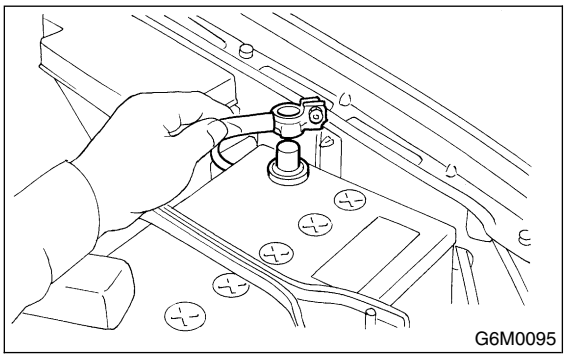
3. Intake Manifold S145034

A: REMOVAL S145034A18

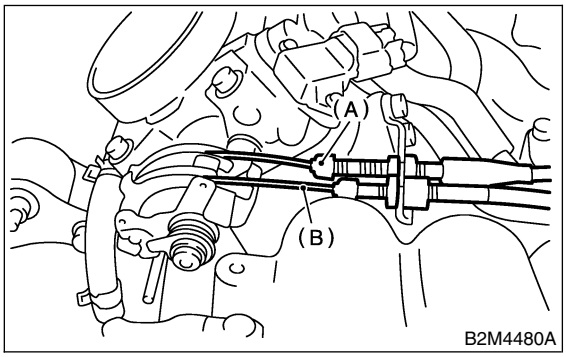
1) Release fuel pressure. <Ref. to FU(H6)-49, RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
2) Open fuel flap lid, and remove fuel filler cap.


B2M3135

3) Disconnect battery ground cable.

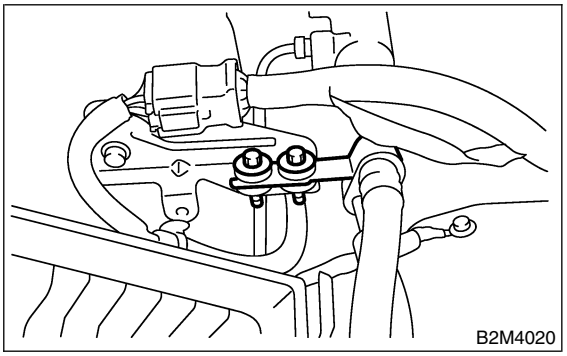

G6M0095

4) Remove air intake duct, air cleaner assembly and air intake chamber. <Ref. to IN(H6)-7, REMOVAL, Air Intake Duct.> and <Ref. to IN(H6)-5, REMOVAL, Air Cleaner.> and <Ref. to IN(H6)-6, REMOVAL, Air Intake Chamber.>
5) Disconnect accelerator cable (A).
6) Disconnect cruise control cable (B). (With cruise control model)



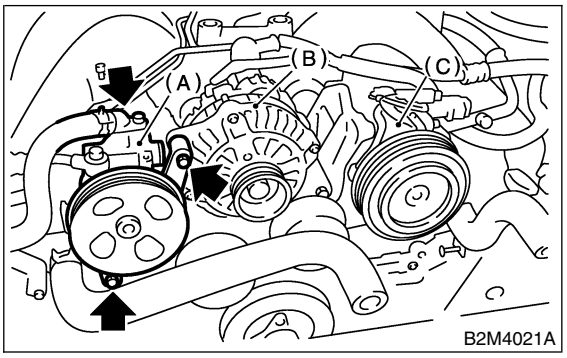
B2M4480A

7) Remove power steering pump and tank from brackets.
(1) Remove V-belt.
<Ref. to ME(H6)-31, REMOVAL, V-belt.>
(2) Remove power steering oil pipe with bracket.


B2M4020

(3) Remove bolts which install power steering pump bracket.

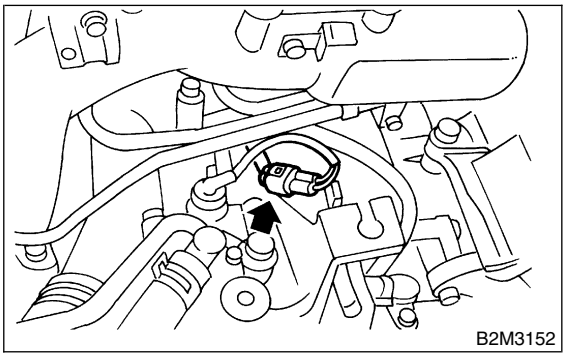
NOTE:
Do not separate hose and pipe from the main pump.



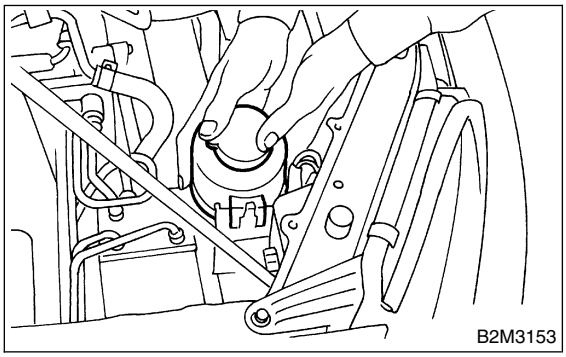
B2M4021A

(A) Power steering pump
(B) Generator
(C) A/C compressor

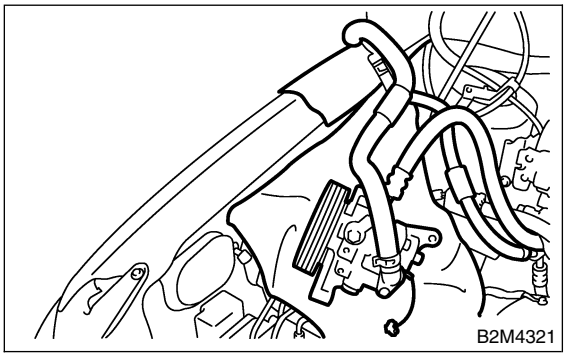
(4) Disconnect power steering pump switch connector.


B2M3152

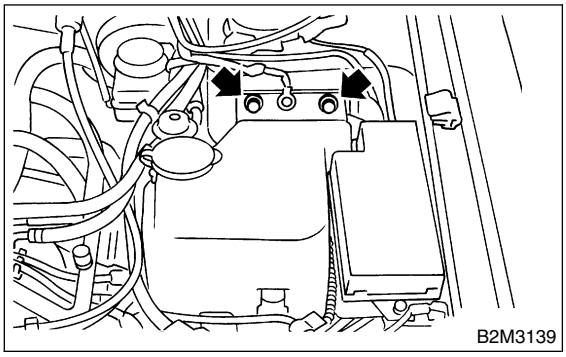
(5) Remove power steering tank from the bracket by pulling it upward.


B2M3153

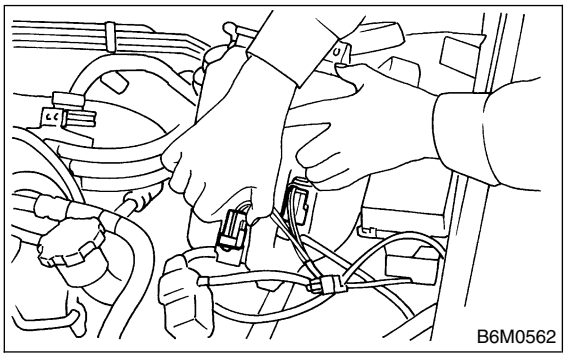
(6) Place power steering pump on the right side wheel apron.


B2M4321

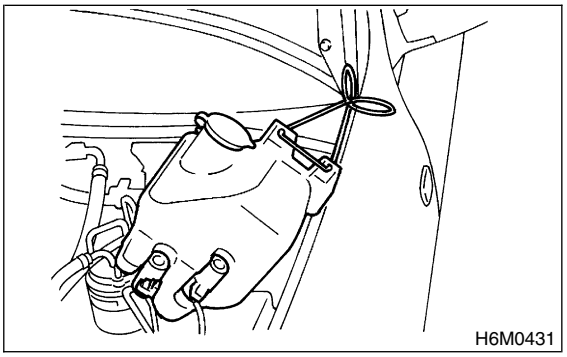
8) Remove two bolts which install washer tank on body.


B2M3139

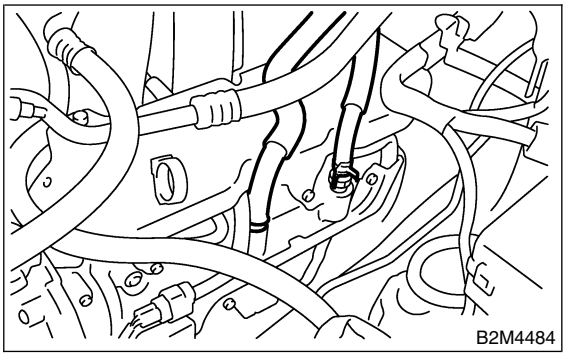
9) Disconnect connector from front window washer motor.
10) Disconnect connector from rear gate glass washer motor.


B6M0562

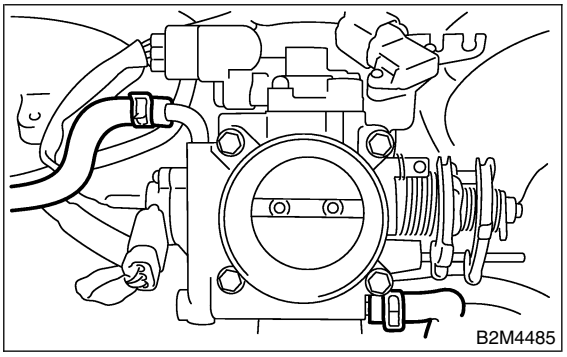
11) Disconnect rear window glass washer hose from washer motor, then plug connection with a suitable cap.
12) Move washer tank upward.


H6M0431

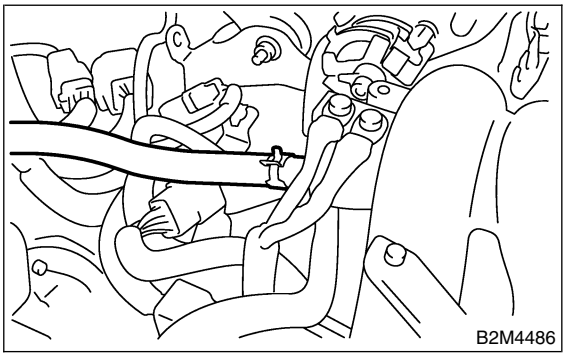
13) Disconnect PCV hoses from cylinder head cover.


B2M4484

14) Disconnect engine coolant hose from throttle body.

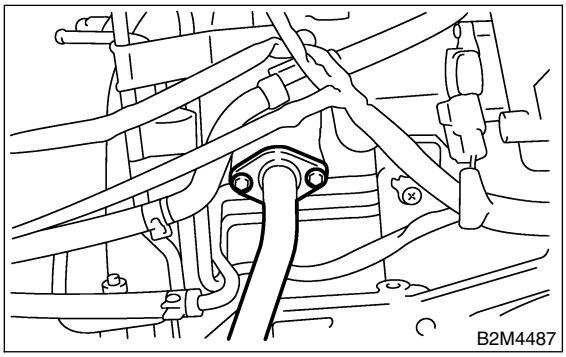

B2M4485

15) Disconnect brake booster hose.

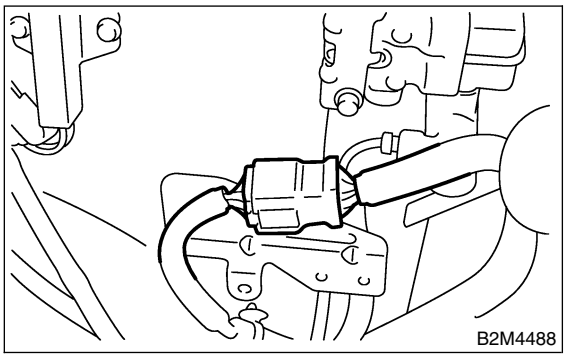

B2M4486

16) Remove EGR pipe from EGR valve.

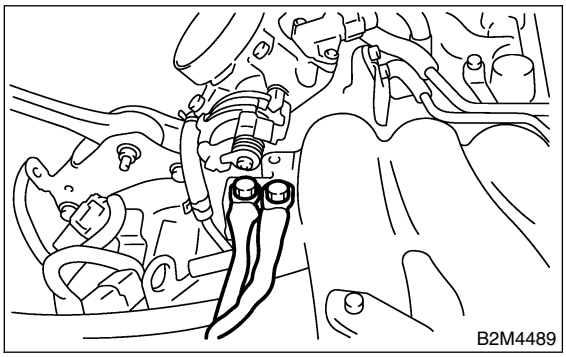
NOTE:
Be careful not to drop gaskets.



17) Disconnect engine harness connectors from bulkhead harness connectors.

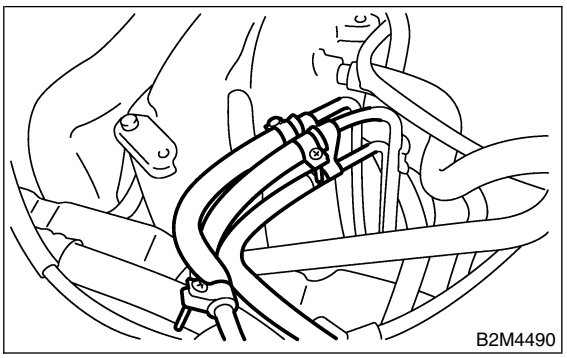


18) Disconnect engine ground terminal from intake manifold.

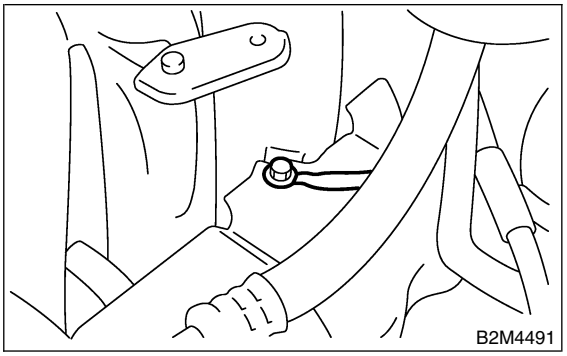


19) Disconnect fuel hoses from fuel pipes.

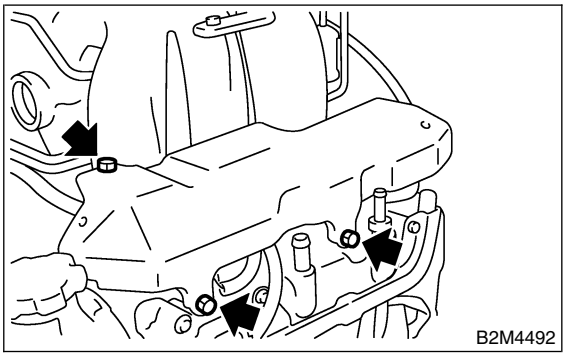
WARNING:
- **Do not spill fuel.**
- **Catch fuel from hoses in a container or cloth.**



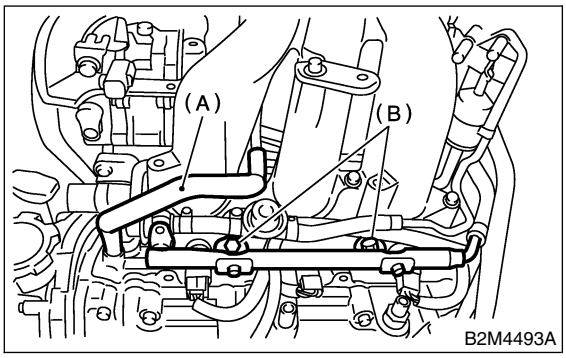
20) Remove ground cable from fuel pipe protector LH.



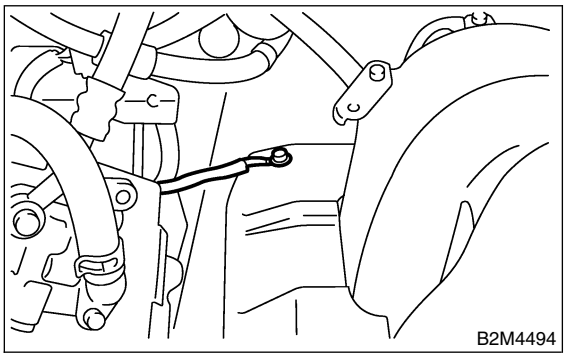
21) Remove fuel pipe protector LH.



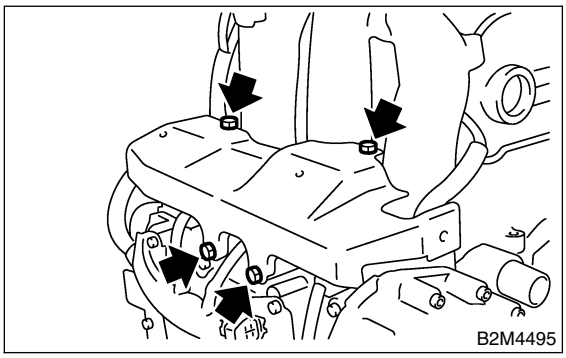
22) Disconnect air assist hose (A).
23) Remove the bolt (B), which holds fuel injector pipe LH onto cylinder head.



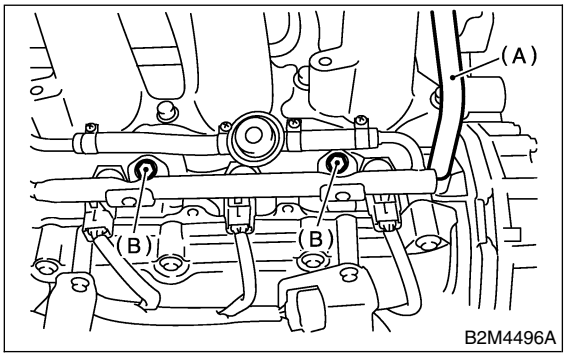
24) Remove ground cable from fuel pipe protector RH.



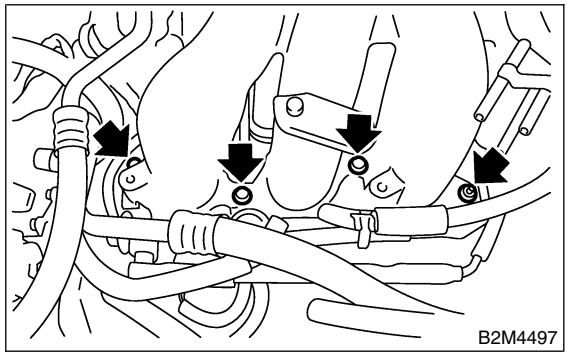
25) Remove fuel pipe protector RH.

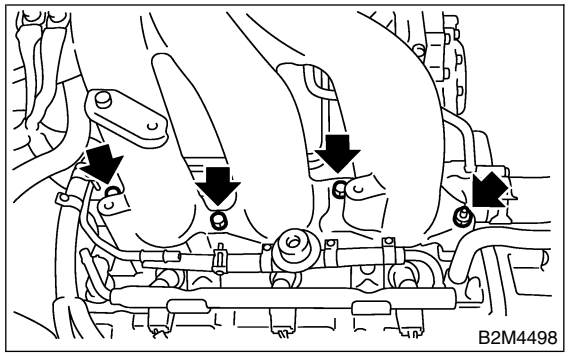


26) Disconnect air assist hose (A).
Remove the bolt (B), which holds fuel injector pipe RH onto cylinder head.



27) Remove bolts which holds intake manifold onto cylinder heads.





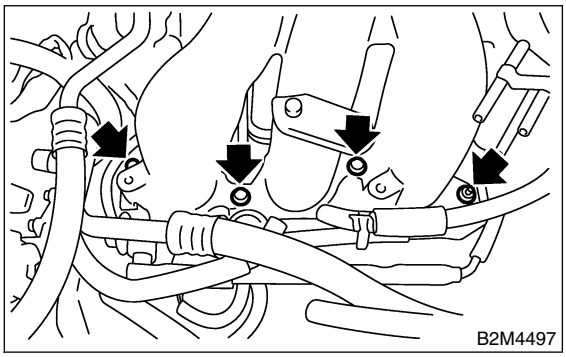
28) Remove intake manifold.

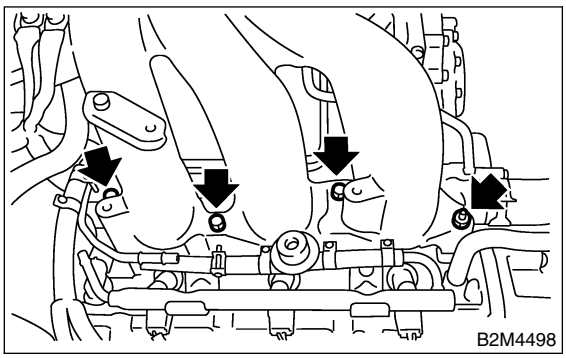
B: INSTALLATION S145034A11

1) Install intake manifold onto cylinder heads.

CAUTION:
Always use new gaskets.

Tightening torque:
25 N·m (2.5 kgf-m, 18.1 ft-lb)

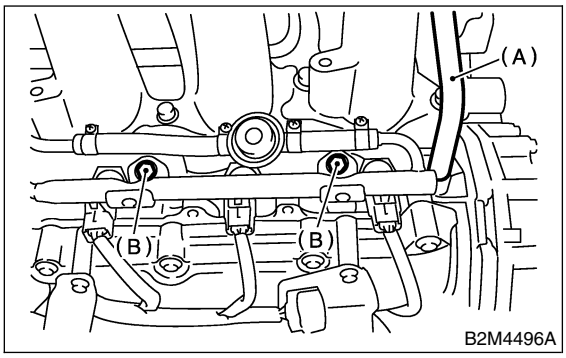




2) Install the bolt (B), which holds fuel injector pipe RH onto cylinder head.

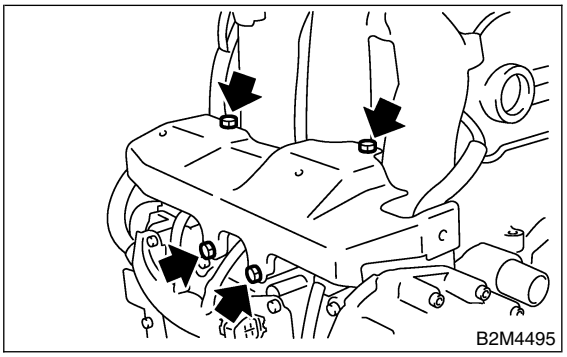
Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

3) Connect air assist hose (A).

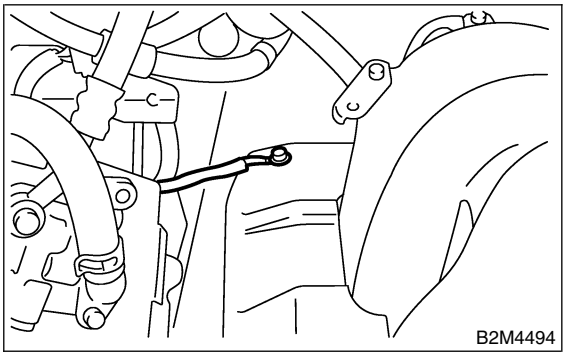


4) Install fuel pipe protector RH.

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)



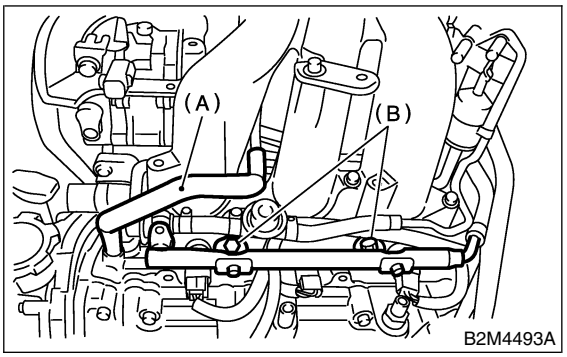
5) Install ground cable to fuel pipe protector RH.



6) Install the bolt (B) which holds fuel injector pipe RH onto cylinder head.

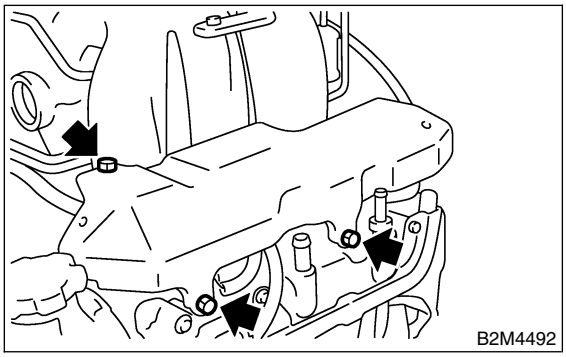
Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

7) Connect air assist hose (A).

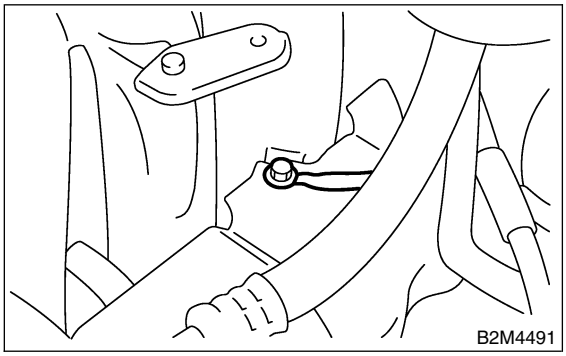


8) Install fuel pipe protector LH.

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)



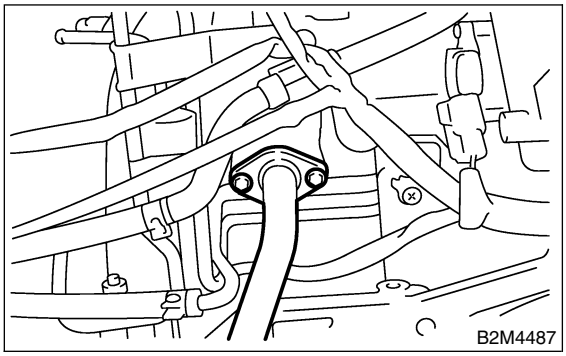
9) Install ground cable to fuel pipe protector LH.



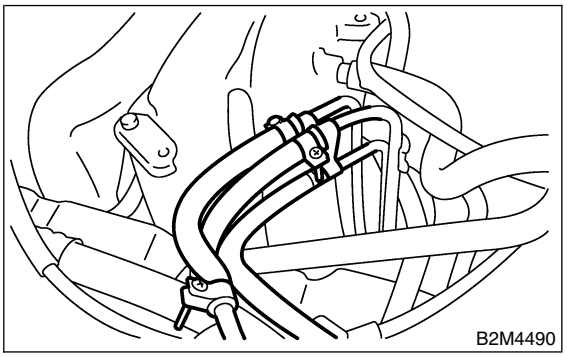
10) Install EGR pipe to EGR valve.

CAUTION:
Always use new gasket.

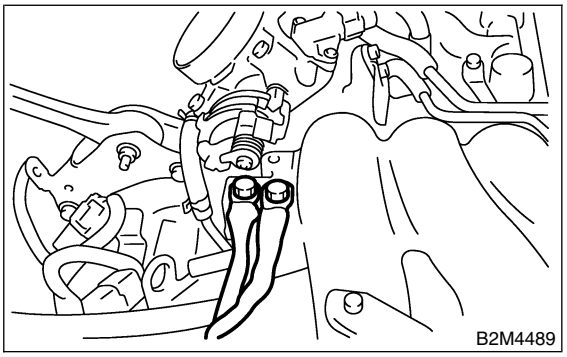
Tightening torque:
6.4 N·m (0.65 kgf-m, 4.7 ft-lb)



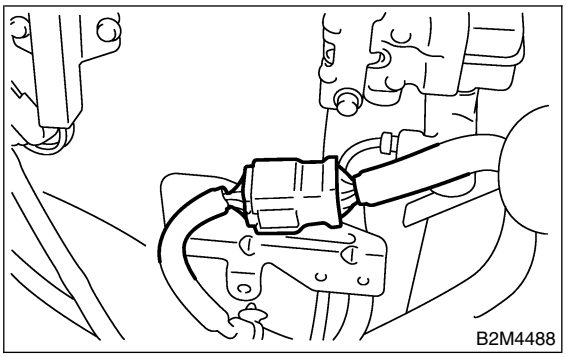
11) Connect fuel hoses.



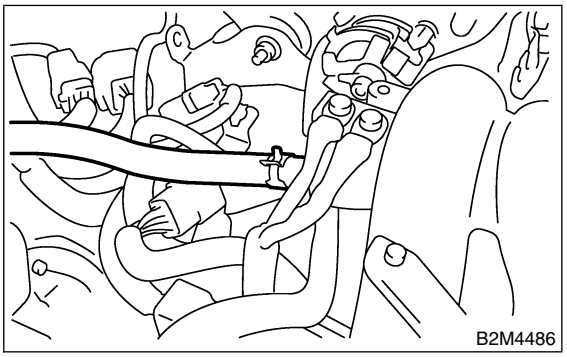
12) Connect engine ground terminal to intake manifold.



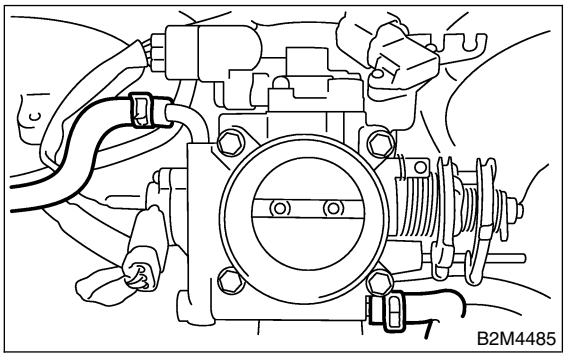
13) Connect engine harness connectors to bulkhead connectors.



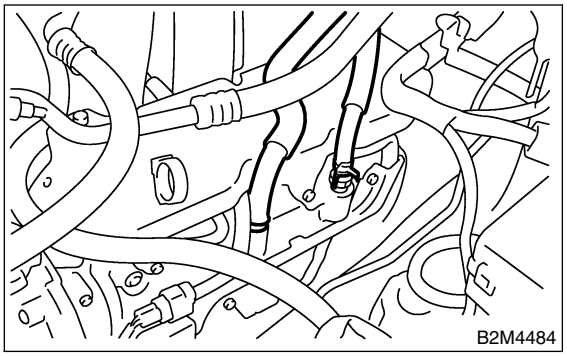
14) Connect brake booster hose.



15) Connect engine coolant hose to throttle body.

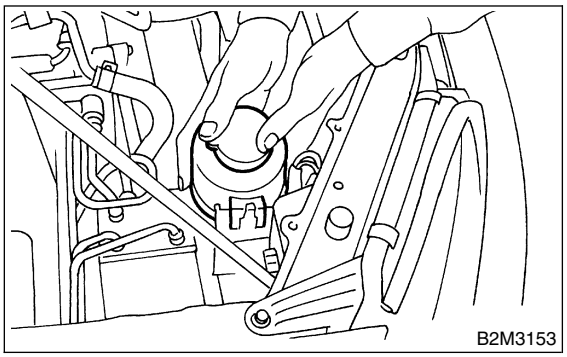


16) Connect PCV hose to cylinder head cover.

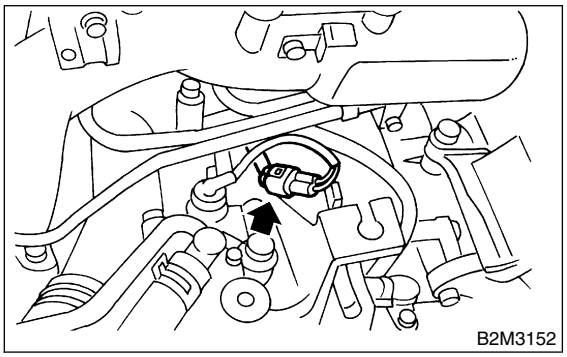


17) Install power steering pump and tank on brackets.

(1) Install power steering tank on bracket.

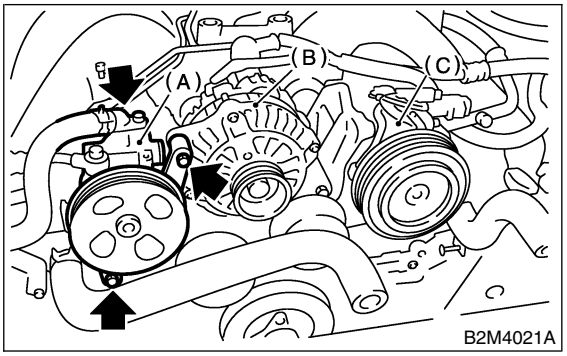


(2) Connect connector to power steering pump switch.



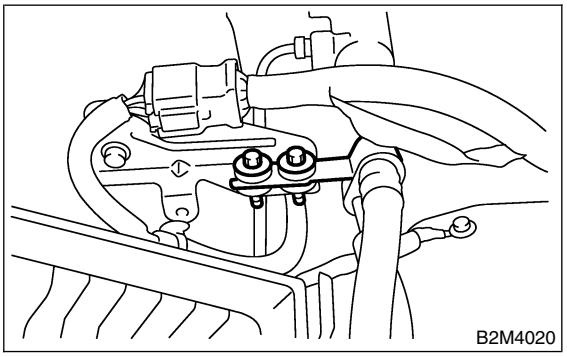
(3) Tighten bolts which install power steering pump on bracket.

Tightening torque:
20.1 N·m (2.05 kgf-m, 14.8 ft-lb)



(A) Power steering pump
(B) Generator
(C) A/C compressor

(4) Install power steering pipes with bracket.

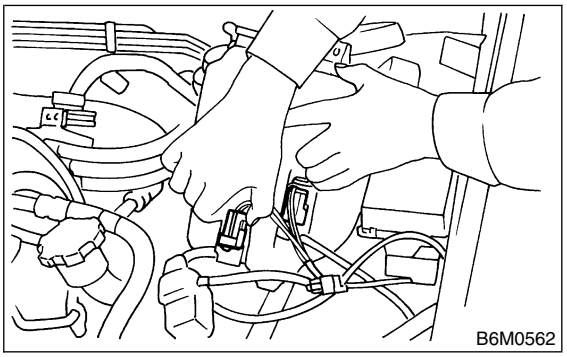


(5) Install V-belt. <Ref. to ME(H6)-31, INSTALLATION, V-belt.>

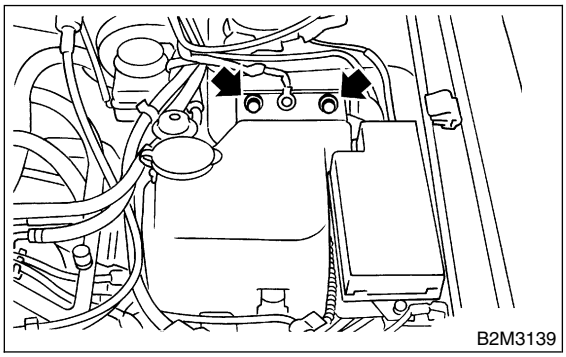
18) Connect rear window washer hose to washer motor.

19) Connect front window washer motor connector.

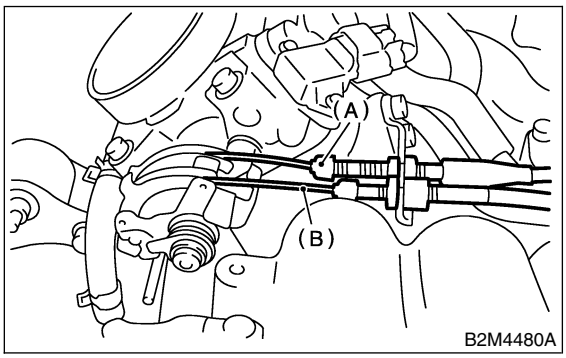
20) Connect rear window washer motor connector.



21) Install washer tank on body.

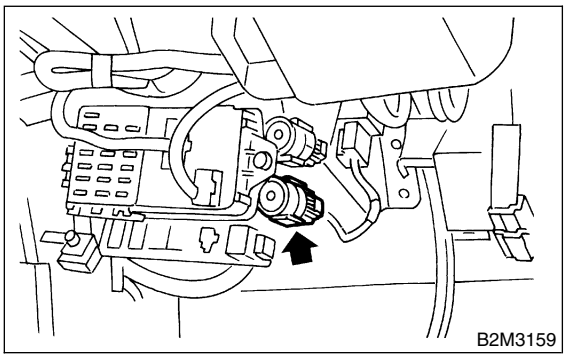

B2M3139

22) Connect accelerator cable (A).
23) Connect cruise control cable (B). (With cruise control models)

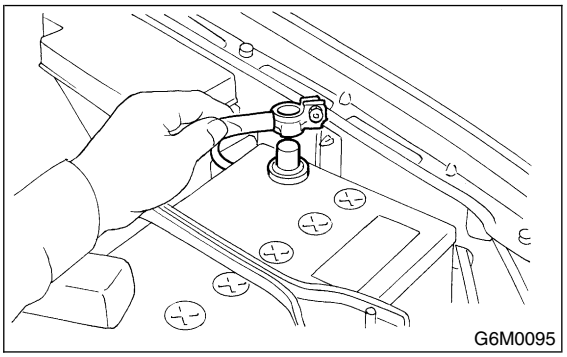


B2M4480A

24) Install air intake duct, air cleaner and air intake chamber. <Ref. to IN(H6)-7, INSTALLATION, Air Intake Duct.> and <Ref. to IN(H6)-5, INSTALLATION, Air Cleaner.> and <Ref. to IN(H6)-6, INSTALLATION, Air Intake Chamber.>
25) Connect connector to fuel pump relay.

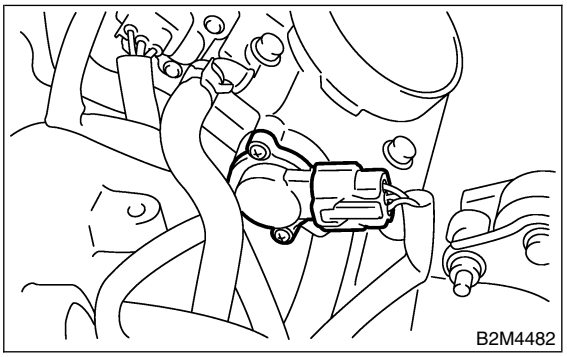

B2M3159

26) Connect battery ground cable.

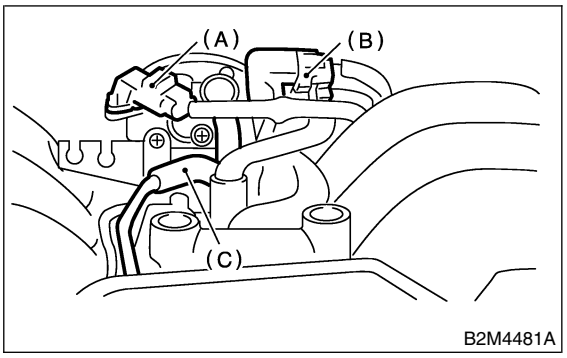

G6M0095

C: DISASSEMBLY S145034A06

1) Disconnect connectors from throttle position sensor.

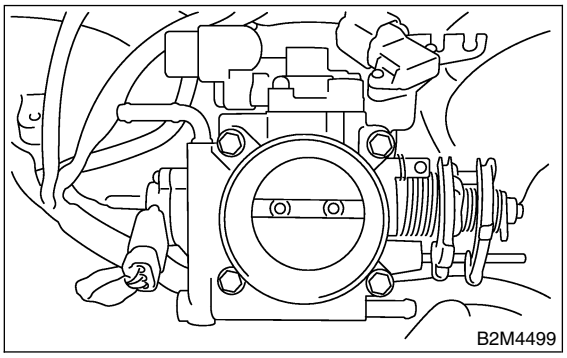

B2M4482

2) Disconnect connectors from intake manifold pressure sensor (B) and idle air control solenoid valve (A).
3) Disconnect air by-pass hose (C) from idle air control solenoid valve.

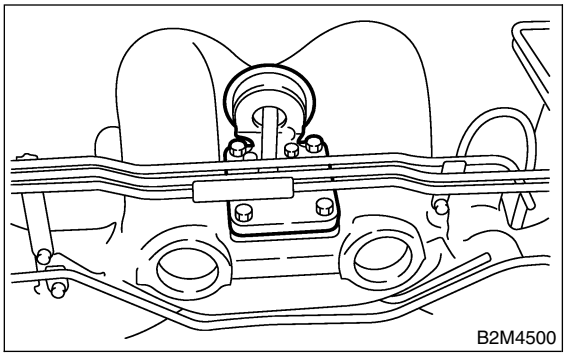


B2M4481A

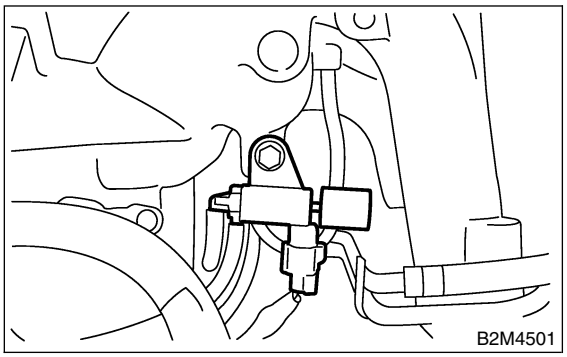
4) Remove throttle body.



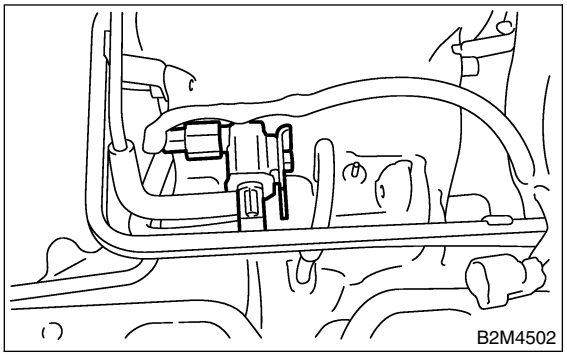
5) Remove induction valve.



6) Disconnect connector from induction valve control solenoid.
7) Remove induction valve control solenoid.

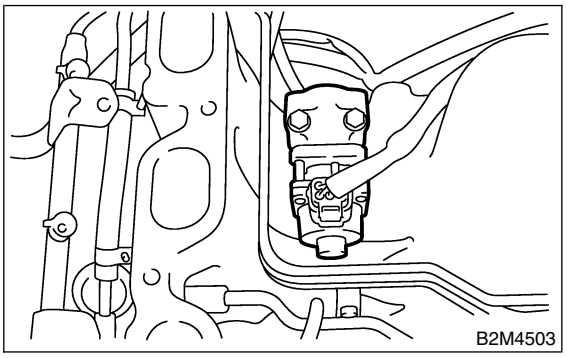


8) Disconnect connector from purge control solenoid valve.
9) Remove purge control solenoid valve.

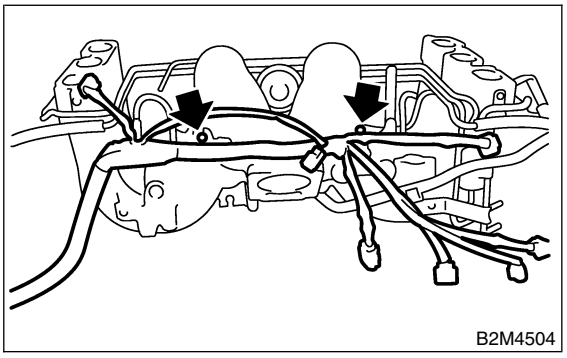


10) Disconnect connector from EGR valve.

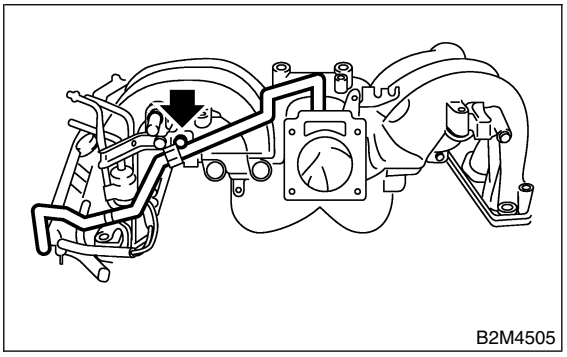
11) Remove EGR valve.



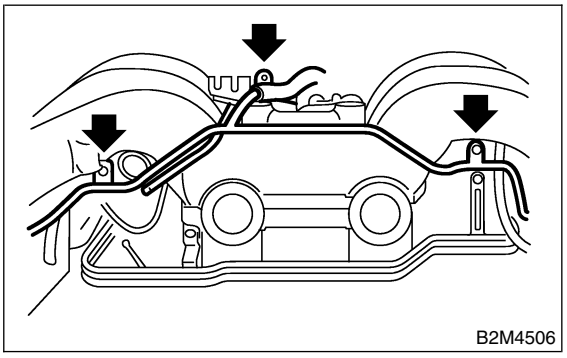
12) Remove engine harness assembly from intake manifold.



13) Remove PCV pipe from intake manifold.

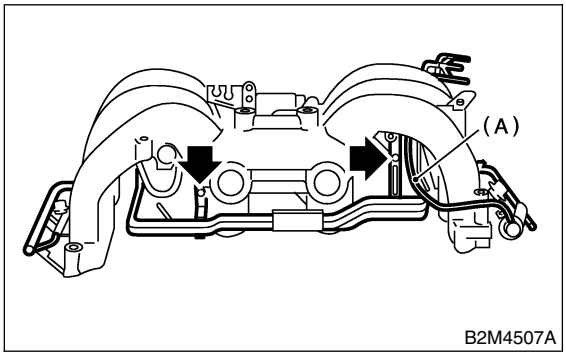


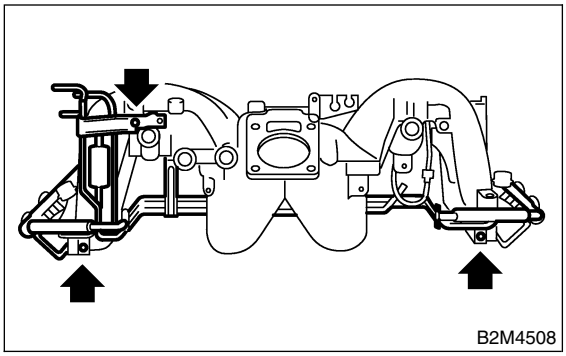
14) Remove air assist and purge pipe assembly.



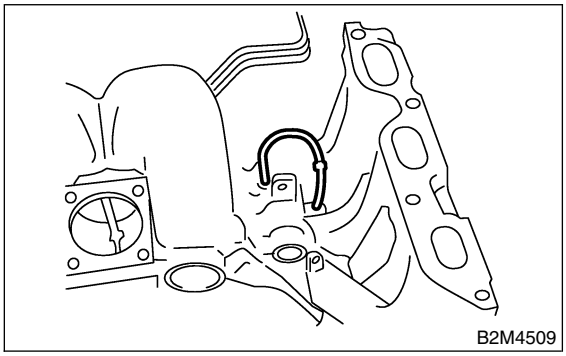
15) Disconnect pressure regulator vacuum hose (A) from intake manifold.
16) Remove fuel pipe and injector pipe assembly.

17) Disconnect pressure regulator vacuum hose (A) from intake manifold.



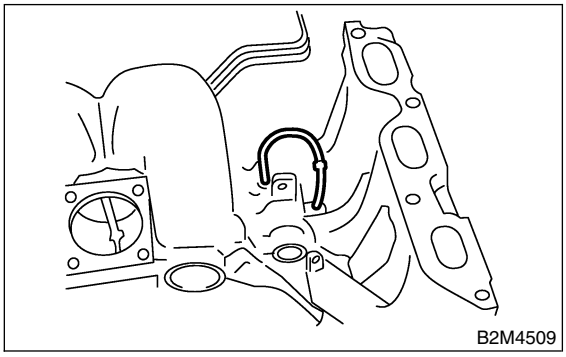


18) Remove induction valve vacuum hose from intake manifold.



D: ASSEMBLY S145034A02

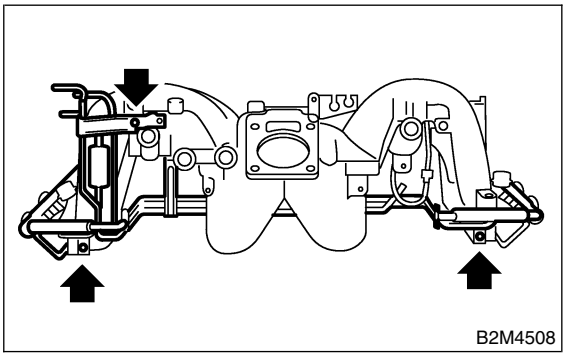
1) Intake induction valve vacuum hose to intake manifold.

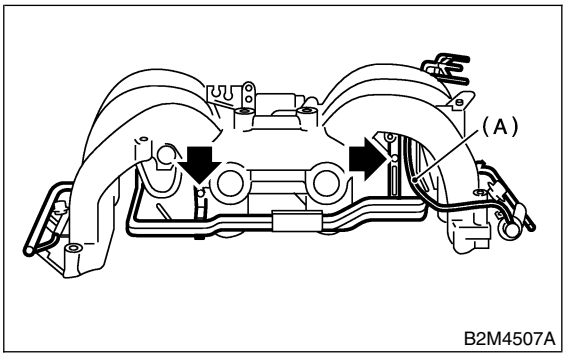


2) Install fuel pipe and injector pipe assembly.

Tightening torque:
5.0 N·m (0.51 kgf-m, 3.7 ft-lb)

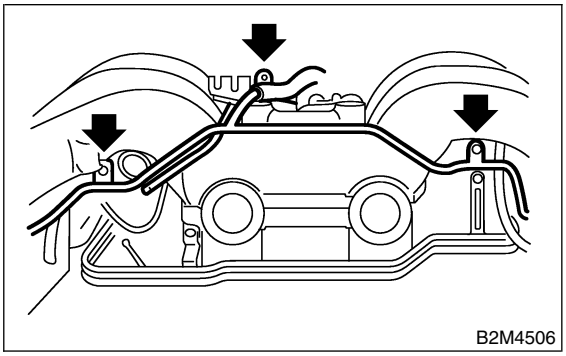
3) Connect pressure regulator vacuum hose (A) to intake manifold.





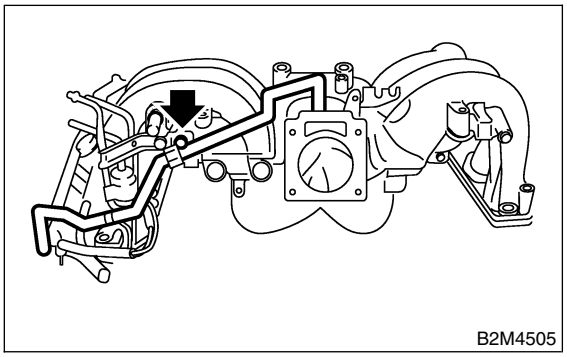
4) Install air assist and purge pipe assembly.

Tightening torque:
5.0 N·m (0.51 kgf-m, 3.7 ft-lb)



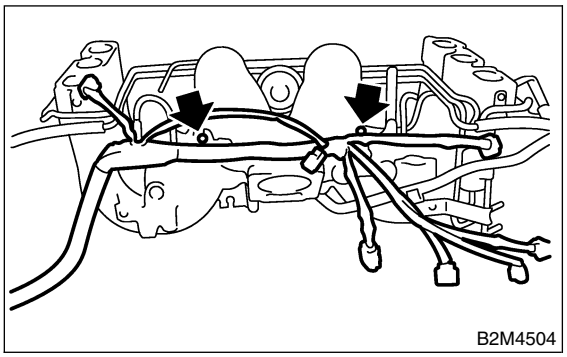
5) Install PCV pipe to intake manifold.

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



6) Install engine harness assembly to intake manifold.

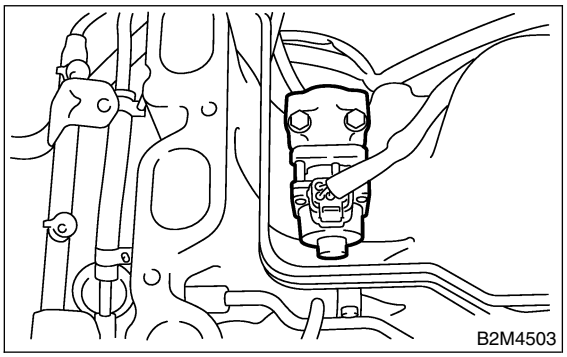
Tightening torque:
5.0 N·m (0.51 kgf-m, 3.7 ft-lb)



7) Install EGR valve.

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

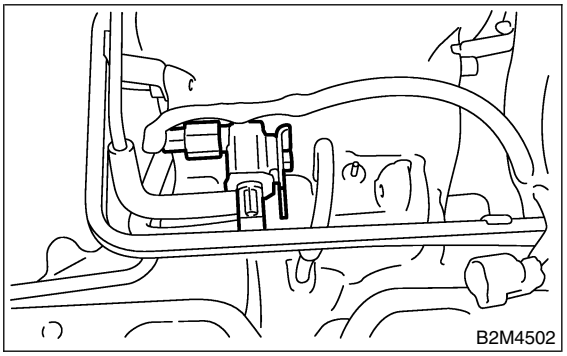
8) Connect connector to EGR valve.



9) Install purge control solenoid valve.

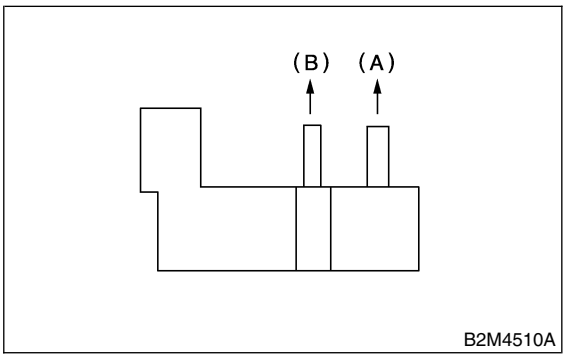
Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

10) Connect connector to purge control solenoid valve.



11) Connect hoses to purge control solenoid valve.

CAUTION:
Carefully connect the evaporation hoses.

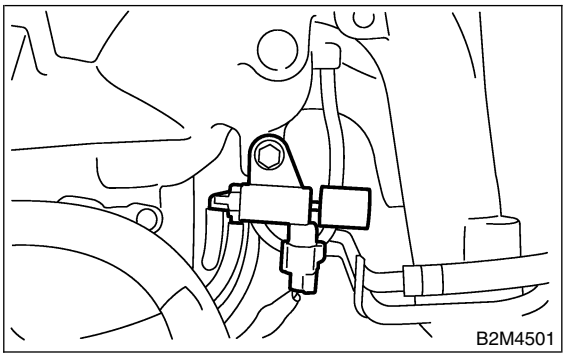


(A) To purge pipe
(B) To fuel pipe

12) Install induction valve control solenoid.

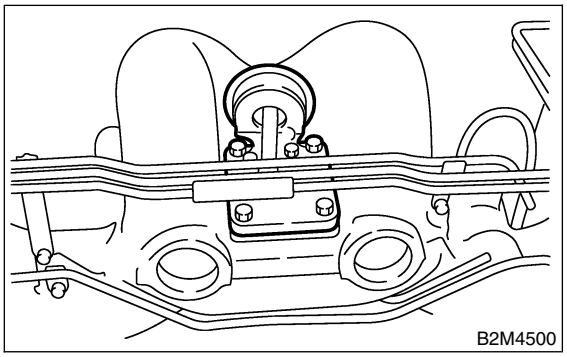
Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

13) Connect connector to induction valve control solenoid.



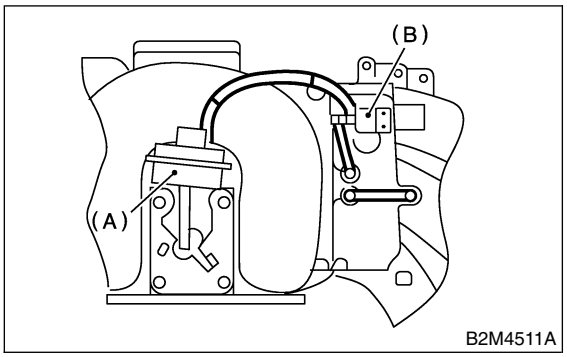
14) Install induction valve.

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)



15) Connect hoses to induction valve control solenoid.

CAUTION:
Carefully connect the vacuum hoses.

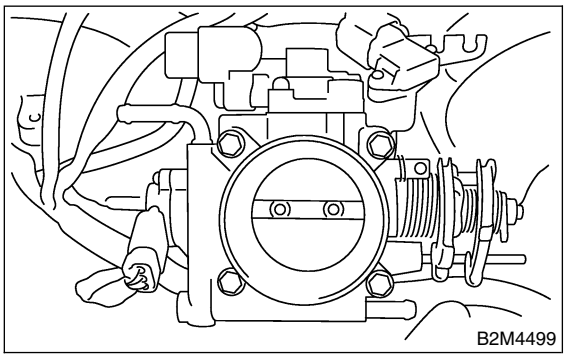


(A) Induction valve
(B) Induction valve control solenoid

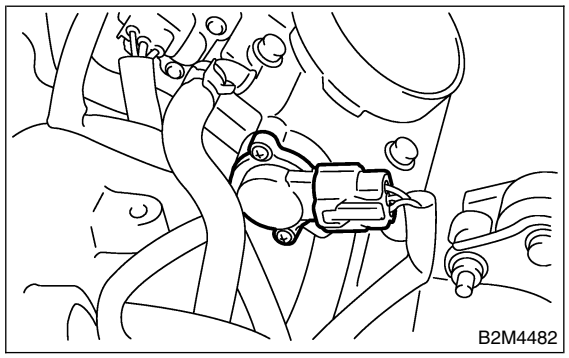
16) Install throttle body to intake manifold.

CAUTION:
Replace gasket with a new one.

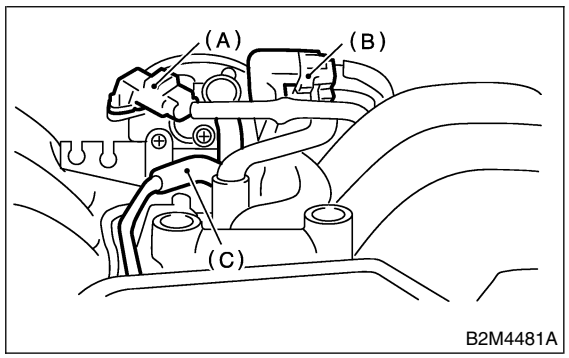
Tightening torque:
22 N·m (2.2 kgf-m, 15.9 ft-lb)



17) Connect connectors to throttle position sensor.



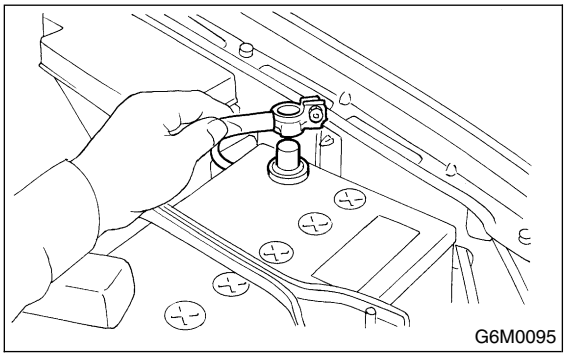
18) Connect connectors to intake manifold pressure sensor (A) and idle air control solenoid valve (B).
19) Connect air by-pass hose (C) to idle air control solenoid valve.



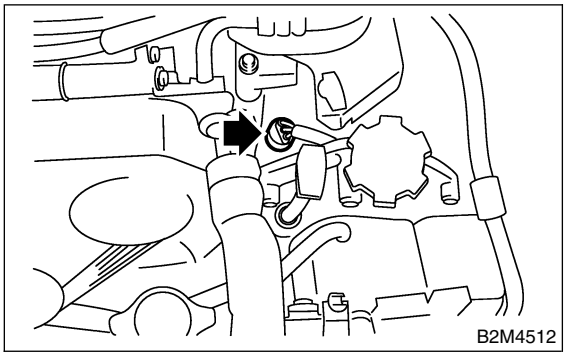
4. Engine Coolant Temperature Sensor S145047

A: REMOVAL S145047A18

1) Disconnect battery ground cable.



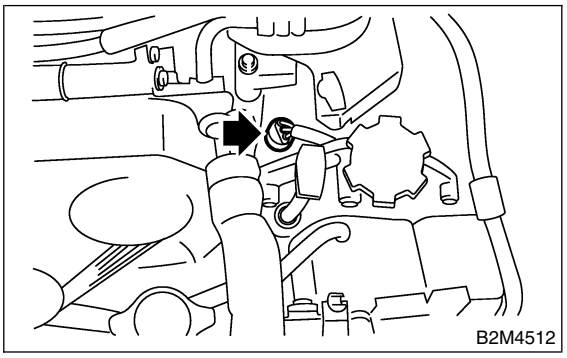
2) Disconnect connector from engine coolant temperature sensor.
3) Remove engine coolant temperature sensor.



B: INSTALLATION S145047A11

Install in the reverse order of removal.

Tightening torque:
16 N·m (0.16 kgf-m, 1.2 ft-lb)

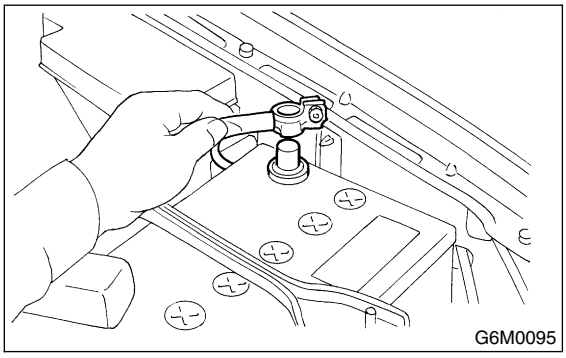


5. Crankshaft Position Sensor

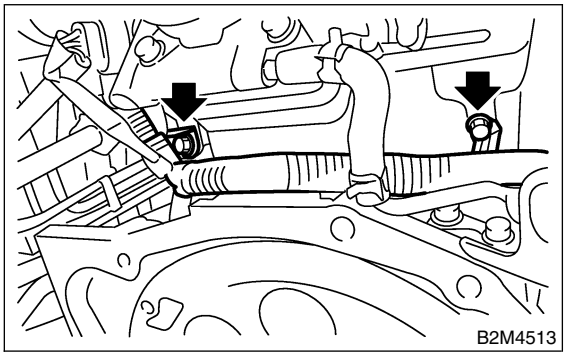
S145043

A: REMOVAL S145043A18

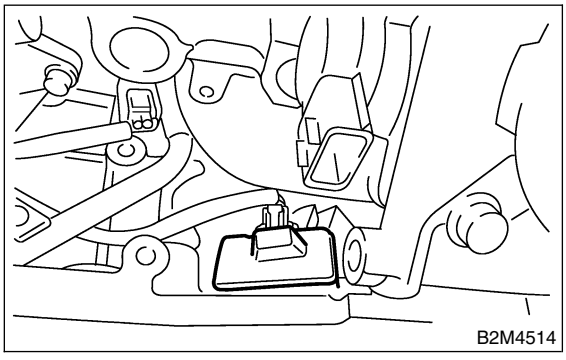
1) Disconnect battery ground cable.



2) Remove air intake chamber.
<Ref. to IN(H6)-6, REMOVAL, Air Intake Chamber.>
3) Remove engine harness bracket from intake manifold.

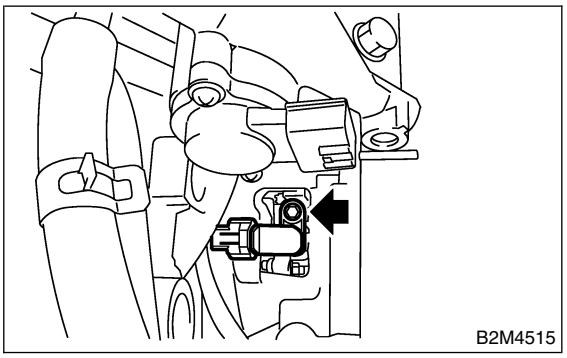


4) Remove service hole cover.



5) Remove bolt which install crankshaft position sensor to cylinder block.

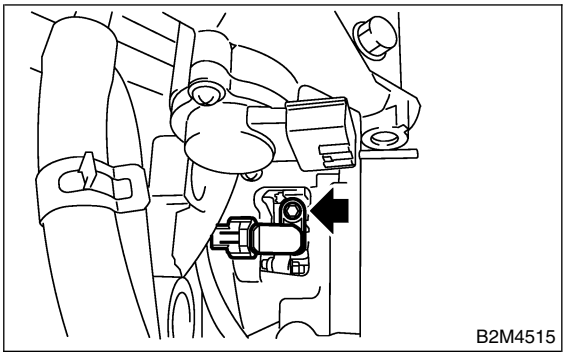
6) Remove crankshaft position sensor, and disconnect connector from it.



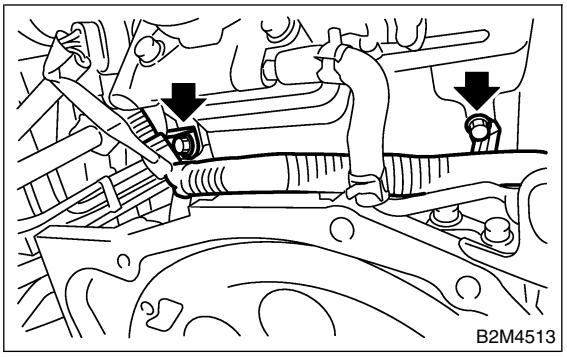
B: INSTALLATION S145043A11

Install in the reverse order of removal.

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



Tightening torque:
5.0 N·m (0.51 kgf-m, 3.7 ft-lb)

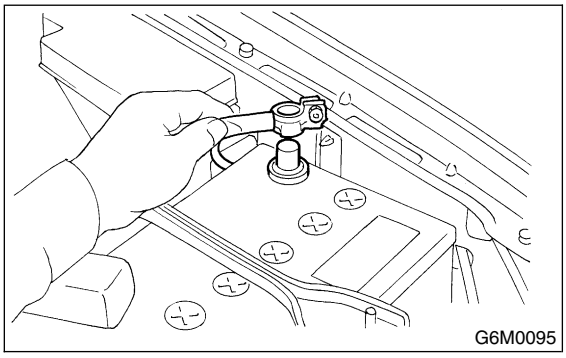


6. Camshaft Position Sensor

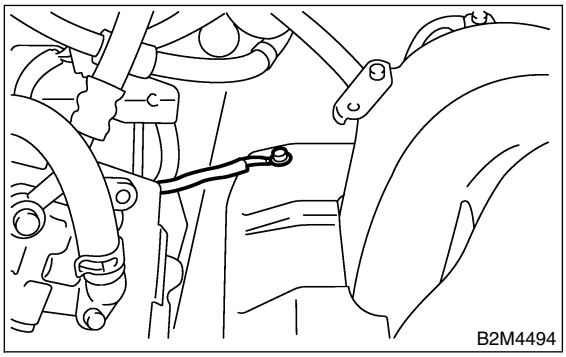
S145041

A: REMOVAL S145041A18

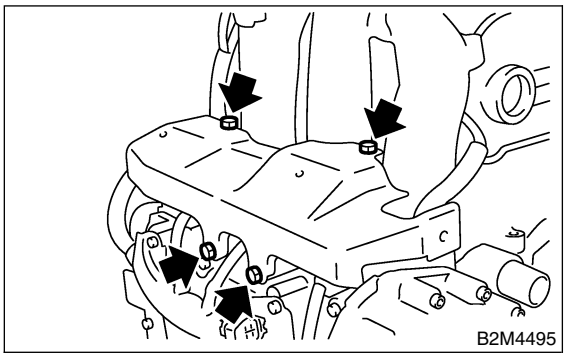
1) Disconnect battery ground cable.


G6M0095

2) Remove air cleaner.
<Ref. to IN(H6)-5, REMOVAL, Air Cleaner.>
3) Remove ground cable from fuel pipe protector RH.

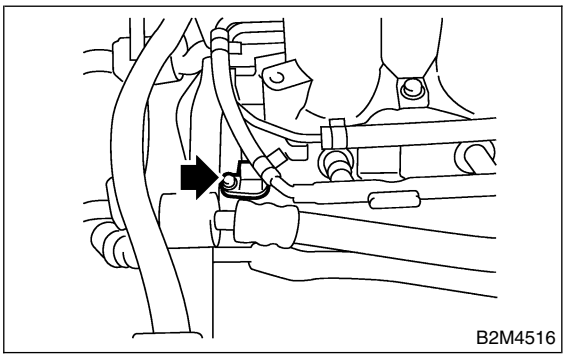

B2M4494

4) Remove fuel pipe protector RH.


B2M4495

5) Disconnect connector from camshaft position sensor.

6) Remove camshaft position sensor.


B2M4516

B: INSTALLATION S145041A11

Install in the reverse order of removal.

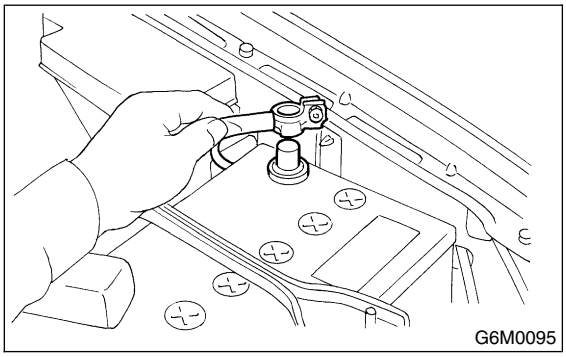
Tightening torque:

- ***Camshaft position sensor;***
  6.4 N·m (0.65 kgf-m, 4.7 ft-lb)
- ***Fuel pipe protector RH;***
  19 N·m (1.9 kgf-m, 14 ft-lb)

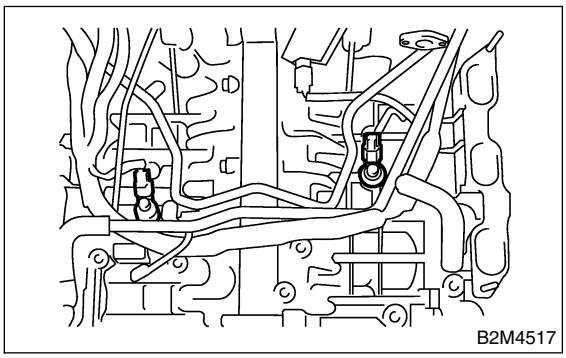
7. Knock Sensor S145042

A: REMOVAL S145042A18

1) Disconnect battery ground cable from battery ground terminal.



2) Remove intake manifold.
<Ref. to FU(H6)-17, REMOVAL, Intake Manifold.>
3) Disconnect knock sensor connector.
4) Remove knock sensor from cylinder block.

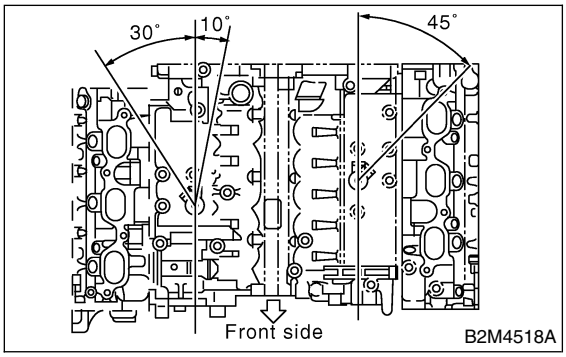


B: INSTALLATION S145042A11

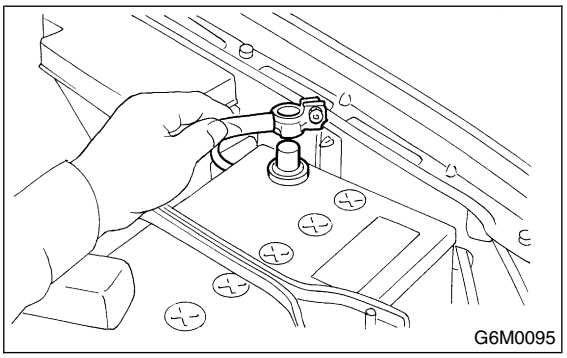
1) Install knock sensor to cylinder block.

Tightening torque:
25 N·m (2.5 kgf-m, 18 ft-lb)

NOTE:
For the knock sensor's installation angle, refer to the figure below.



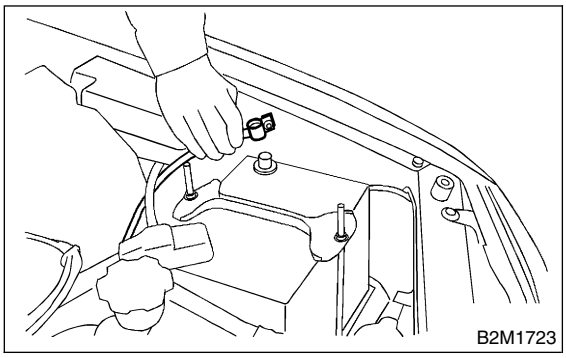
2) Connect knock sensor connector.
3) Install intake manifold. <Ref. to FU(H6)-21, INSTALLATION, Intake Manifold.>
4) Connect battery ground cable.



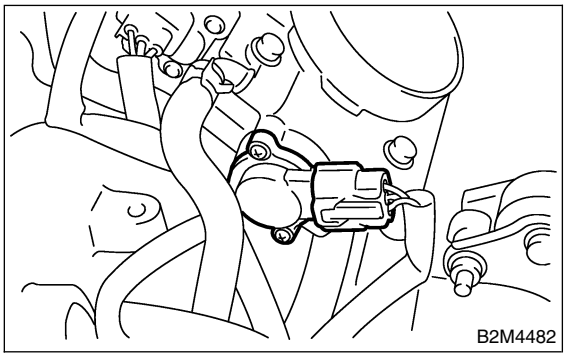
8. Throttle Position Sensor S145039

A: REMOVAL S145039A18

1) Disconnect battery ground cable.



Remove air intake chamber. <Ref. to IN(H6)-6, REMOVAL, Air Intake Chamber.>
2) Disconnect connector from throttle position sensor.
3) Remove throttle position sensor holding screws, and remove throttle position sensor itself.

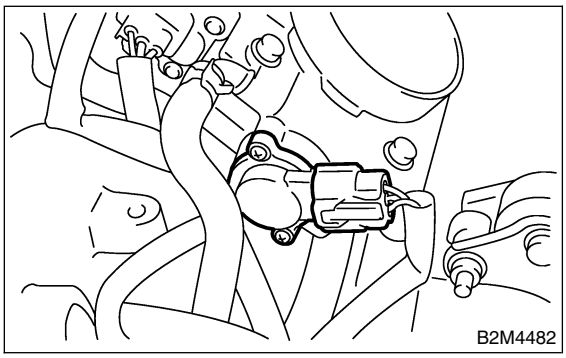


B: INSTALLATION S145039A11

Install in the reverse order of removal.

CAUTION:
When installing throttle position sensor, adjust the position to match with the specified data.

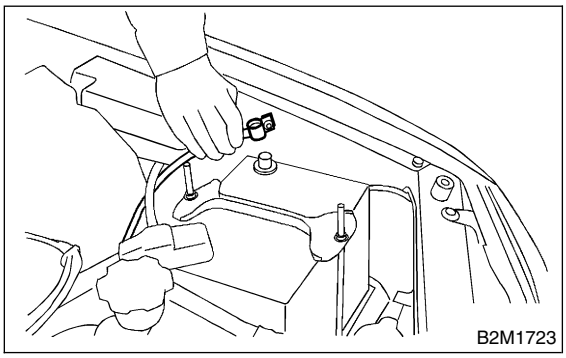
Tightening torque:
1.6 N·m (0.16 kgf-m, 1.2 ft-lb)



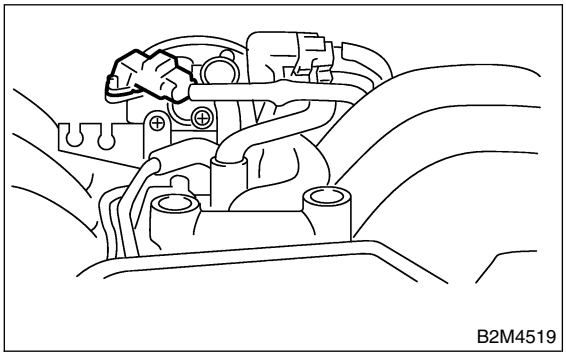
9. Intake Manifold Pressure Sensor S145568

A: REMOVAL S145568A18

1) Disconnect battery ground cable.



2) Disconnect connector from intake manifold pressure sensor.
3) Remove intake manifold pressure sensor from throttle body.

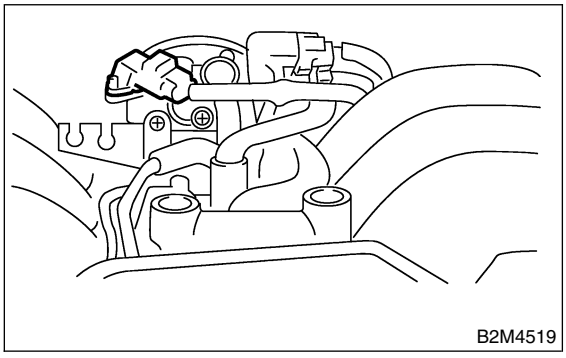


B: INSTALLATION S145568A11

Install in the reverse order of removal.

CAUTION:
Replace gasket with new one.

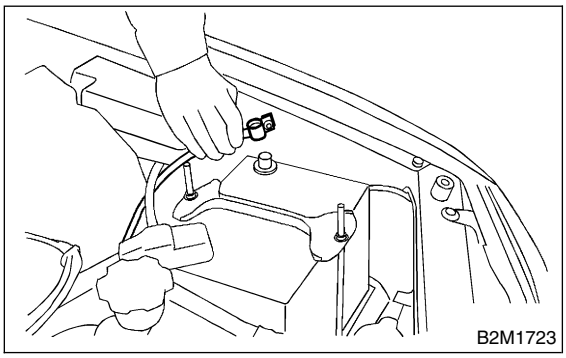
Tightening torque:
1.6 N·m (0.16 kgf-m, 1.2 ft-lb)



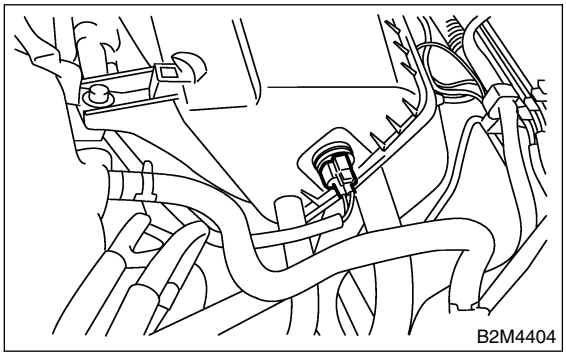
10. Intake Air Temperature Sensor S145569

A: REMOVAL S145569A18

1) Disconnect battery ground cable.



2) Disconnect connector from intake air temperature sensor.
3) Remove intake air temperature sensor from air intake chamber.



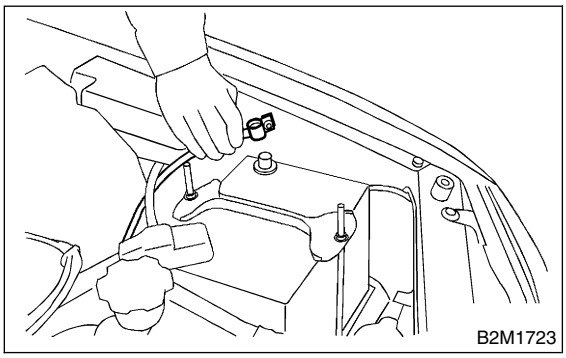
B: INSTALLATION S145569A11

Install in the reverse order of removal.

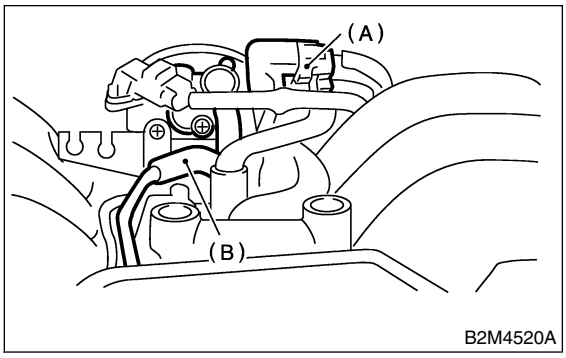
11. Idle Air Control Solenoid Valve S145056

A: REMOVAL S145056A18

1) Disconnect battery ground cable.



2) Disconnect connector (A) from idle air control solenoid valve.
3) Disconnect air by-pass hose (B) from idle air control solenoid valve.
4) Remove idle air control solenoid valve from throttle body.



B: INSTALLATION S145056A11

Install in the reverse order of removal.

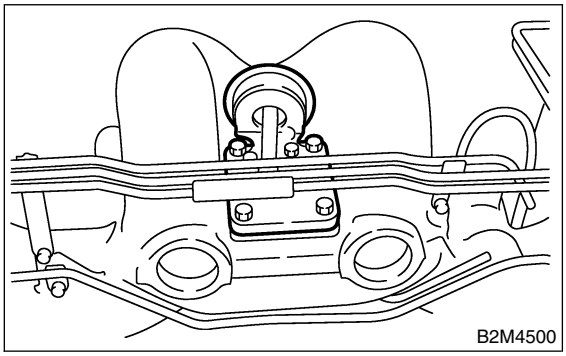
CAUTION:
Replace gasket with a new one.

Tightening torque:
2.8 N·m (0.29 kgf-m, 2.1 ft-lb)

12. Induction Valve S145742

A: REMOVAL S145742A18

1) Disconnect battery ground cable.
2) Remove intake manifold.
<Ref. to FU(H6)-17, REMOVAL, Intake Manifold.>
3) Remove induction valve from intake manifold.



B: INSTALLATION S145742A11

Install in the reverse order of removal.

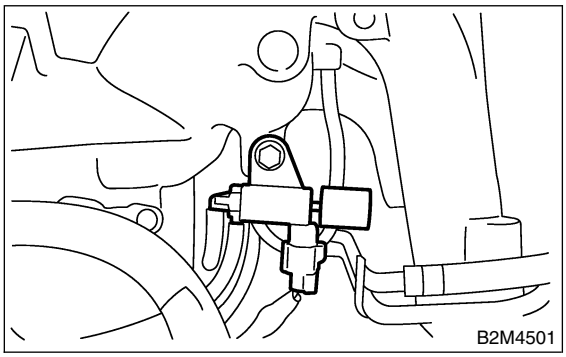
CAUTION:
Always use a new gasket.

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

13. Induction Valve Control Solenoid S145743

A: REMOVAL S145743A18

1) Disconnect battery ground cable.
2) Remove intake manifold.
<Ref. to FU(H6)-17, REMOVAL, Intake Manifold.>
3) Disconnect connector from induction valve control solenoid.
4) Remove induction valve control solenoid from intake manifold.



B: INSTALLATION S145743A11

Install in the reverse order of removal.

CAUTION:
Always use a new gasket.

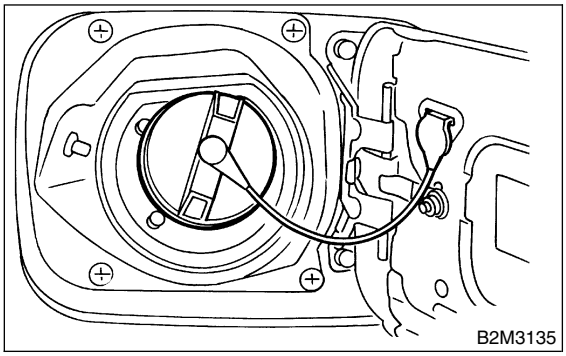
Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

14. Fuel Injector S145051

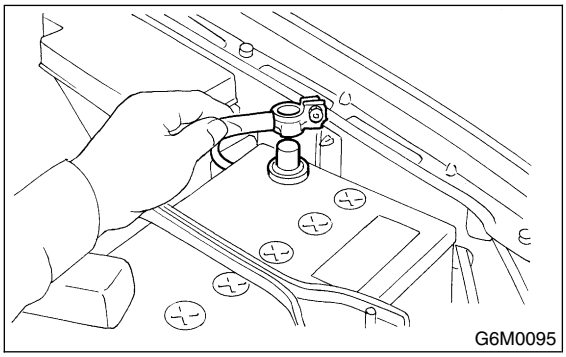
A: REMOVAL S145051A18

1. RH SIDE S145051A1801

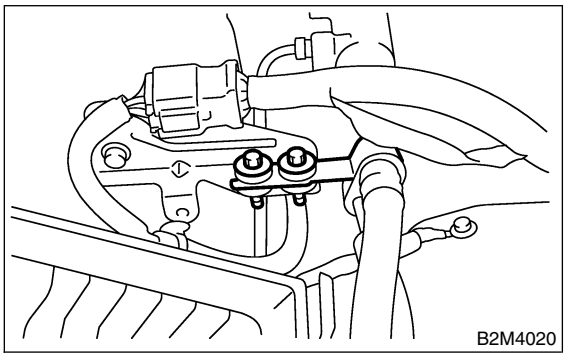
1) Release fuel pressure.
<Ref. to FU(H6)-49, RELEASING OF FUEL PRESSURE, Fuel.>
2) Open fuel flap lid, and remove fuel filler cap.


B2M3135

3) Disconnect battery ground cable.

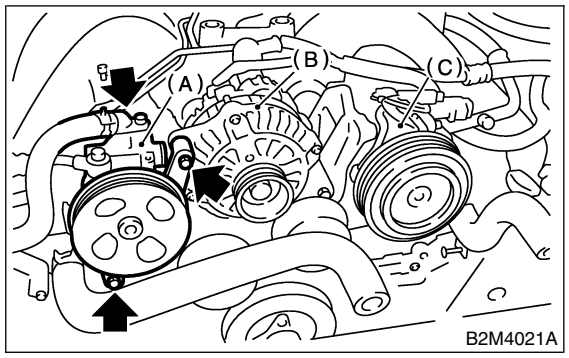

G6M0095

4) Remove air cleaner lower case. <Ref. to IN(H6)-5, REMOVAL, Air Cleaner.>
5) Remove power steering pump and tank from brackets.
(1) Remove V-belt.
<Ref. to ME(H6)-31, REMOVAL V-belt.>
(2) Remove power steering oil pipe with bracket.


B2M4020

(3) Remove bolts which install power steering pump bracket.

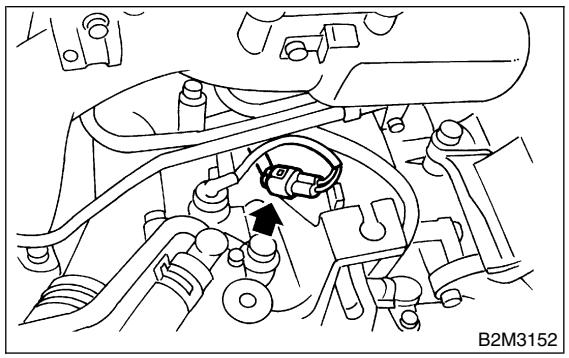
CAUTION:
Do not separate hose and pipe from the main pump.



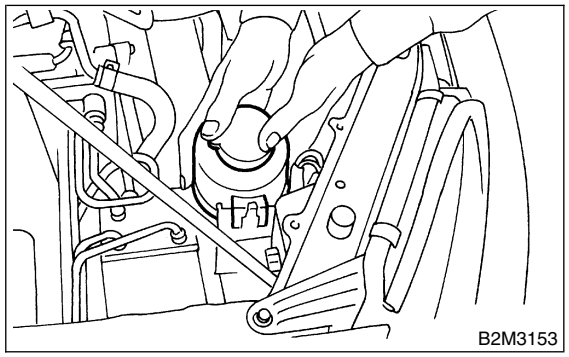
B2M4021A

(A) Power steering pump
(B) Generator
(C) A/C compressor

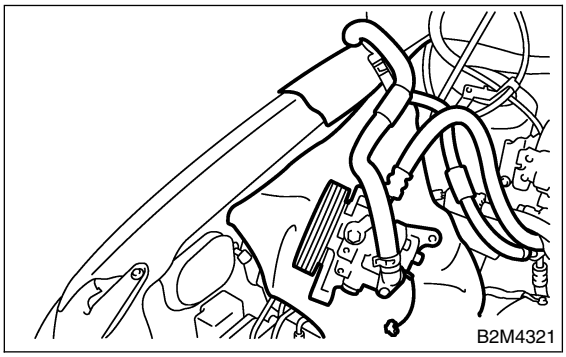
(4) Disconnect power steering pump switch connector.


B2M3152

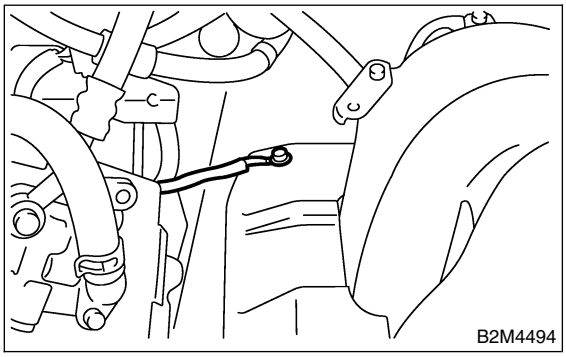
(5) Remove power steering tank from the bracket by pulling it upward.


B2M3153

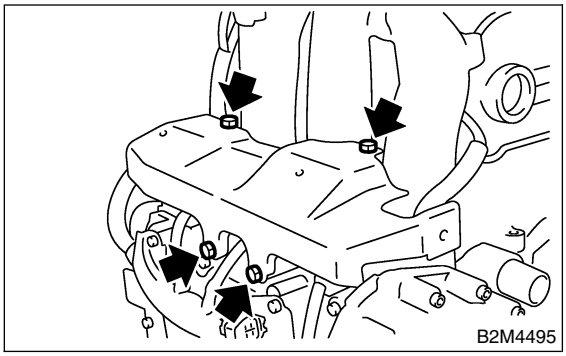
(6) Place power steering pump on the right side wheel apron.


B2M4321

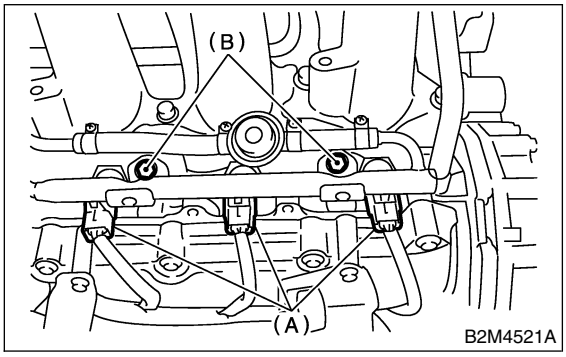
6) Remove ground cable from fuel pipe protector RH.


B2M4494

7) Remove fuel pipe protector RH.


B2M4495

8) Disconnect connector (A) from fuel injector.
9) Remove bolt (B) which holds injector pipe onto cylinder head.

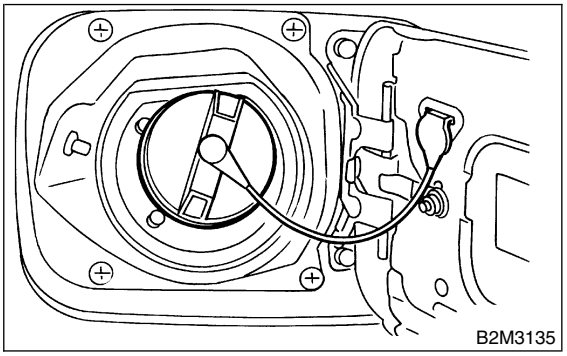


B2M4521A

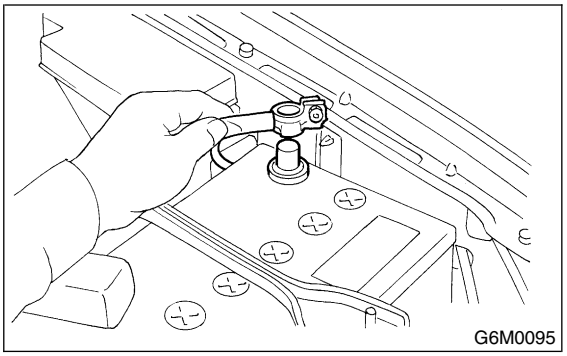
10) Remove fuel injector while lifting up fuel injector pipe.

2. LH SIDE S145051A1802

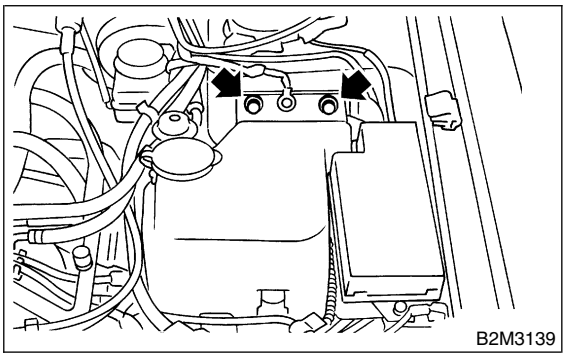
1) Release fuel pressure. <Ref. to FU(H6)-49, RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
2) Open fuel flap lid, and remove fuel filler cap.


B2M3135

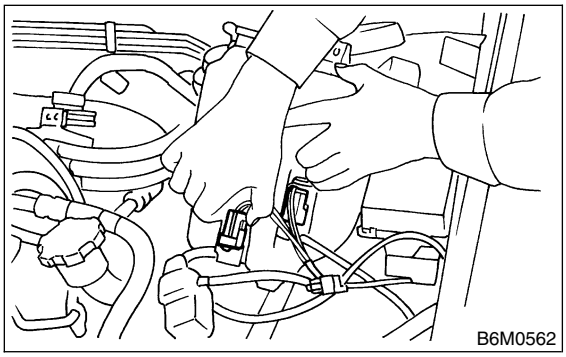
3) Disconnect battery ground cable.


G6M0095

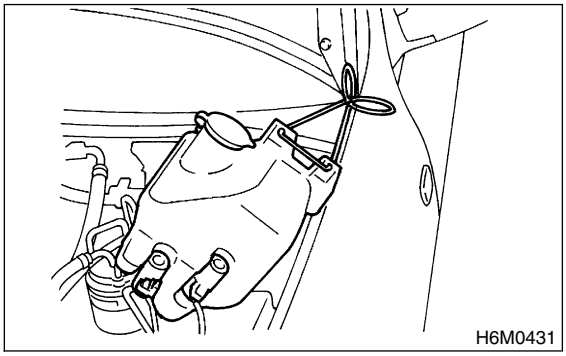
4) Remove two bolts which install washer tank on body.


B2M3139

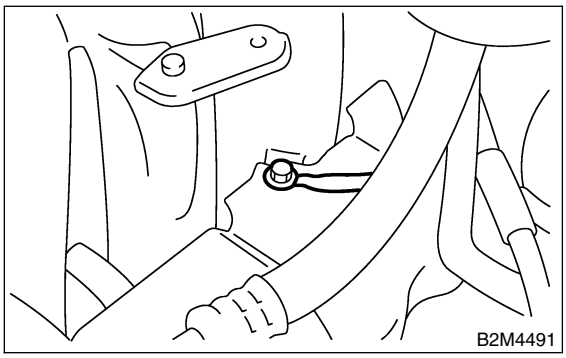
5) Disconnect connector from front window washer motor.
6) Disconnect connector from rear gate glass washer motor.


B6M0562

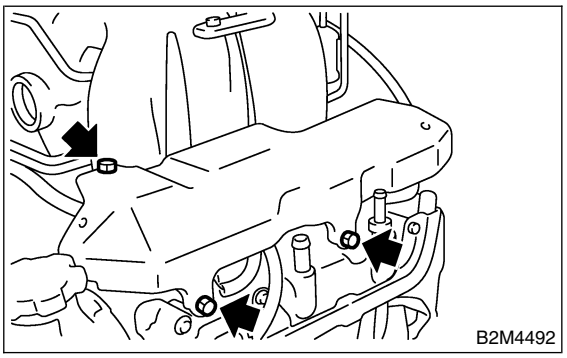
7) Disconnect rear window glass washer hose from washer motor, then plug connection with a suitable cap.
8) Move washer tank upward.


H6M0431

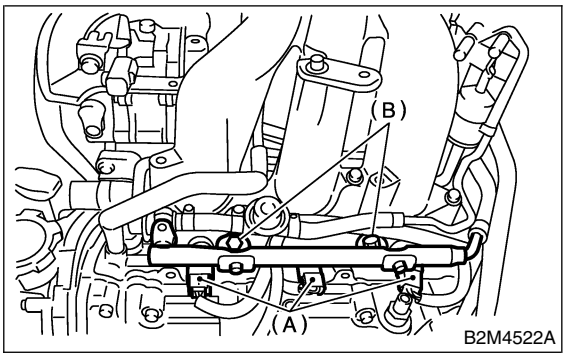
9) Remove ground cable from fuel pipe protector LH.


B2M4491

10) Remove fuel pipe protector LH.


B2M4492

11) Disconnect connector (A) from fuel injector.
12) Remove bolt (B) which holds injector pipe onto cylinder head.



B2M4522A

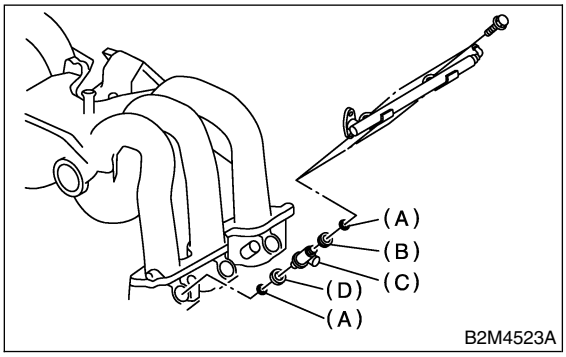
13) Remove fuel injector while lifting up fuel injector pipe.

B: INSTALLATION S145051A11

1. RH SIDE S145051A1101

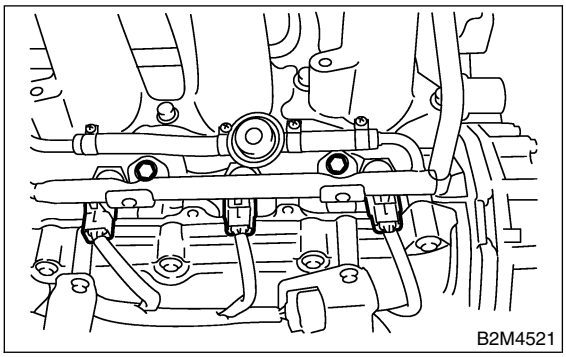
Install in the reverse order of removal.

CAUTION:
Replace O-rings and insulators with new ones.

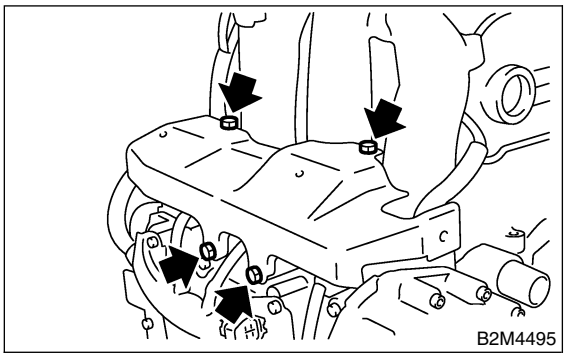


(A) O-ring
(B) Injection rubber
(C) Fuel injector
(D) Insulator

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)



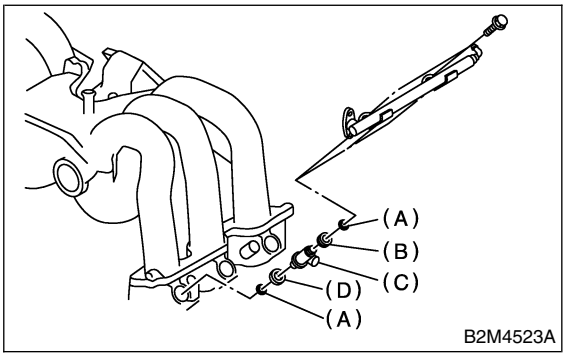
Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)



2. LH SIDE S145051A1102

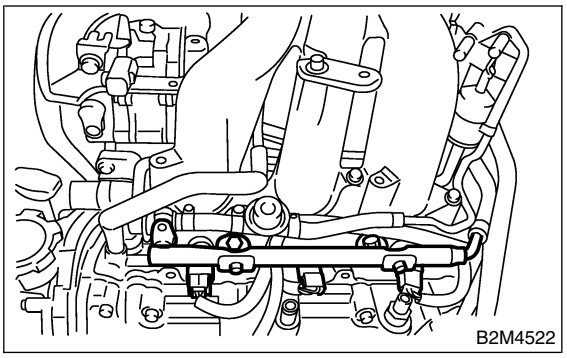
Install in the reverse order of removal.

CAUTION:
Replace O-rings and insulators with new ones.

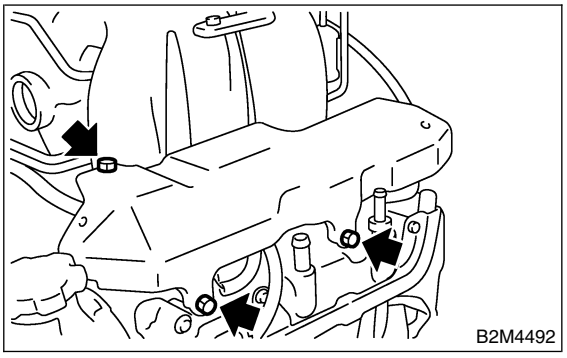


(A) O-ring
(B) Injection rubber
(C) Fuel injector
(D) Insulator

Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)



Tightening torque:
19 N·m (1.9 kgf-m, 14 ft-lb)

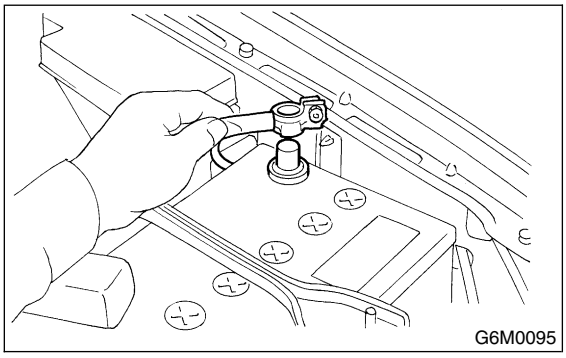


15. Front Oxygen (A/F) Sensor

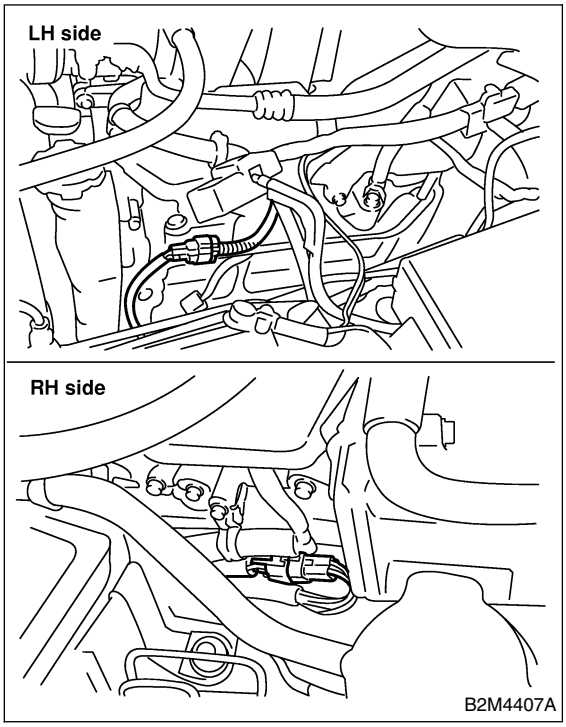
S145642

A: REMOVAL S145642A18

1) Disconnect battery ground cable.



2) Disconnect connector from front oxygen (A/F) sensor.

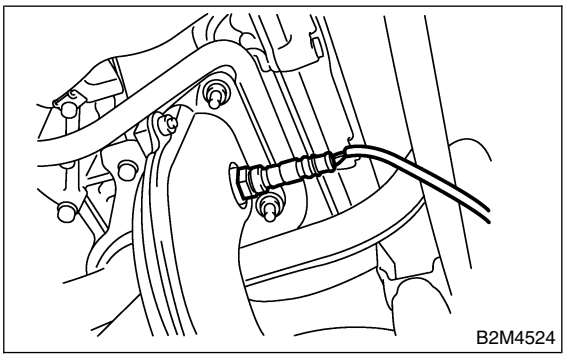


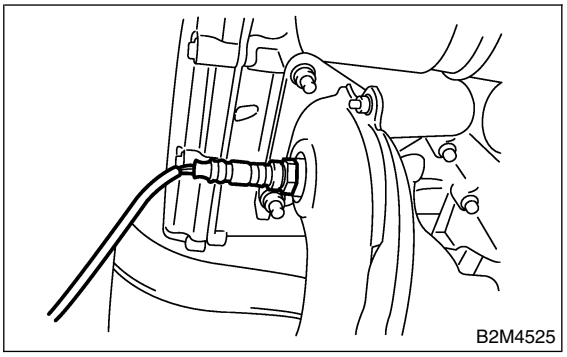
3) Lift-up the vehicle.
4) Remove under cover.
5) Apply SUBARU CRC or its equivalent to threaded portion of front oxygen (A/F) sensor, and leave it for one minute or more.

SUBARU CRC (Part No. 004301003)

6) Remove front oxygen (A/F) sensor.

CAUTION:
When removing front oxygen (A/F) sensor, do not force front oxygen (A/F) sensor especially when exhaust pipe is cold, otherwise it will damage exhaust pipe.





B: INSTALLATION S145642A11

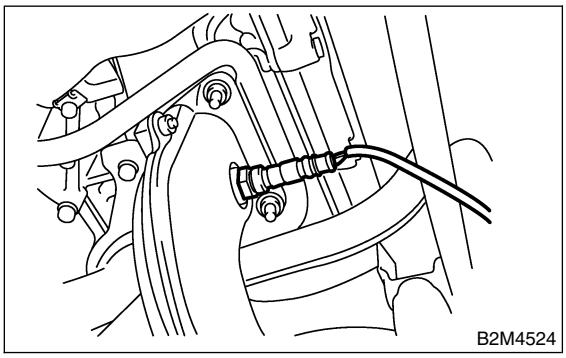
1) Before installing front oxygen (A/F) sensor, apply anti-seize compound only to threaded portion of front oxygen (A/F) sensor to make the next removal easier.

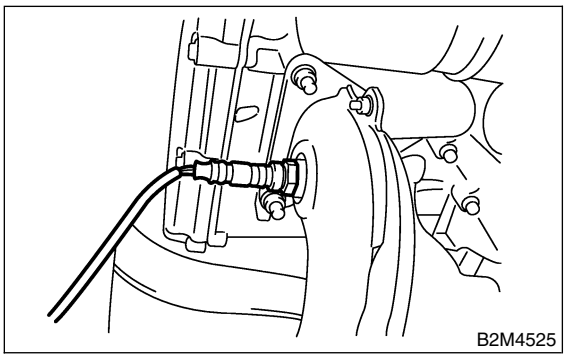
Anti-seize compound:
SS-30 by JET LUBE

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

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

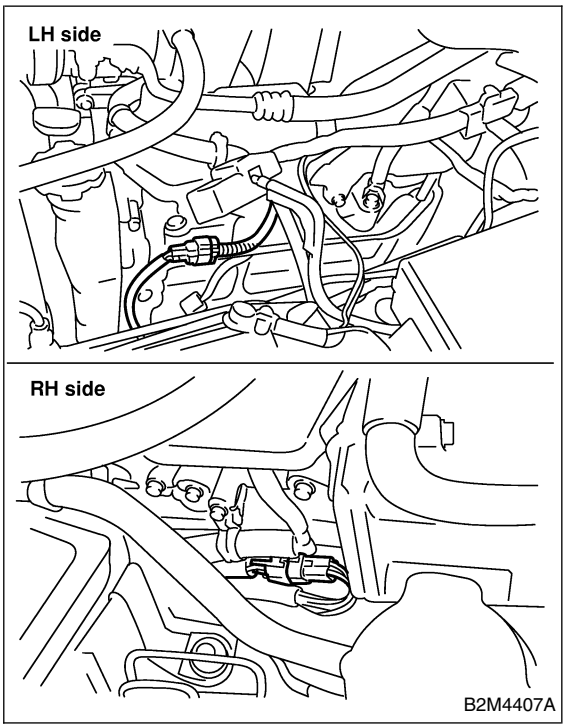
Tightening torque:
21 N·m (2.1 kgf-m, 15.2 ft-lb)


B2M4524


B2M4525

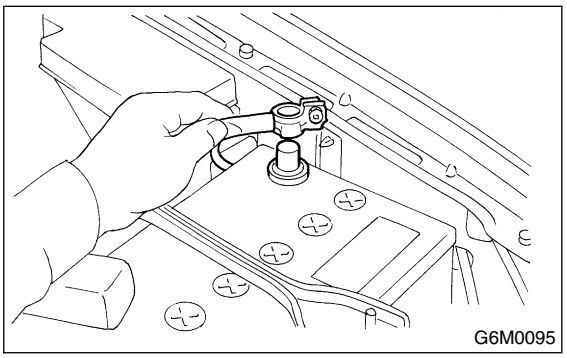
3) Install under cover.
4) Lower the vehicle.

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



B2M4407A

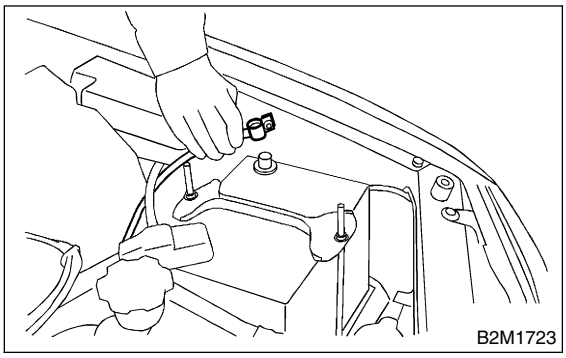
6) Connect battery ground cable.


G6M0095

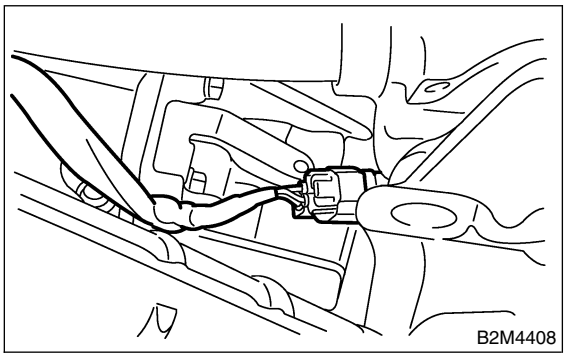
16. Rear Oxygen Sensor S145657

A: REMOVAL S145657A18

1) Disconnect battery ground cable.



2) Disconnect connector from rear oxygen sensor.

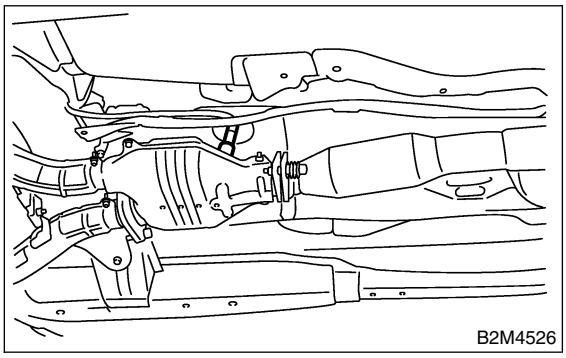


3) Lift-up the vehicle.
4) Apply SUBARU CRC or its equivalent to threaded portion of rear oxygen sensor, and leave it for one minute or more.

SUBARU CRC (Part No. 004301003)

5) Remove rear oxygen sensor.

CAUTION:
When removing, do not force rear oxygen sensor in an unnatural way especially when exhaust pipe is cold, otherwise it will damage exhaust pipe.



B: INSTALLATION S145657A11

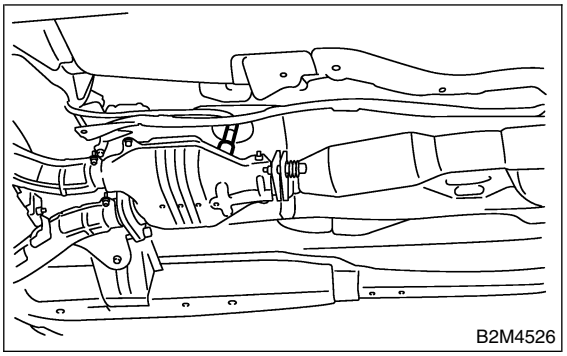
1) Before installing rear oxygen sensor, apply anti-seize compound only to threaded portion of rear oxygen sensor to make the next removal easier.

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

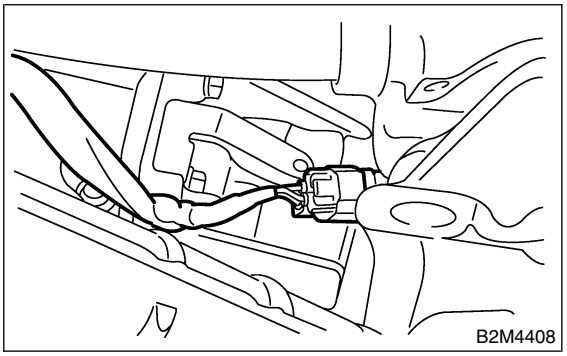
Anti-seize compound:
SS-30 by JET LUBE

2) Install rear oxygen sensor.

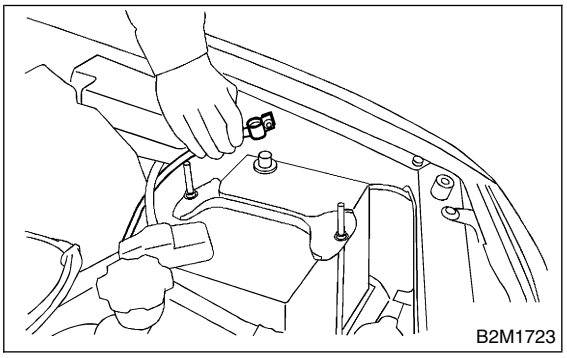
Tightening torque:
21 N·m (2.1 kgf-m, 15.2 ft-lb)



3) Connect connector to rear oxygen sensor.



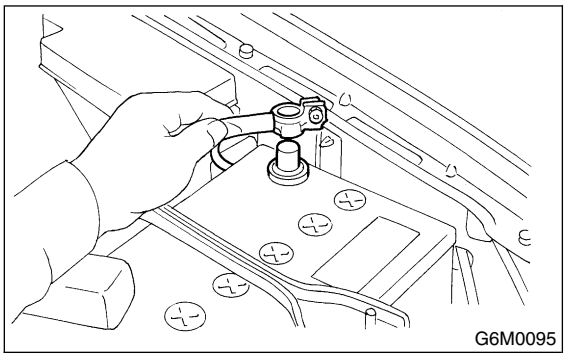
4) Lower the vehicle.
5) Connect battery ground cable.



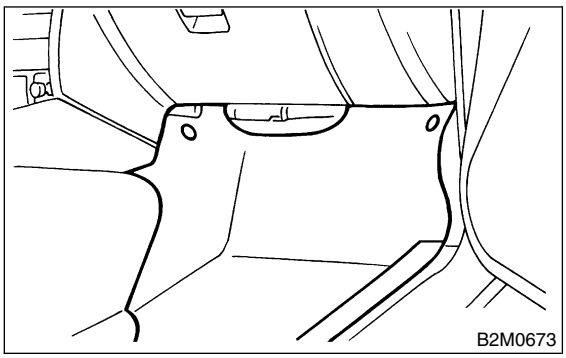
17. Engine Control Module S145049

A: REMOVAL S145049A18

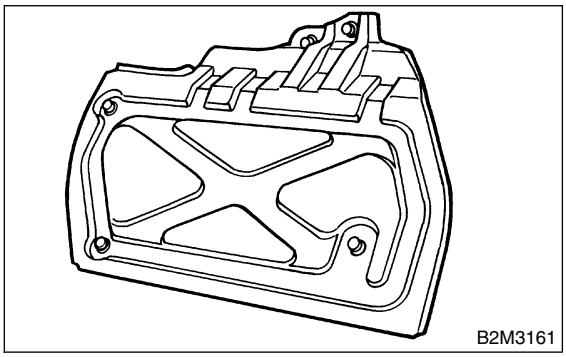
1) Disconnect battery ground cable.



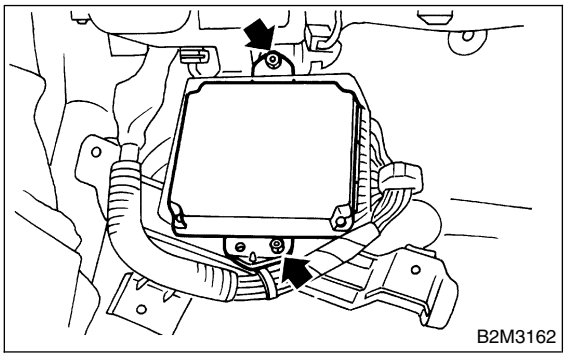
2) Remove lower inner trim of passenger side. <Ref. to EI-40, REMOVAL, Lower Inner Trim.>
3) Detach floor mat of front passenger seat.



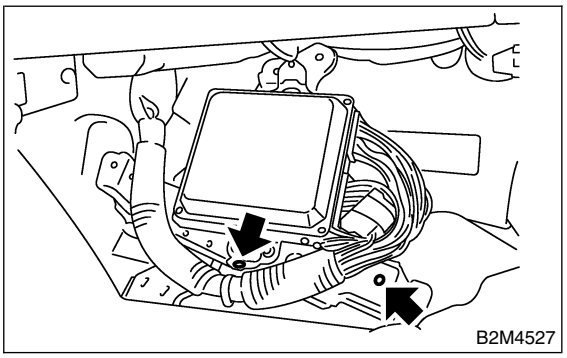
4) Remove protect cover.



5) Remove nuts which hold ECM to bracket.



6) Remove clip from bracket.



7) Disconnect ECM connectors and take out ECM.

B: INSTALLATION S145049A11

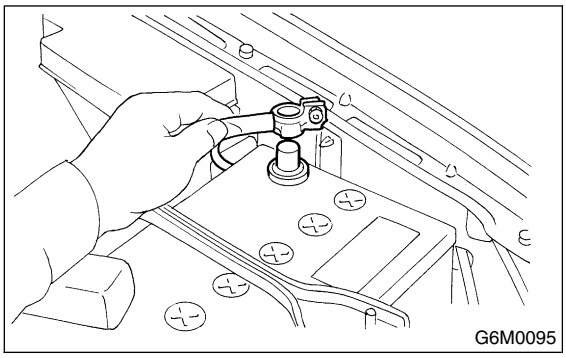
Install in the reverse order of removal.

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

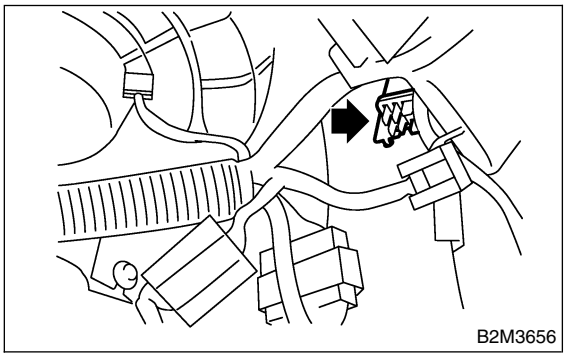
18. Main Relay S145050

A: REMOVAL S145050A18

1) Disconnect battery ground cable.


G6M0095

2) Remove lower inner trim of passenger side. <Ref. to EI-40, REMOVAL, Lower Inner Trim.>
3) Disconnect connectors from main relay.
4) Remove bolt which holds main relay bracket on body.


B2M3656

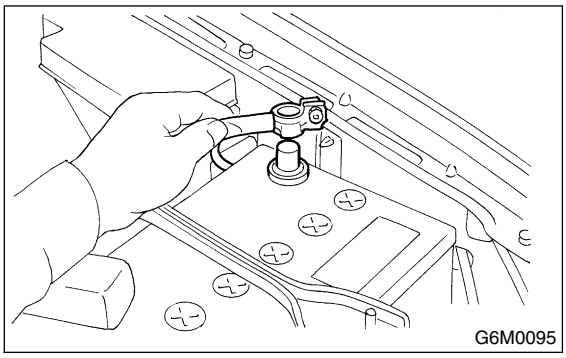
B: INSTALLATION S145050A11

Install in the reverse order of removal.

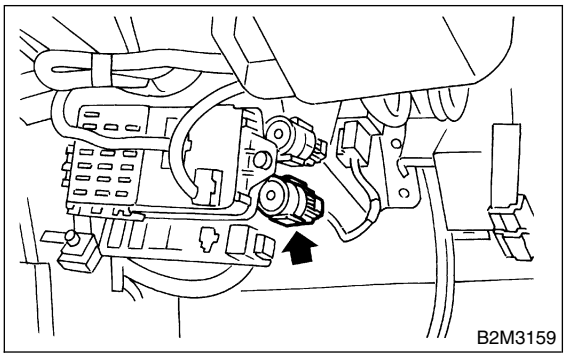
19. Fuel Pump Relay S145048

A: REMOVAL S145048A18

1) Disconnect battery ground cable.



2) Remove lower cover. <Ref. to EI-35, REMOVAL, Instrument Panel Assembly.>
3) Disconnect connector from fuel pump relay.



4) Remove fuel pump relay from mounting bracket.

B: INSTALLATION S145048A11

Install in the reverse order of removal.

20. Fuel S145052

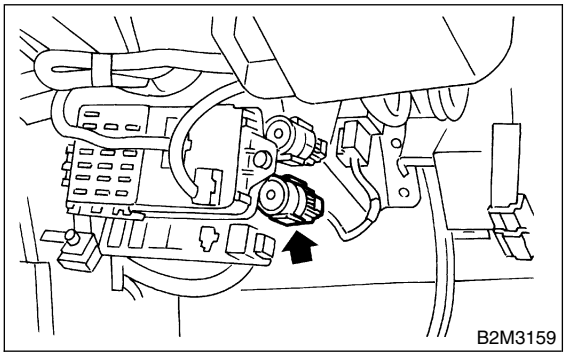
A: OPERATION S145052A16

1. RELEASING OF FUEL PRESSURE

S145052A1601

WARNING:
• Place “NO FIRE” signs near the working area.
• Be careful not to spill fuel on the floor.

1) Disconnect connector from fuel pump relay.

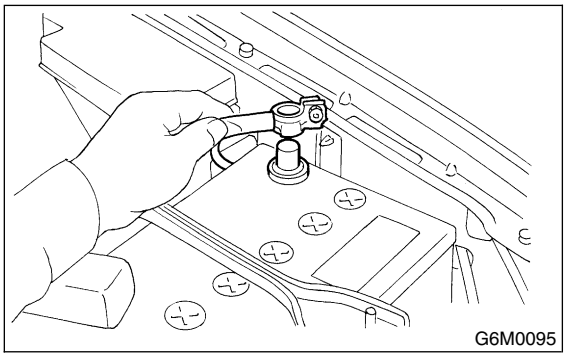


2) Start the engine and run it until it stalls.
3) After the engine stalls, crank it for five more seconds.
4) Turn ignition switch to OFF.

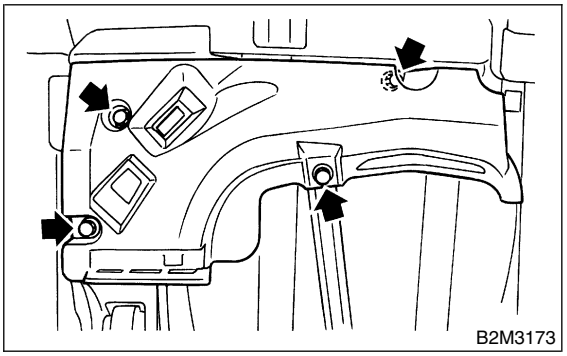
2. DRAINING FUEL S145052A1602

WARNING:
• Place “NO FIRE” signs near the working area.
• Be careful not to spill fuel on the floor.

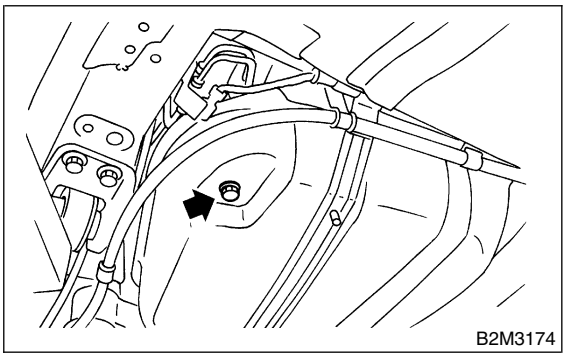
1) Set vehicle on the lift.
2) Disconnect battery ground cable.



3) Lift-up the vehicle.
4) Remove front right side fuel tank cover.

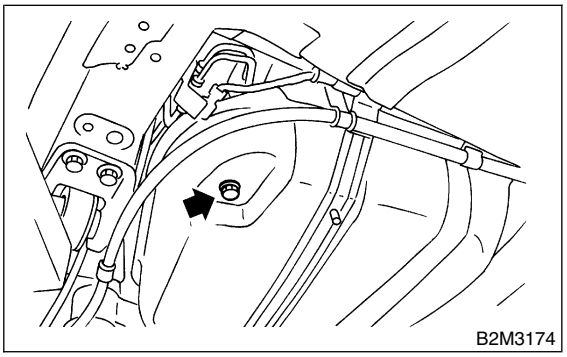


5) Drain fuel from fuel tank.
Set a container under the vehicle and remove drain plug from fuel tank.

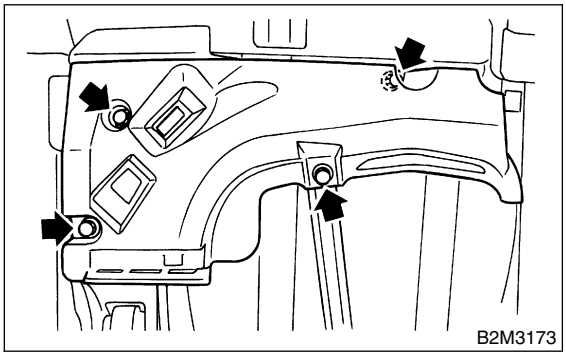


6) Tighten fuel drain plug and install front right side tank cover.

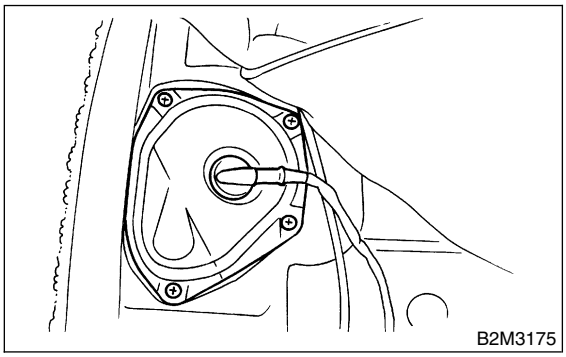
Tightening torque:
26 N·m (2.65 kgf-m, 19.2 ft-lb)



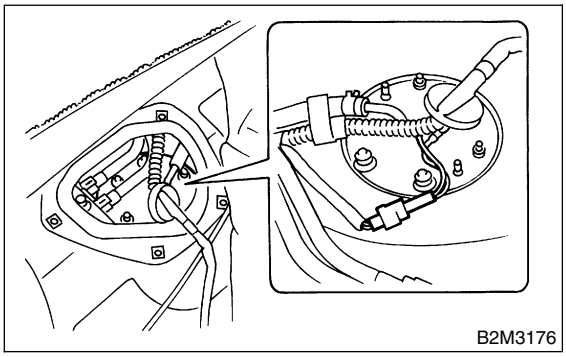
Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)


B2M3173

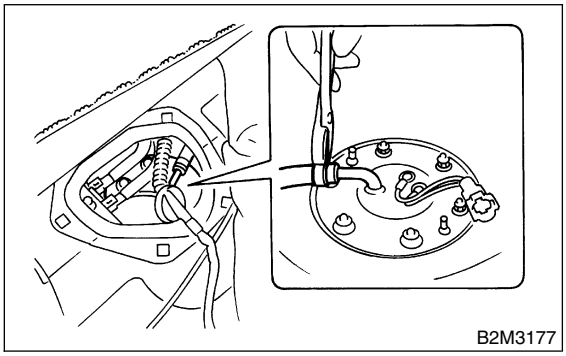
7) Lower the vehicle.
8) Remove sub service hole cover.


B2M3175

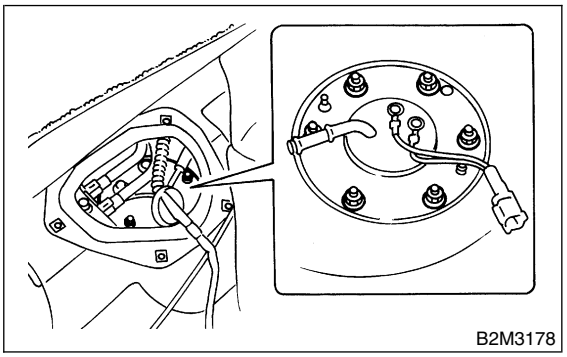
9) Disconnect connector from fuel sub level sensor.


B2M3176

10) Disconnect fuel jet pump hose.


B2M3177

11) Remove fuel sub level sensor.

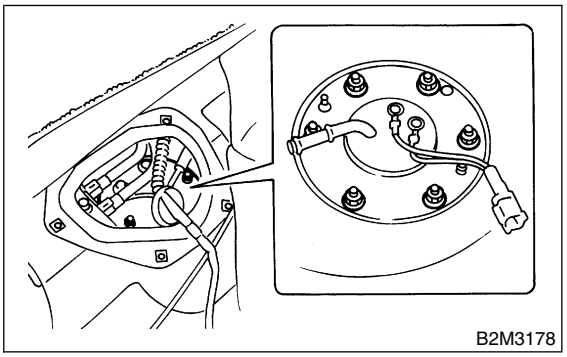

B2M3178

12) Drain fuel from fuel tank by using hand pump.

WARNING:
Do not use a motor pump when draining fuel.

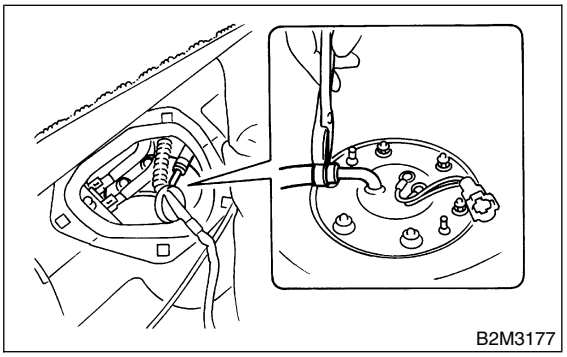
13) After draining fuel, reinstall fuel sub level sensor.

Tightening torque:
4.4 N·m (0.45 kgf-m, 3.3 ft-lb)

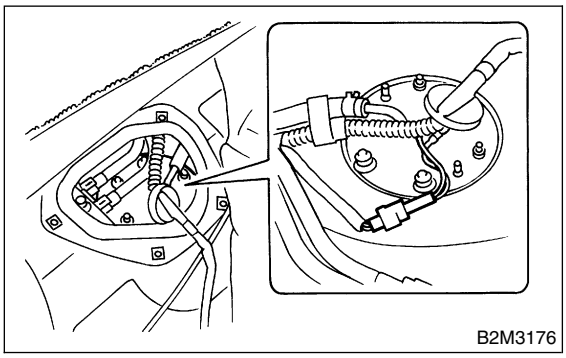

B2M3178

NOTE:
If you have not removed fuel tank yet, proceed with the procedure below for installation.

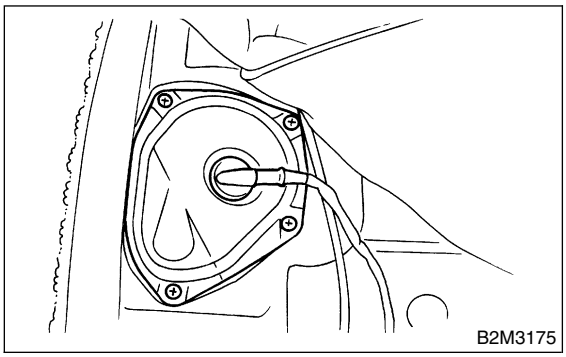
(1) Connect fuel jet pump hose.


B2M3177

(2) Connect connector from fuel sub level sensor.



(3) Install sub service hole cover.

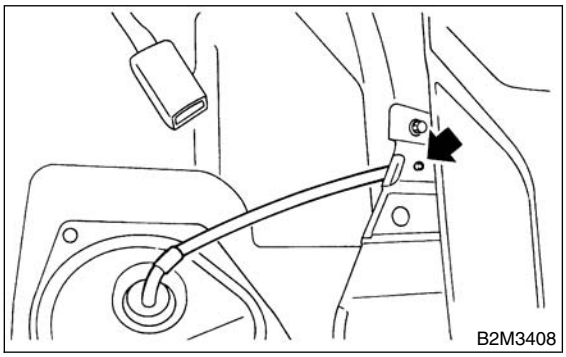


(4) Set rear seat and floor mat.

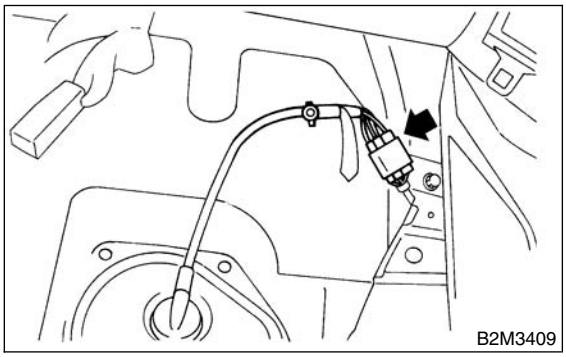
21. Fuel Tank S145053

A: REMOVAL S145053A18

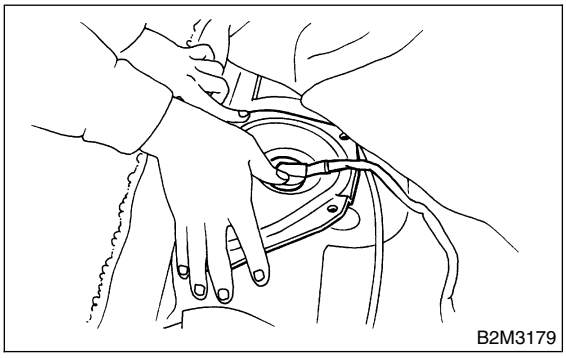
1) Set vehicle on the lift.
2) Release fuel pressure. <Ref. to FU(H6)-49, RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
3) Drain fuel from fuel tank. <Ref. to FU(H6)-49, DRAINING FUEL, OPERATION, Fuel.>
4) Remove holder clip which secures fuel tank cord on bracket.


B2M3408

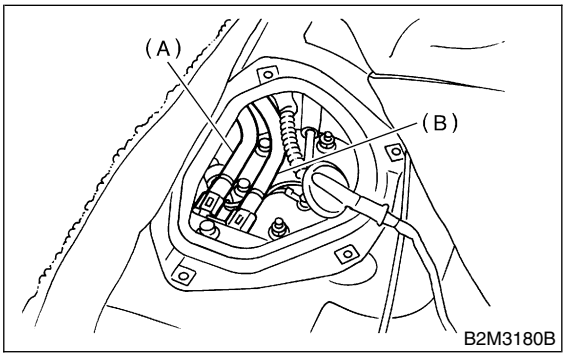
5) Disconnect connector of fuel tank cord to rear harness.


B2M3409

6) Push grommet which holds fuel tank cord on service hole cover into body side.

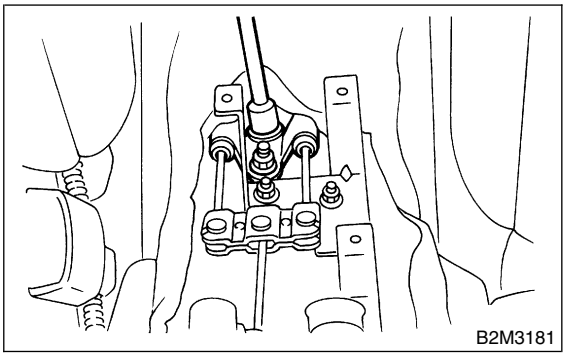

B2M3179

7) Separate quick connector of fuel delivery (A) and return hose (B). <Ref. to FU(H6)-72, REMOVAL, Fuel Delivery, Return and Evaporation Lines.>

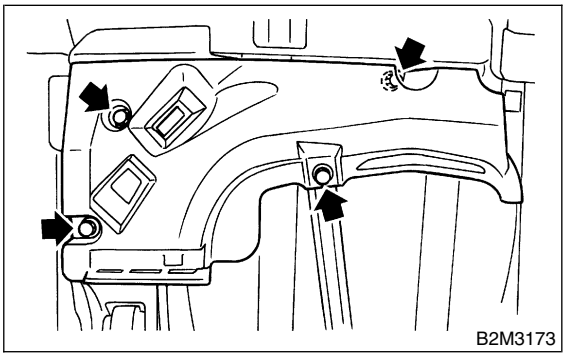


B2M3180B

8) Remove parking brake cable.
(1) Remove console box console. <Ref. to EI-34, REMOVAL, Console Box.>
(2) Remove parking brake bracket and disconnect parking brake cable from equalizer. <Ref. to PB-7, REMOVAL, Parking Brake.>

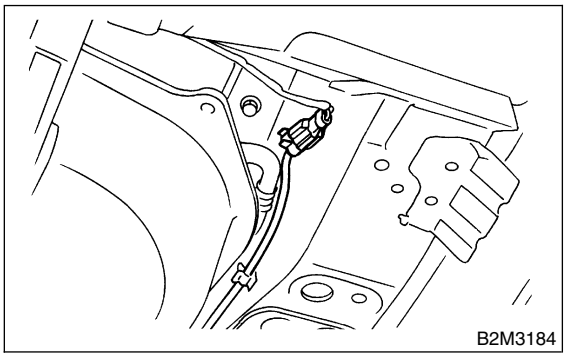

B2M3181

9) Remove wheel nuts from rear wheels.
10) Lift-up the vehicle.
11) Remove rear wheel.
12) Remove front side fuel tank cover.

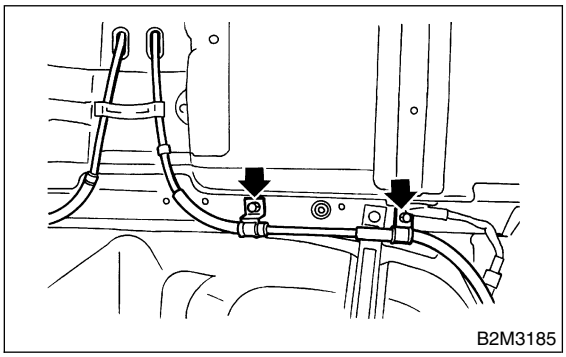

B2M3173

13) Remove rear exhaust pipe and muffler. <Ref. to EX(H6)-9, REMOVAL, Muffler.> and <Ref. to EX(H6)-8, REMOVAL, Rear Exhaust Pipe.>
14) Remove propeller shaft. <Ref. to DS-13, REMOVAL, Propeller Shaft.>

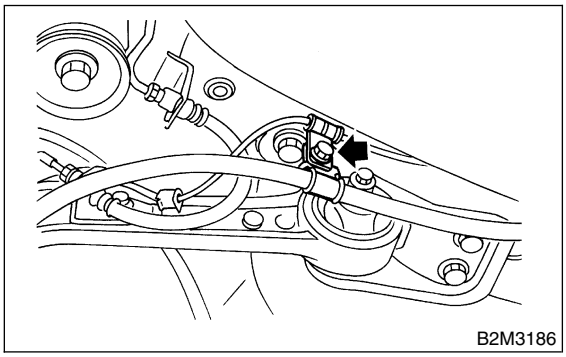
15) Disconnect connector from ABS sensor.


B2M3184

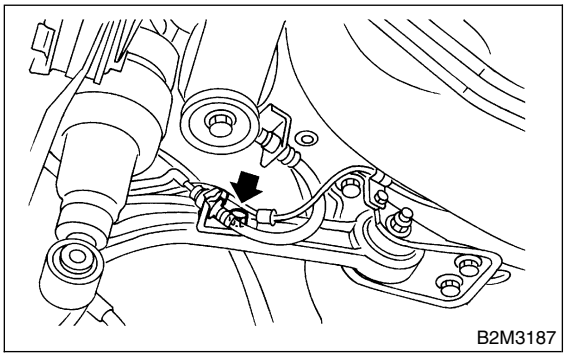
16) Remove bolts which hold parking brake cable holding bracket.
17) Remove parking brake cable from cabin by forcibly pulling it backward.


B2M3185

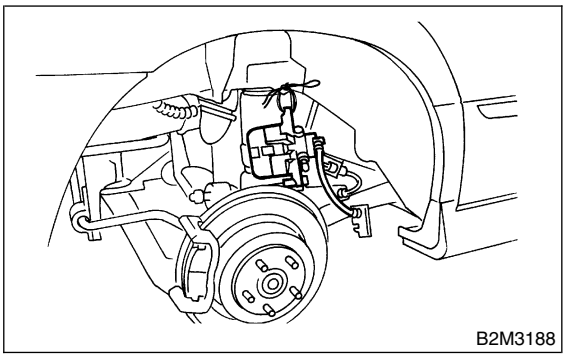
18) Remove bolts which hold parking brake cable holding bracket.


B2M3186

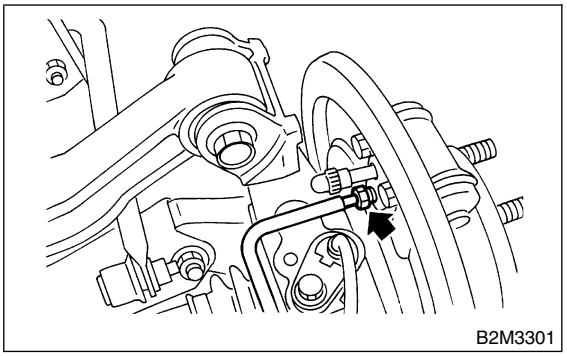
19) Remove bolts which hold rear brake hoses holding bracket.


B2M3187

20) Remove rear brake caliper, then tie it up to the body side of the vehicle as shown in figure. (Rear disk brake model)


B2M3188

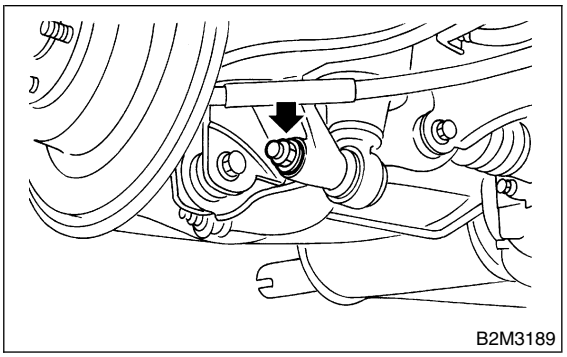
21) Disconnect brake pipes from wheel cylinder. (Rear drum brake model) <Ref. to BR-39, REMOVAL, Rear Drum Brake Shoe.>


B2M3301

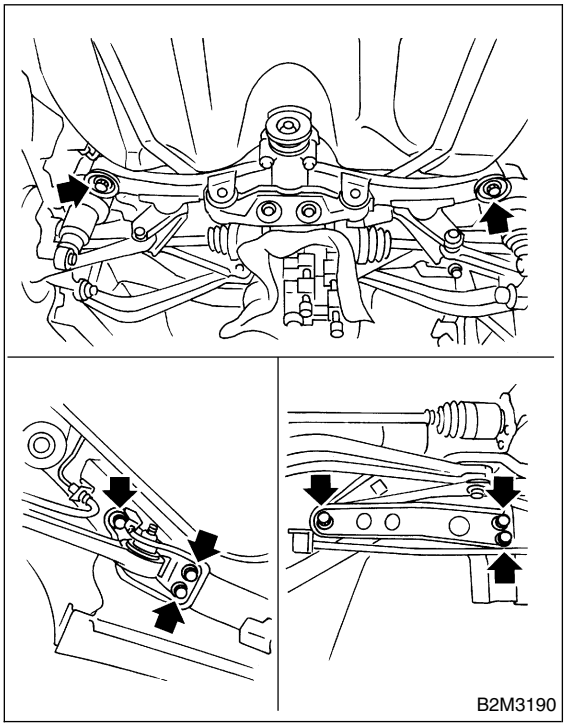
22) Remove rear suspension assembly.

WARNING:
A helper is required to perform this work.

(1) Support rear differential with transmission jack.
(2) Remove bolt which holds rear shock absorber to rear suspension arm.

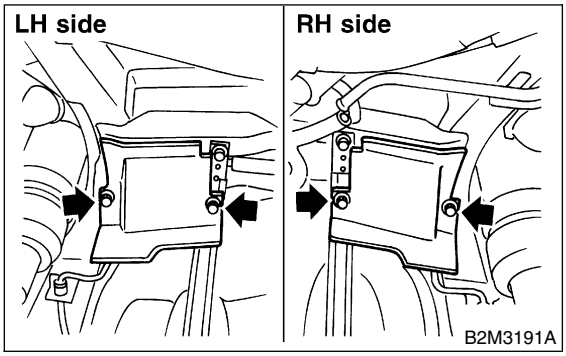

B2M3189

(3) Remove bolts which secure rear suspension assembly to body.

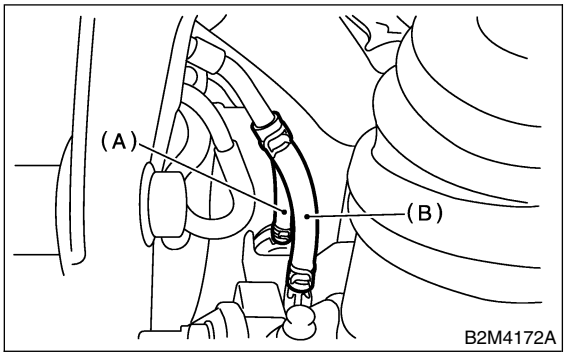


(4) Remove rear suspension assembly.

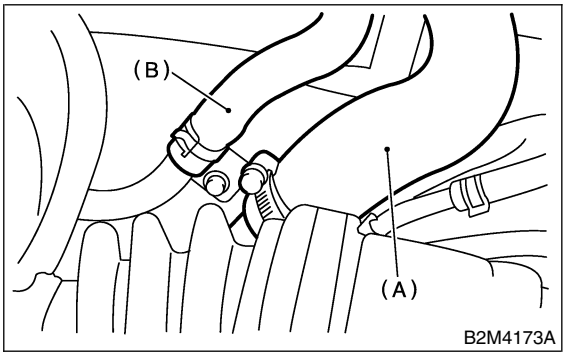
23) Remove rear side fuel tank cover.



24) Disconnect two-way valve hose (A) from two-way valve and disconnect evaporation hose (B) from evaporation pipe.

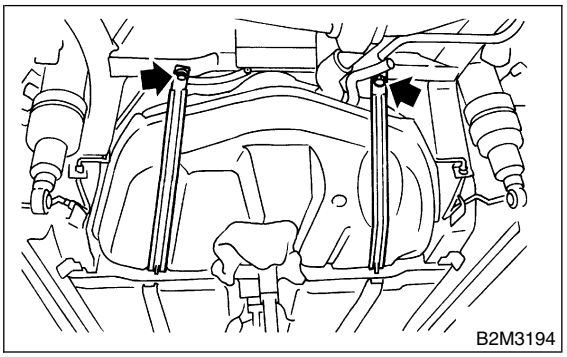


25) Loosen clamp and disconnect fuel filler hose (A) and air vent hose (B) from fuel filler pipe.



26) Support fuel tank with transmission jack, remove bolts from bands and dismount fuel tank from the vehicle.

WARNING:
A helper is required to perform this work.

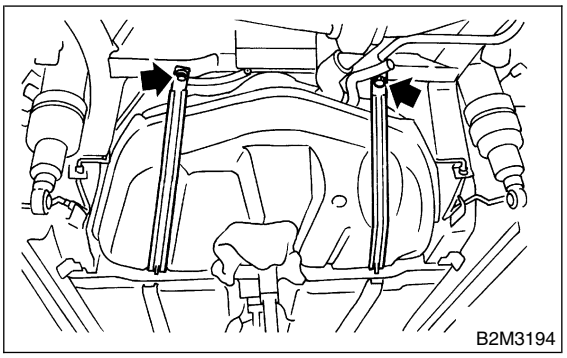


B: INSTALLATION S145053A11

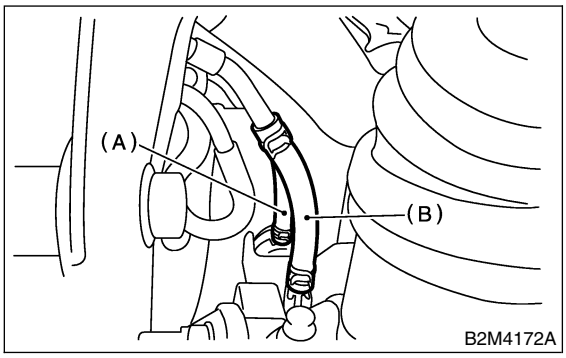
1) Support fuel tank with transmission jack and push fuel tank harness into access hole with grommet.

2) Set fuel tank and temporarily tighten bolts of fuel tank bands.

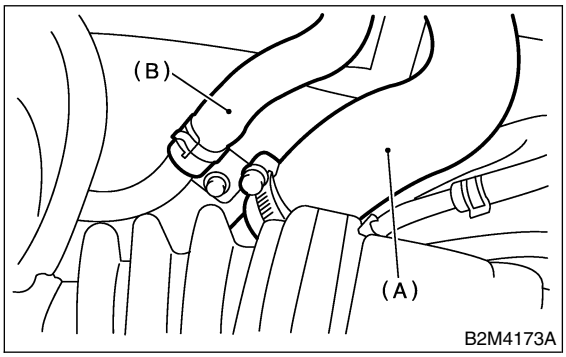
WARNING:
A helper is required to perform this work.



3) Connect two-way valve hose (A) to two-way valve and connect evaporation hose (B) to evaporation pipe.

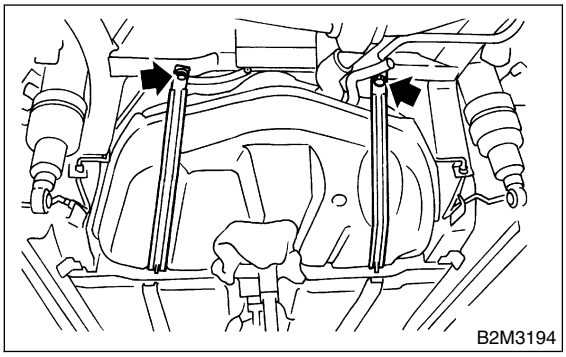


4) Connect fuel filler hose (A) and air vent hose (B).



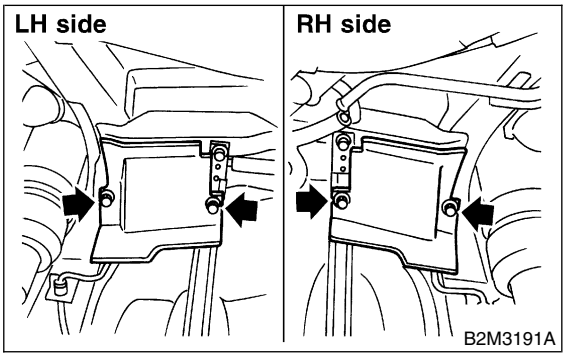
5) Tighten band mounting bolts.

Tightening torque:
33 N·m (3.4 kgf-m, 25 ft-lb)



6) Install rear side fuel tank cover.

Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)

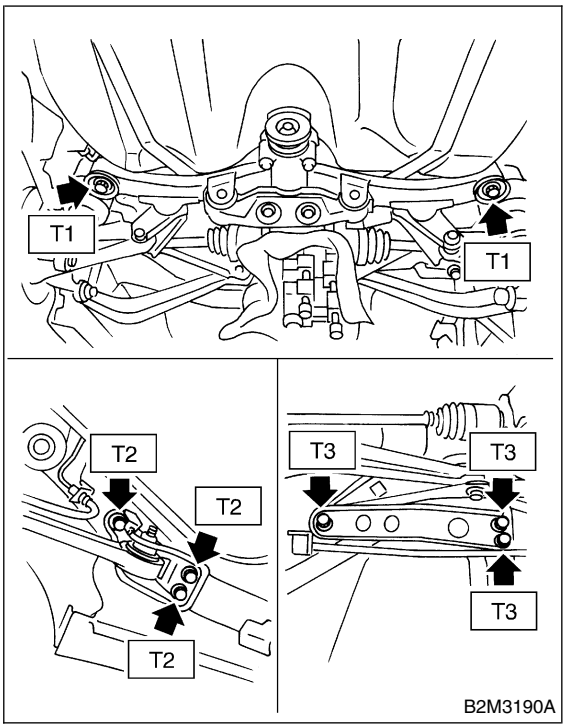


7) Install rear suspension assembly.

WARNING:
A helper is required to perform this work.

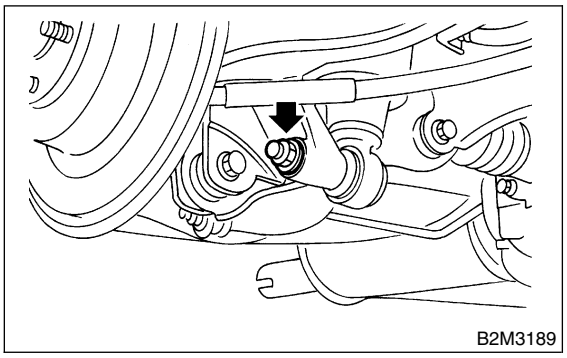
(1) Support rear suspension assembly and then tighten bolts which secure rear suspension assembly.

Tightening torque:
T1: 172 N·m (17.5 kgf-m, 127 ft-lb)
T2: 108 N·m (11.0 kgf-m, 80 ft-lb)
T3: 66 N·m (6.7 kgf-m, 48 ft-lb)

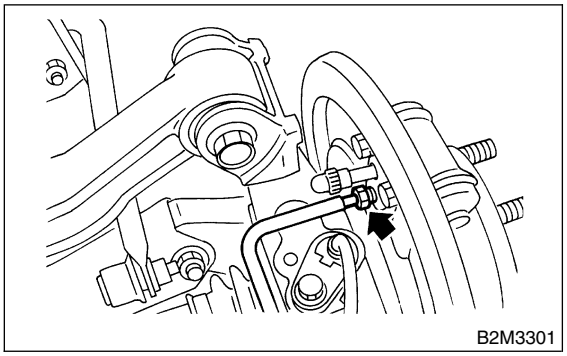


(2) Tighten bolt which holds rear shock absorber to rear suspension arm. <Ref. to RS-19, INSTALLATION, Link Upper.>

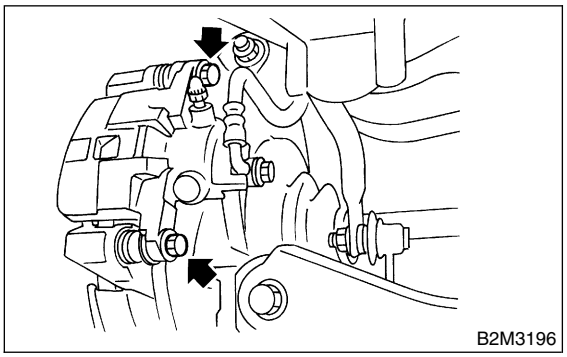
Tightening torque:
157 N·m (16 kgf-m, 116 ft-lb)


B2M3189

8) Connect brake pipes to wheel cylinder. (Rear drum brake model) <Ref. to BR-45, INSTALLATION, Rear Drum Brake Assembly.>

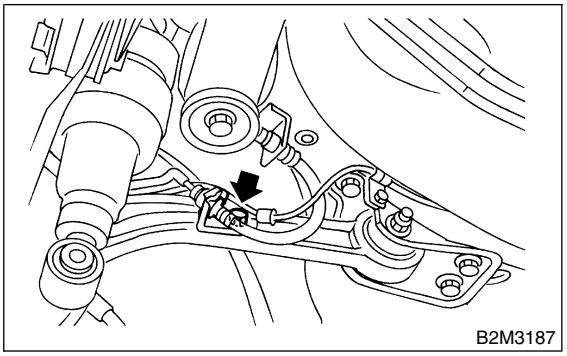

B2M3301

9) Install rear brake caliper. (Rear disk brake model) <Ref. to BR-36, INSTALLATION, Rear Disc Brake Assembly.>


B2M3196

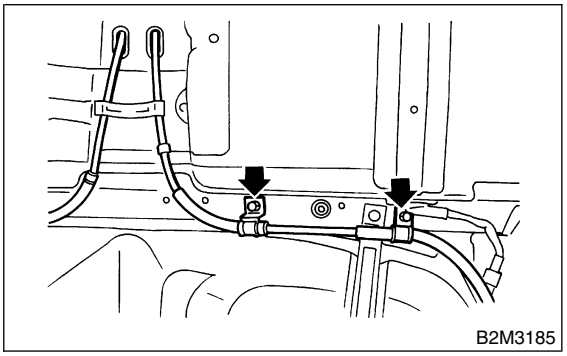
10) Tighten bolt which holds rear brake hoses holding bracket.

Tightening torque:
33 N·m (3.4 kgf-m, 25 ft-lb)

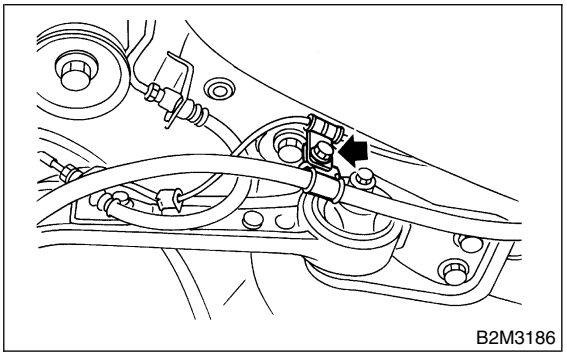

B2M3187

11) Install parking brake cable to cabin by forcibly pushing it forward.
12) Tighten bolts which hold parking brake cable holding bracket.

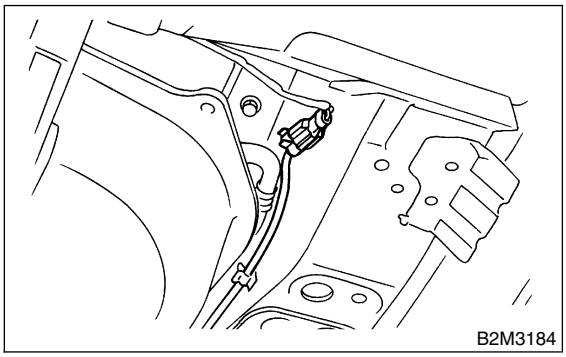
Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)


B2M3185

Tightening torque:
32 N·m (3.3 kgf-m, 23.9 ft-lb)

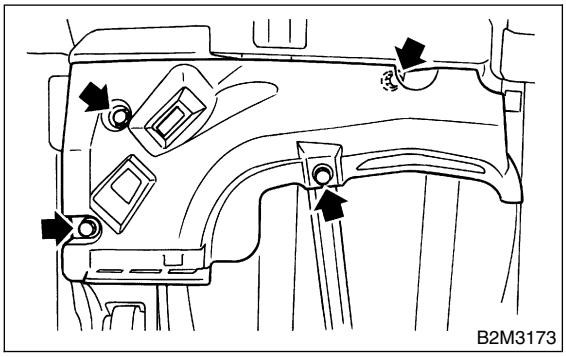

B2M3186

13) Connect connector to ABS sensor.

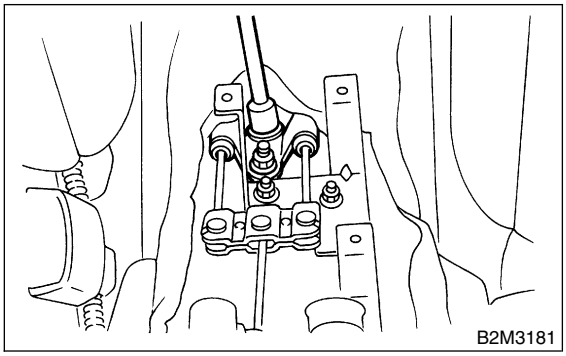


14) Install propeller shaft. <Ref. to DS-14, INSTALLATION, Propeller Shaft.>
15) Install rear exhaust pipe and muffler. <Ref. to EX(H6)-9, INSTALLATION, Muffler.> and <Ref. to EX(H6)-8, INSTALLATION, Rear Exhaust Pipe.>
16) Install front side fuel tank cover.

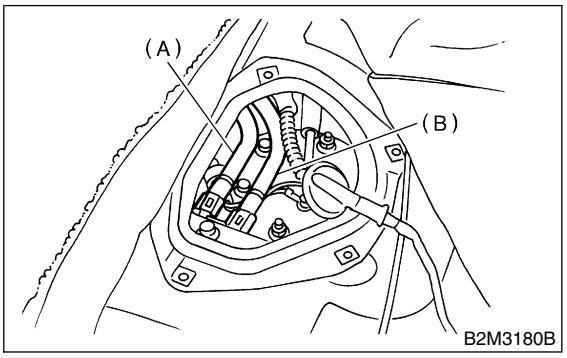
Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)



17) Install rear wheel.
18) Lower the vehicle.
19) Tighten wheel nuts to rear wheel.
20) Install parking brake cable. <Ref. to PB-6, INSTALLATION, Parking Brake Lever.>

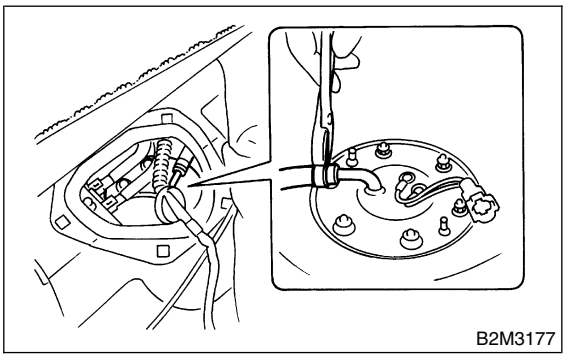


21) Install console box. <Ref. to EI-34, INSTALLATION, Console Box.>
22) Connect fuel hoses and hold them with quick connector. <Ref. to FU(H6)-73, INSTALLATION, Fuel Delivery, Return and Evaporation Lines.>

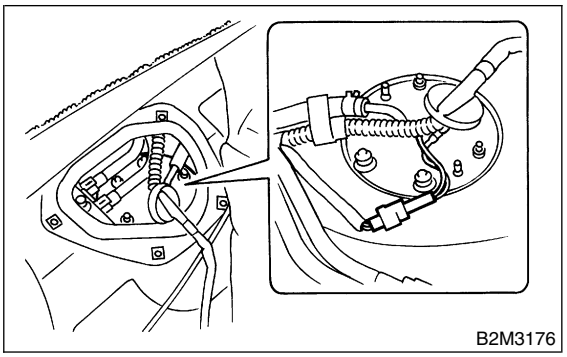


(A) Delivery hose
(B) Return hose

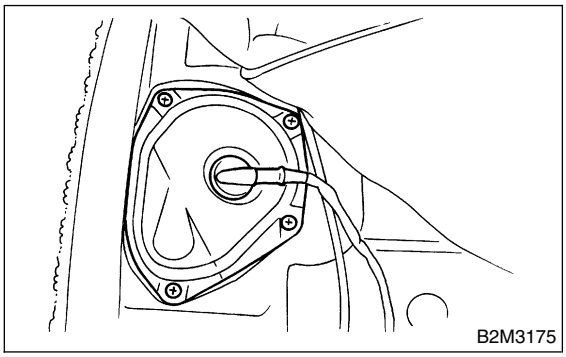
23) Connect fuel jet pump hose.



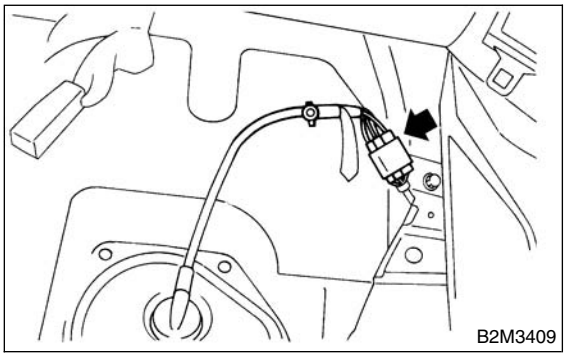
24) Connect connector to fuel sub level sensor.



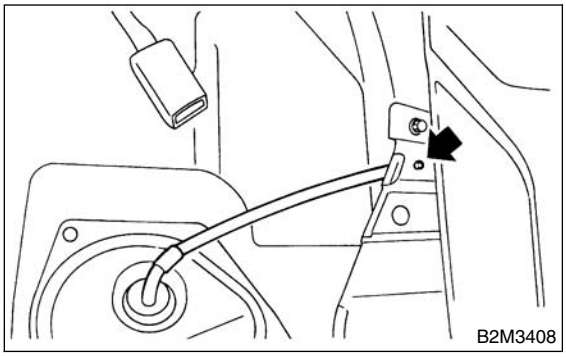
25) Install sub service hole cover.



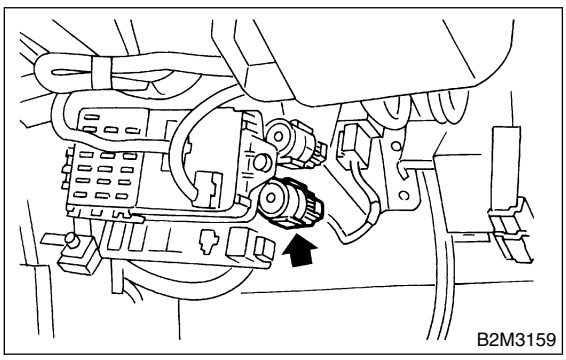
26) Connect connectors to fuel tank cord and plug service hole with grommet.



27) Install holder clip which secures fuel tank cord on bracket.



28) Set rear seat and floor mat.
29) Connect connector to fuel pump relay.



30) Bleed air from brake system. (Rear drum brake model only) <Ref. to BR-62, BRAKE LINE, PROCEDURE, Air Bleeding.>

31) Adjust parking brake lever stroke. <Ref. to PB-11, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>
32) Check wheel alignment and adjust if necessary. <Ref. to FS-6, INSPECTION, Wheel Alignment.>

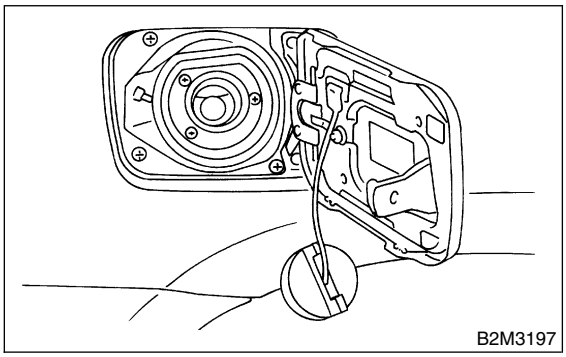
C: INSPECTION S145053A10

1) Make sure there are no cracks, holes, or other damage on the fuel tank.
2) Make sure that the fuel hoses and fuel pipes are not cracked and that connections are tight.

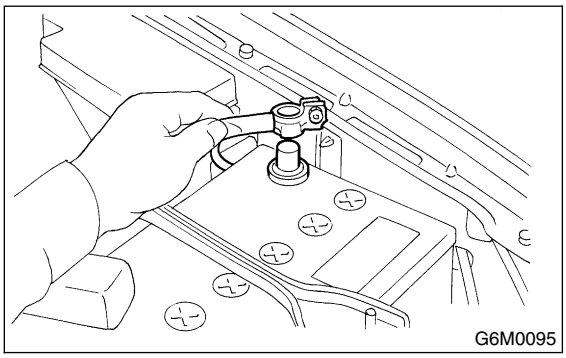
22. Fuel Filler Pipe S145022

A: REMOVAL S145022A18

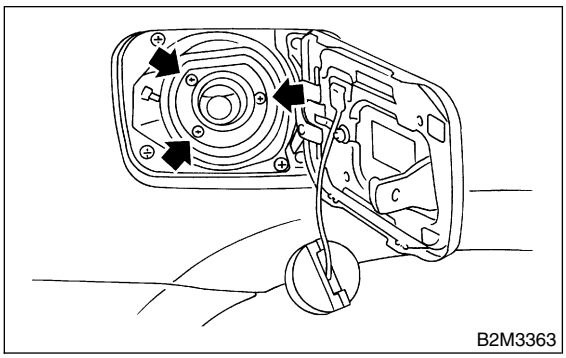
1) Release fuel pressure. <Ref. to FU(H6)-49 RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
2) Open fuel filler flap lid and remove filler cap.


B2M3197

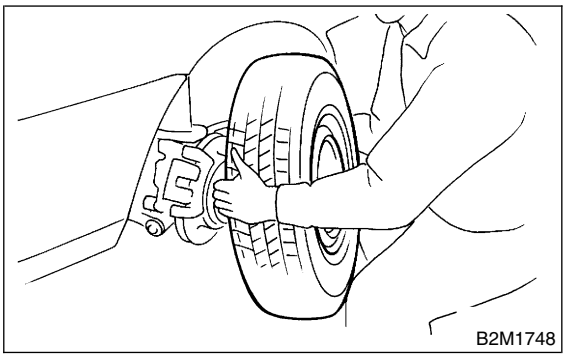
3) Disconnect battery ground cable.


G6M0095

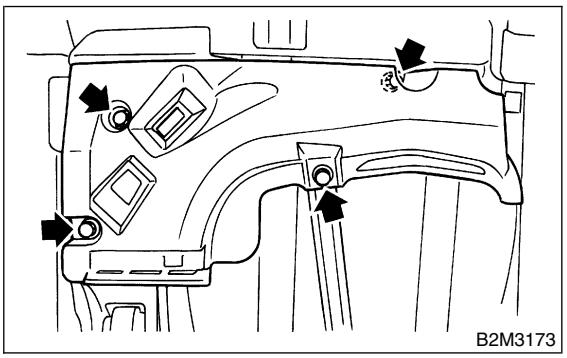
4) Remove screws holding packing in place.


B2M3363

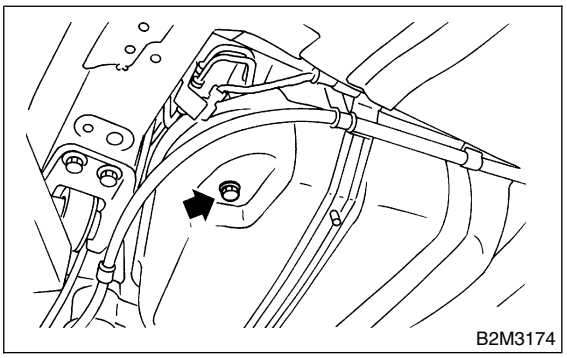
5) Lift-up the vehicle.
6) Remove rear right side wheel nuts.
7) Remove rear right side wheel.


B2M1748

8) Remove front right side fuel tank cover.

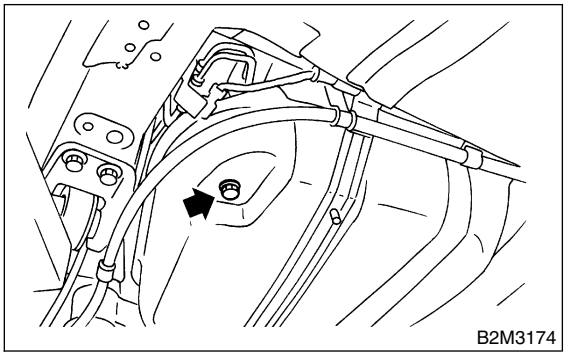

B2M3173

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

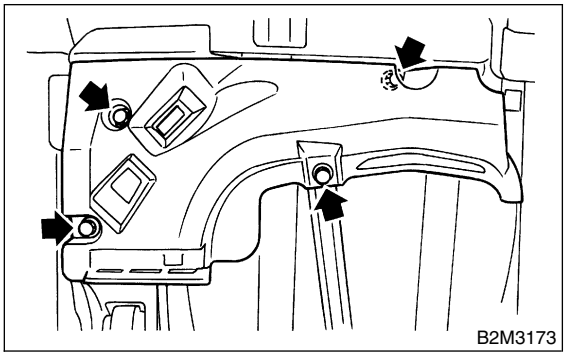

B2M3174

10) Tighten fuel drain plug and then install front right side tank cover.

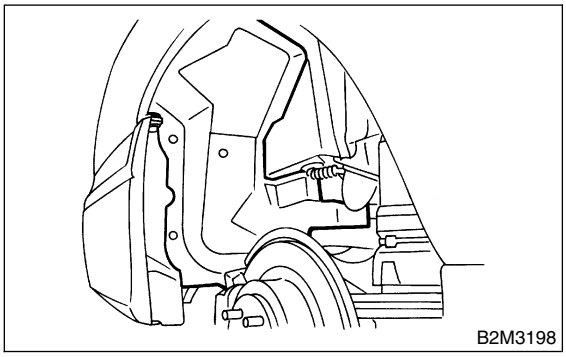
Tightening torque:
26 N·m (2.65 kgf-m, 19.2 ft-lb)


B2M3174

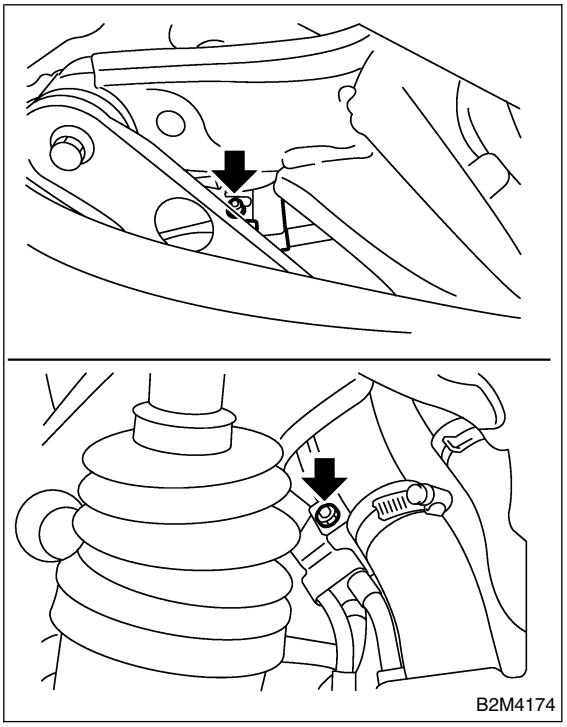
Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)


B2M3173

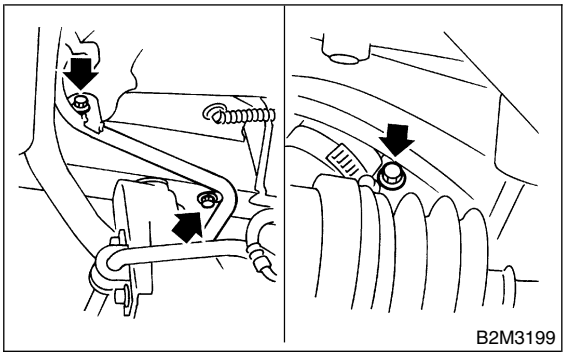
11) Remove fuel filler pipe protector.


B2M3198

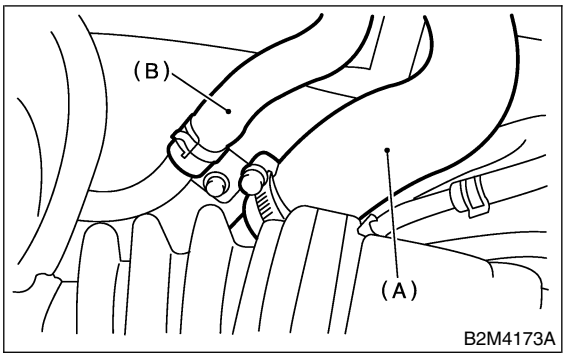
12) Remove bolts which hold evaporation pipe bracket on fuel filler pipe.


B2M4174

13) Remove bolts which hold fuel filler pipe bracket on body.


B2M3199

14) Loosen clamp and separate fuel filler hose (A) from fuel filler pipe.
15) Move clip and separate air vent hose (B).

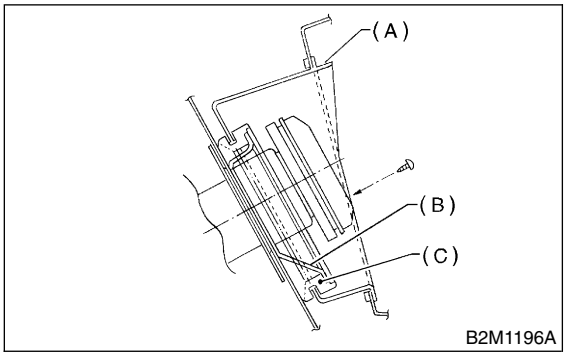


B2M4173A

16) Remove fuel filler pipe to under side of the vehicle.

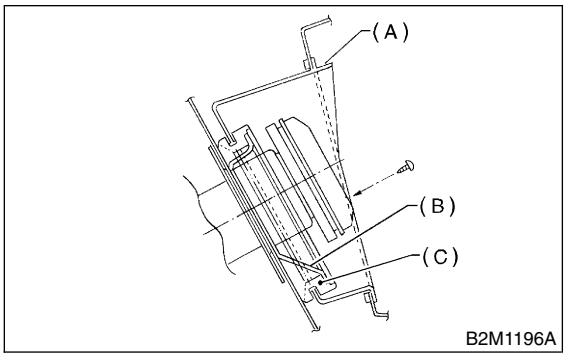
B: INSTALLATION S145022A11

1) Hold fuel filler flap open.
2) Set fuel saucer (A) with rubber packing (C) and insert fuel filler pipe into hole from the inner side of apron.



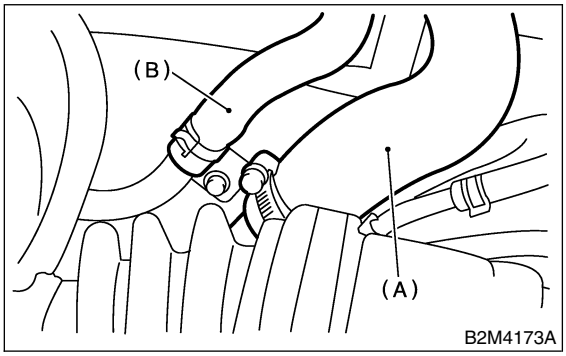
3) Align holes in fuel filler pipe neck and set cup (B), and tighten screws.

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



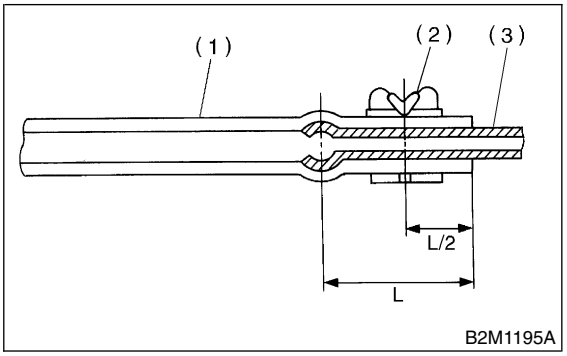
4) Insert fuel filler hose (A) approximately 35 to 40 mm (1.38 to 1.57 in) over the lower end of fuel filler pipe and tighten clamp.

CAUTION:
Do not allow clips to touch air vent hose (B) and rear suspension crossmember.



5) Insert air vent hose approximately 25 to 30 mm (0.98 to 1.18 in) into the lower end of air vent pipe and hold clip.

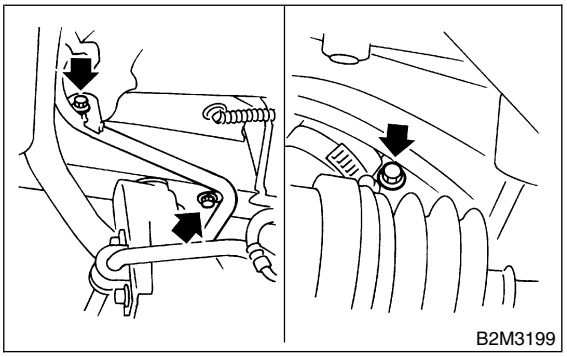
L = 27.5±2.5 mm (1.083±0.098 in)



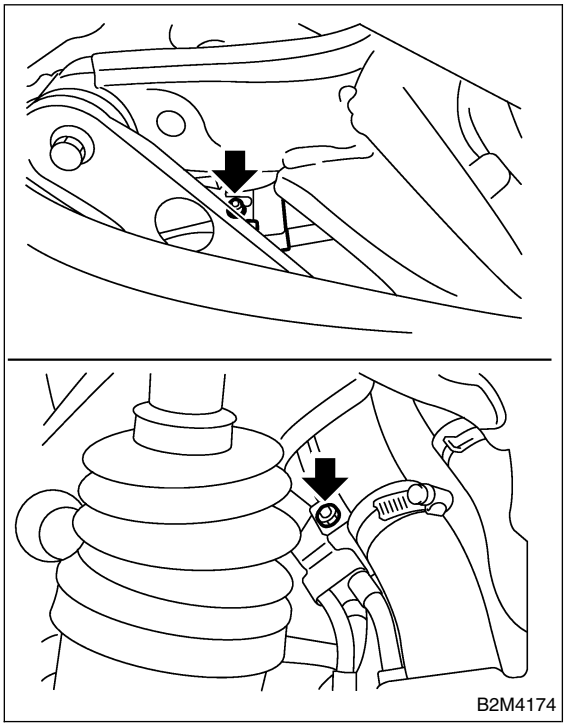
(1) Hose
(2) Clip
(3) Pipe

6) Tighten bolt which holds fuel filler pipe bracket on body.

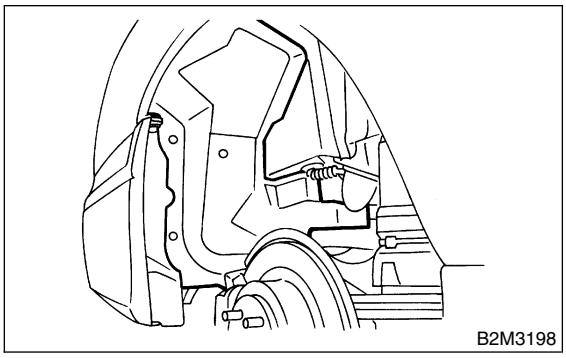
Tightening torque:
7.4 N·m (0.75 kgf-m, 5.4 ft-lb)



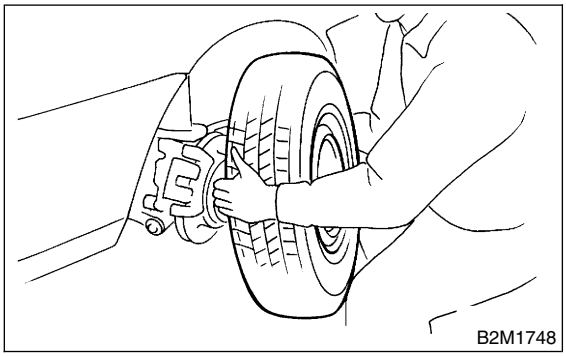
7) Tighten bolts which hold evaporation pipe bracket on fuel pipe



8) Install fuel filler pipe protector.

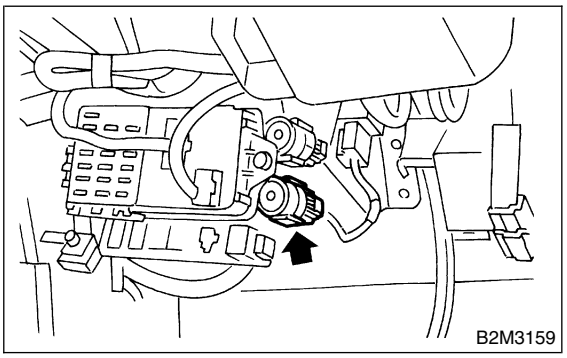


9) Install rear right wheel.

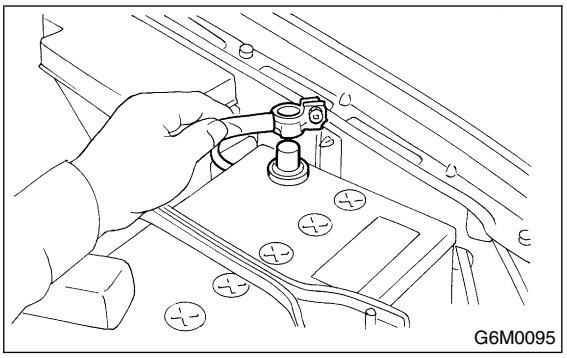


10) Lower the vehicle.
11) Tighten wheel nuts.

12) Connect connector to fuel pump relay.



13) Connect battery ground terminal.



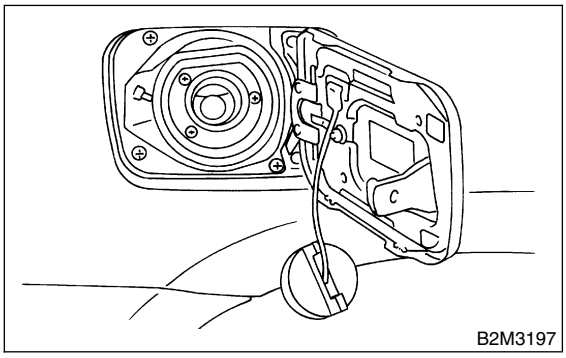
23. Fuel Pump S145025

A: REMOVAL S145025A18

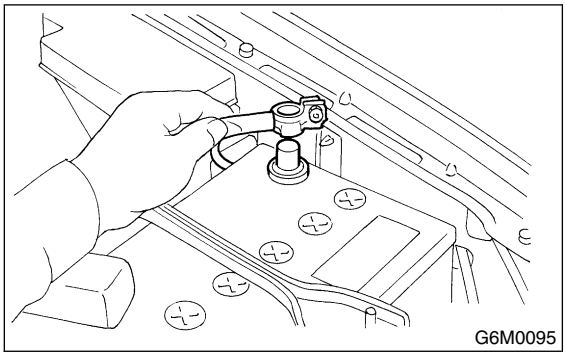
WARNING:
• Place “NO FIRE” signs near the working area.
• Be careful not to spill fuel on the floor.

NOTE:
Fuel pump assembly consists of fuel pump and fuel level sensor.

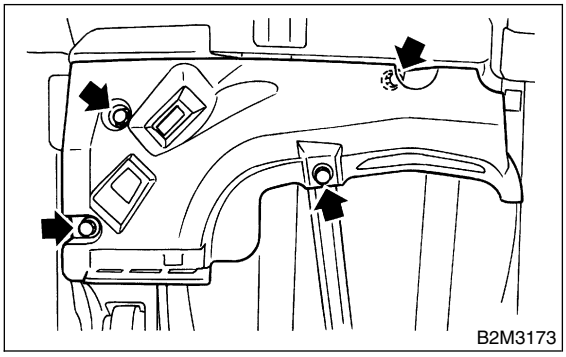
1) Release fuel pressure. <Ref. to FU(H6)-49 RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
2) Open fuel filler flap lid and remove fuel filler cap.


B2M3197

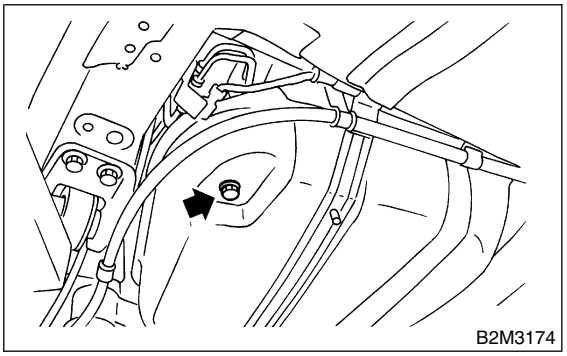
3) Disconnect battery ground cable.


G6M0095

4) Lift-up the vehicle.
5) Remove front side fuel tank cover.

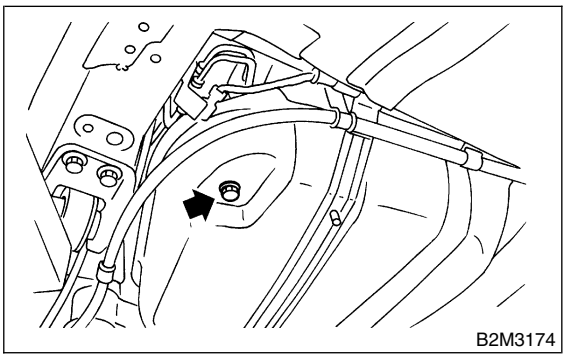

B2M3173

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

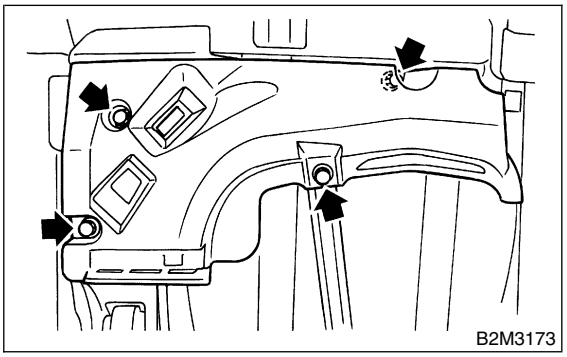

B2M3174

7) Tighten fuel drain plug and install front right side fuel tank cover.

Tightening torque:
26 N·m (2.65 kgf-m, 19.2 ft-lb)

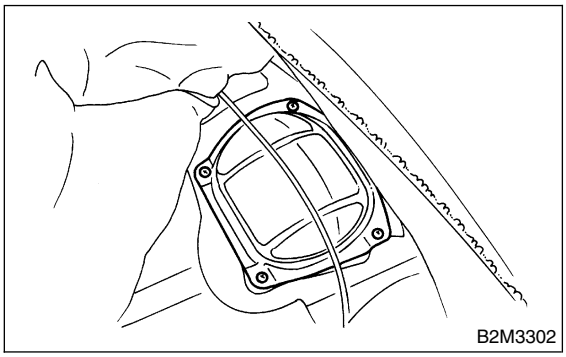

B2M3174

Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)

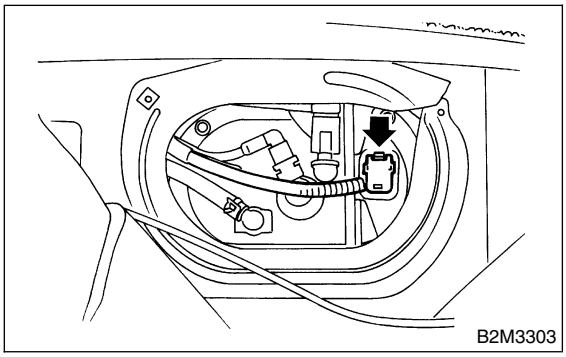

B2M3173

8) Raise rear seat and turn floor mat up.

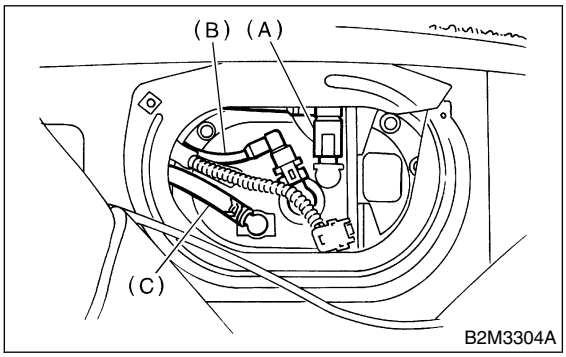
9) Remove access hole lid.


B2M3302

10) Disconnect connector from fuel pump.

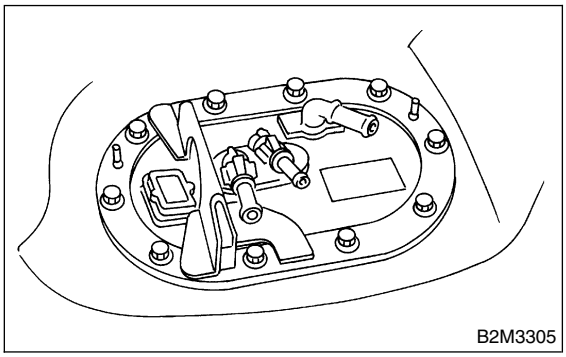

B2M3303

11) Move clips and then disconnect jet pump hose (C).
12) Disconnect quick connector and then disconnect fuel delivery hose (A) and return hose (B). <Ref. to FU(H6)-72 REMOVAL, Fuel Delivery, Return and Evaporation Lines.>



B2M3304A

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

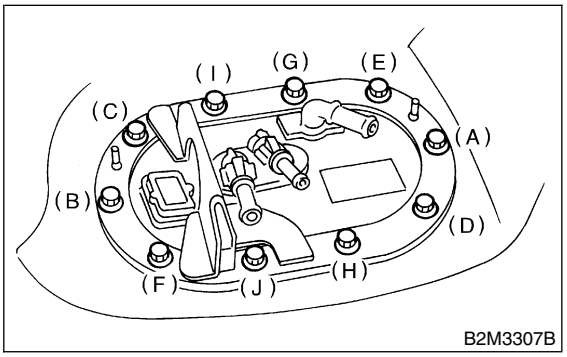

B2M3305

14) Take off fuel pump assembly from fuel tank.

B: INSTALLATION S145025A11

Install in the reverse order of removal. Do the following:
(1) Always use new gaskets.
(2) Ensure sealing portion is free from fuel or foreign particles before installation.
(3) Tighten nuts in alphabetical sequence shown in figure to specified torque.

Tightening torque:
5.9 N·m (0.6 kgf-m, 4.3 ft-lb)

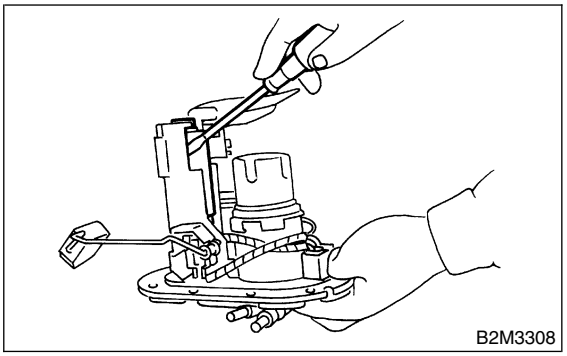


B2M3307B

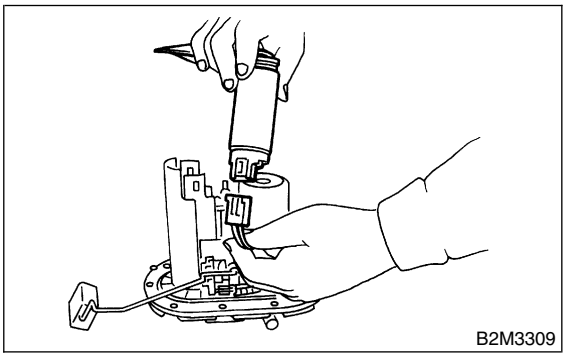
C: DISASSEMBLY S145025A06

1) Remove fuel pump and pump holder.

NOTE:
When disassembling pump holder, be careful as it is installed with two pawls.


B2M3308

2) Disconnect connector from fuel pump.


B2M3309

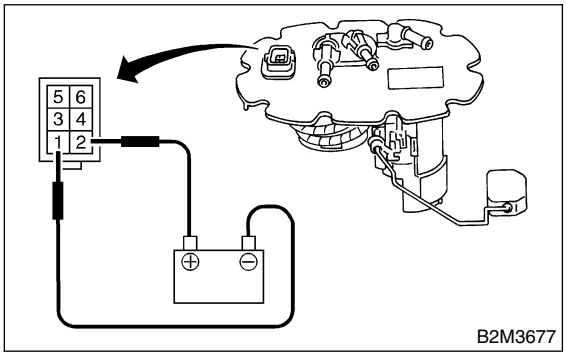
D: ASSEMBLY S145025A02

Assemble in the reverse order of disassembly.

E: INSPECTION S145025A10

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

WARNING:
- **Wipe off the fuel completely.**
- **Keep battery as far apart from fuel pump as possible.**
- **Be sure to turn the battery supply ON and OFF on the battery side.**
- **Do not run fuel pump for a long time under no-load condition.**



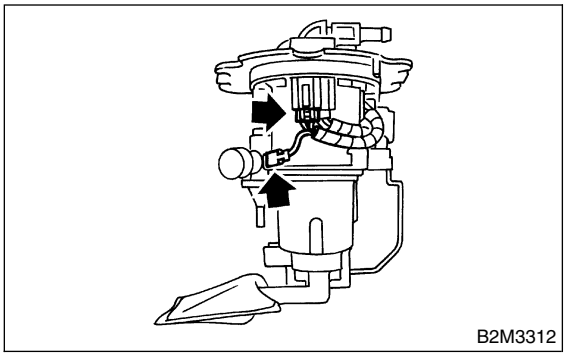
24. Fuel Level Sensor S145026

A: REMOVAL S145026A18

WARNING:
- **Place “NO FIRE” signs near the working area.**
- **Be careful not to spill fuel on the floor.**

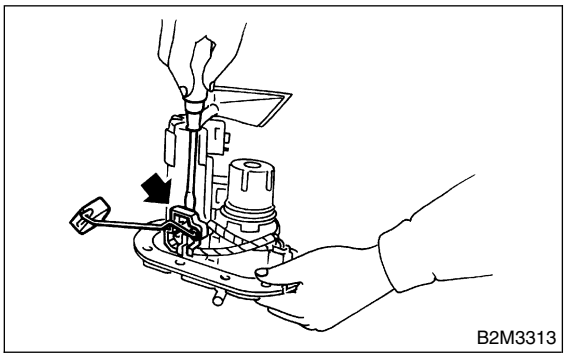
NOTE:
Fuel level sensor is built in fuel pump assembly.

1) Remove fuel pump assembly. <Ref. to FU(H6)-63 REMOVAL, Fuel Pump.>
2) Disconnect connector from fuel pump bracket.


B2M3312

3) Pushing the pawls with a screwdriver, remove fuel meter unit by pulling it downwards.

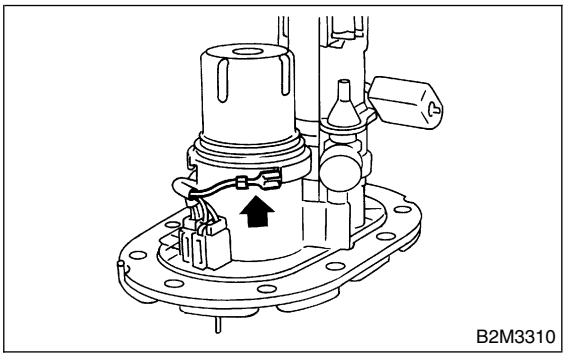
NOTE:
Replace fuel filter pawls with new ones as they might brake when removed.


B2M3313

B: INSTALLATION S145026A11

Install in the reverse order of removal.

WARNING:
- **Ground cable must be connected.**
- **Spark may occur and ignite if fuel is nearby.**

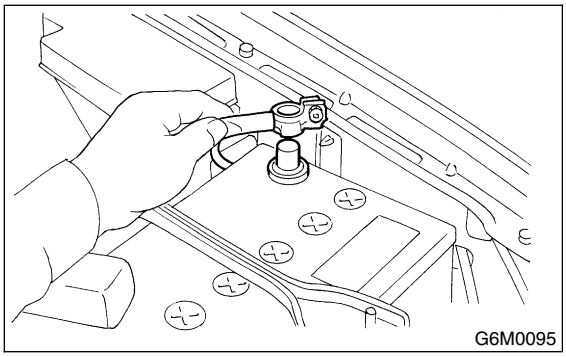

B2M3310

25. Fuel Sub Level Sensor S145023

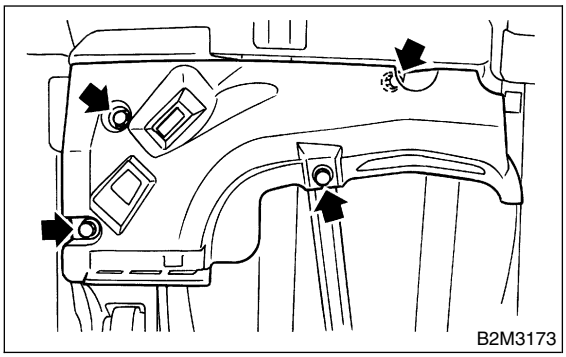
A: REMOVAL S145023A18

WARNING:
• Place "NO FIRE" signs near the working area.
• Be careful not to spill fuel on the floor.

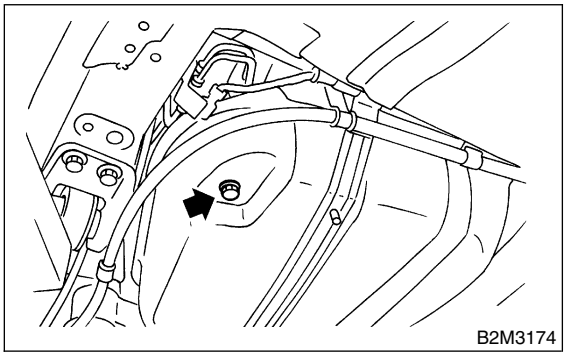
1) Disconnect battery ground cable.


G6M0095

2) Lift-up the vehicle.
3) Remove front side fuel tank cover.

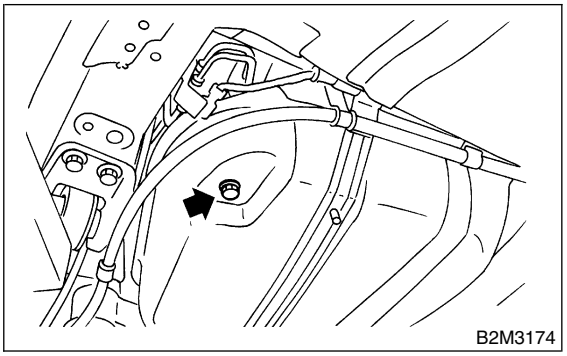

B2M3173

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

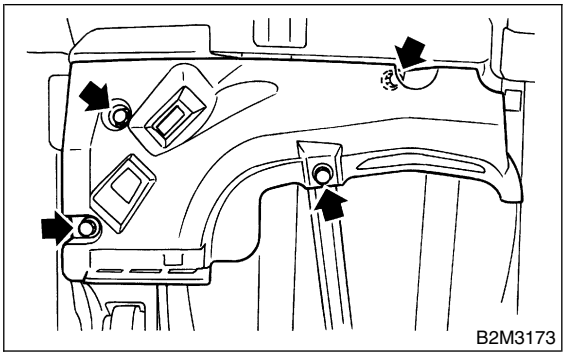

B2M3174

5) Tighten fuel drain plug and install front right side fuel tank cover.

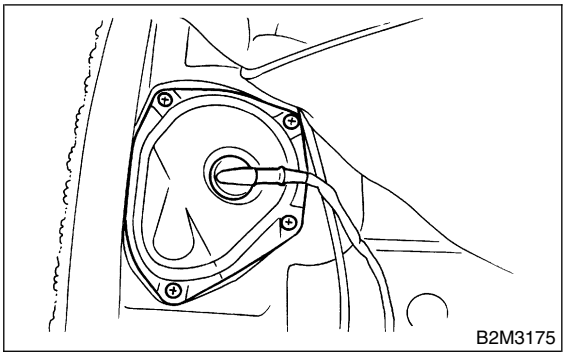
Tightening torque:
26 N·m (2.65 kgf-m, 19.2 ft-lb)


B2M3174

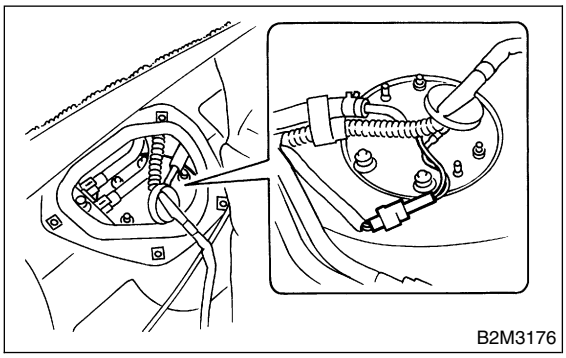
Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)


B2M3173

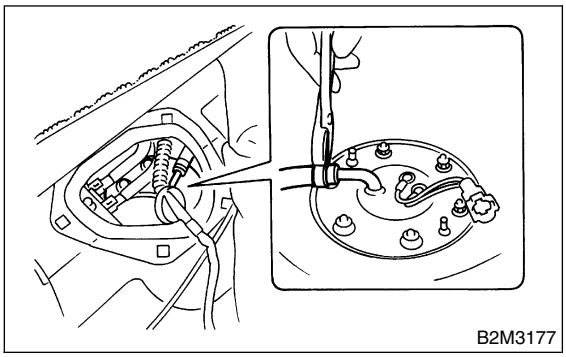
6) Raise rear seat and turn floor mat up. (Wagon model)
7) Remove rear seat. (Sedan model)
8) Remove service hole cover.


B2M3175

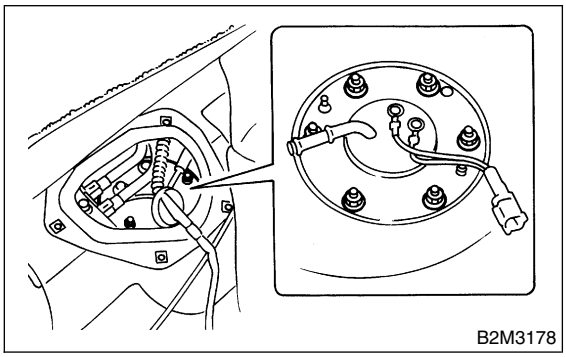
9) Disconnect connector from fuel sub level sensor.


B2M3176

10) Disconnect fuel jet pump hose.


B2M3177

11) Remove bolts which install fuel sub level sensor on fuel tank.

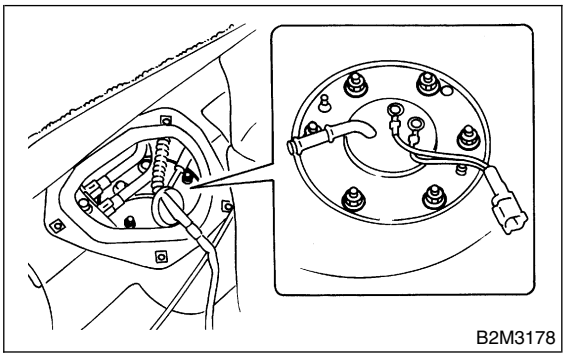

B2M3178

12) Remove fuel sub level sensor.

B: INSTALLATION S145023A11

Install in the reverse order of removal.

Tightening torque:
4.4 N·m (0.45 kgf-m, 3.3 ft-lb)


B2M3178

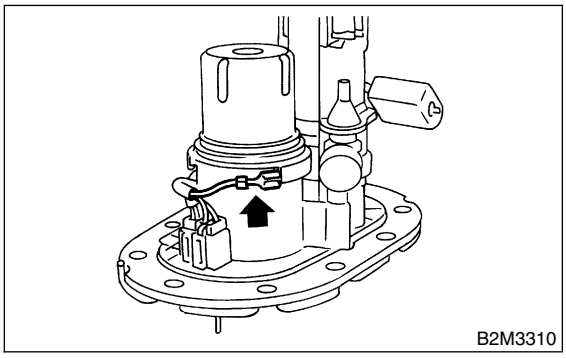
26. Fuel Filter S145027

A: REMOVAL S145027A18

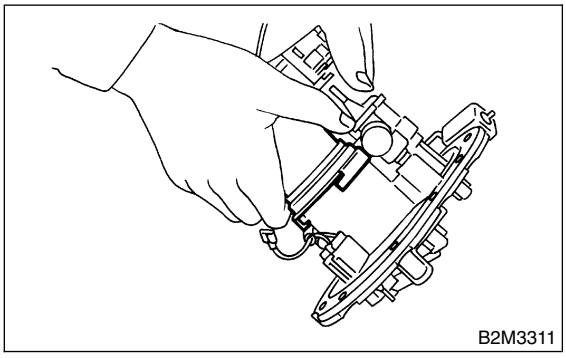
WARNING:
• Place “NO FIRE” signs near the working area.
• Be careful not to spill fuel on the floor.

NOTE:
Fuel filter is built in fuel pump assembly.

1) Release fuel pressure. <Ref. to FU(H6)-49 RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
2) Remove fuel pump assembly. <Ref. to FU(H6)-63 REMOVAL, Fuel Pump.>
3) Disconnect ground cable from filter holder.


B2M3310

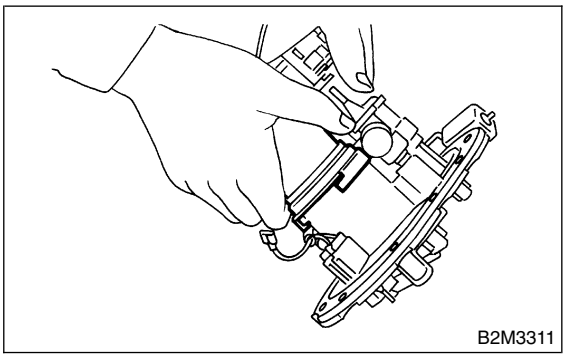
4) Remove filter holder by turning it to the left from the body pawls and take out the filter.


B2M3311

B: INSTALLATION S145027A11

CAUTION:
• If fuel hoses are damaged at the connecting portion, replace it with a new one.
• If clamps are badly damaged, replace with new ones.
• Replace O-ring with new ones.

1) Set O-ring on the filter holder and install by turning to the right.


B2M3311

2) Install fuel pump assembly. <Ref. to FU(H6)-64 INSTALLATION, Fuel pump.>

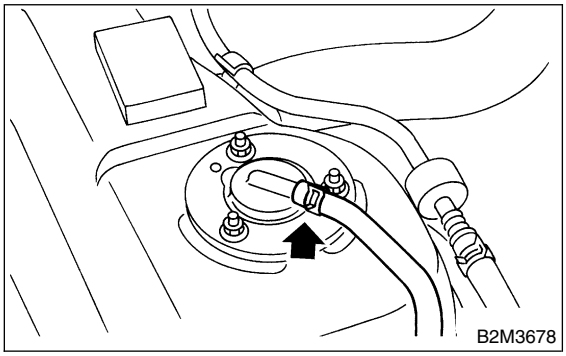
C: INSPECTION S145027A10

1) Check the inside of fuel filter for dirt and water sediment.
2) If it is clogged, or if replacement interval has been reached, replace it.

27. Fuel Cut Valve S145021

A: REMOVAL S145021A18

1) Remove fuel tank. <Ref. to FU(H6)-52, REMOVAL, Fuel Tank.>
2) Move clip and disconnect evaporation hose from fuel cut valve.

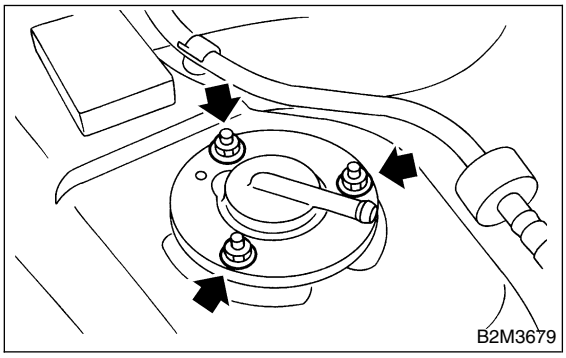


3) Remove bolts which install fuel cut valve.

B: INSTALLATION S145021A11

Install in the reverse order of removal.

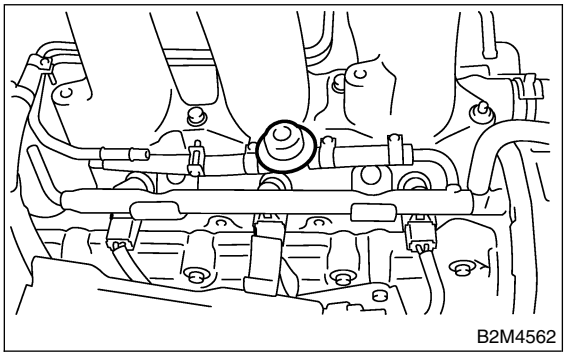
Tightening torque:
4.4 N·m (0.45 kgf-m, 3.3 ft-lb)



28. Fuel Damper Valve S145708

A: REMOVAL S145708A18

1) Release fuel pressure. <Ref. to FU(H6)-49 RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
2) Remove fuel damper valve from return line.


B2M4562

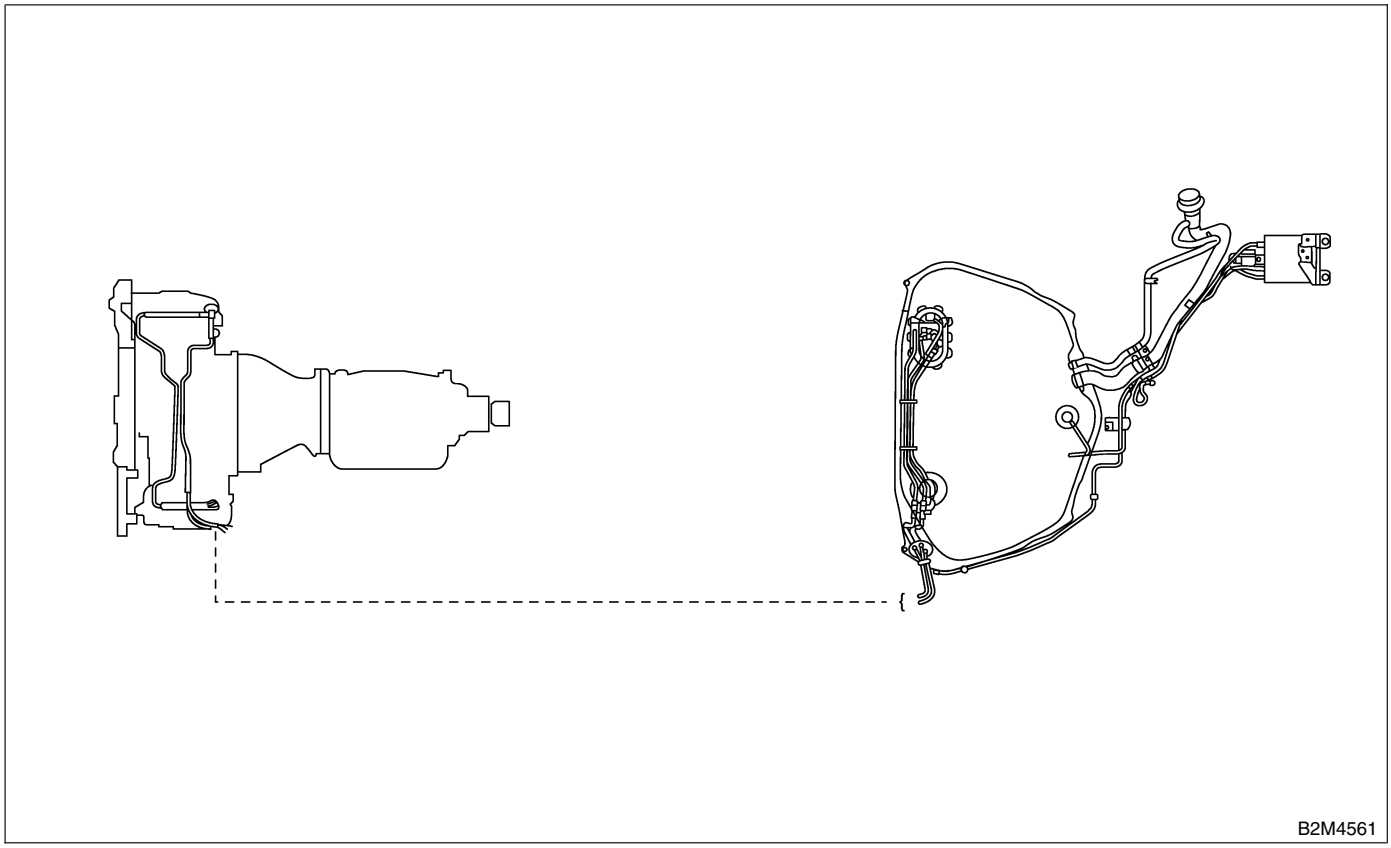
B: INSTALLATION S145708A11

Install in the reverse order of removal.

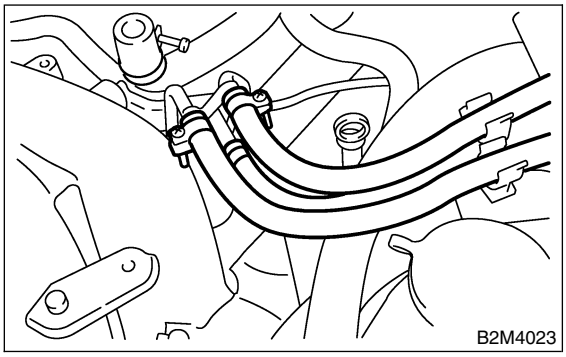
29. Fuel Delivery, Return and Evaporation Lines S145019

A: REMOVAL S145019A18

1) Set vehicle on the lift.
2) Release fuel pressure. <Ref. to FU(H6)-49 RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>
3) Open fuel filler flap lid and remove fuel filler cap.
4) Remove floor mat. <Ref. to EI-50 REMOVAL, Floor Mat.>
5) Remove fuel delivery pipes and hoses, fuel return pipes and hoses, evaporation pipes and hoses.

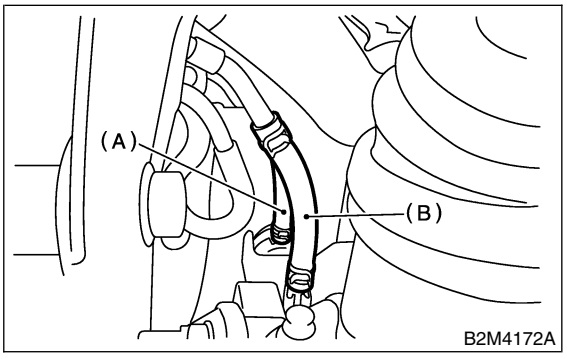

B2M4561

6) In engine compartment, detach fuel delivery hoses, return hoses and evaporation hose.


B2M4023

7) Lift-up the vehicle.

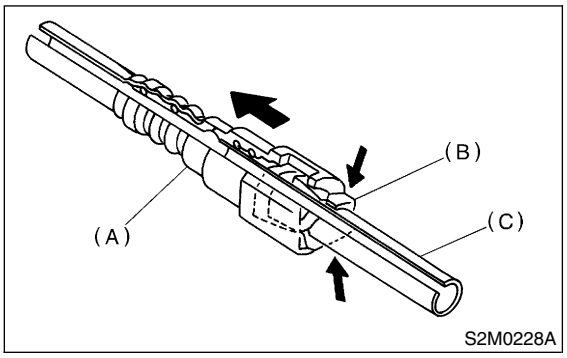
8) Disconnect two-way valve hose (A) from two-way valve and disconnect evaporation hose (B) from evaporation pipe.



B2M4172A

9) Separate quick connector on fuel delivery and return line.
(1) Clean pipe and connector, if they are covered with dust.
(2) Hold connector (A) and push retainer (B) down.
(3) Pull out connector (A) from retainer (B).

CAUTION:
Replace retainer with new ones.

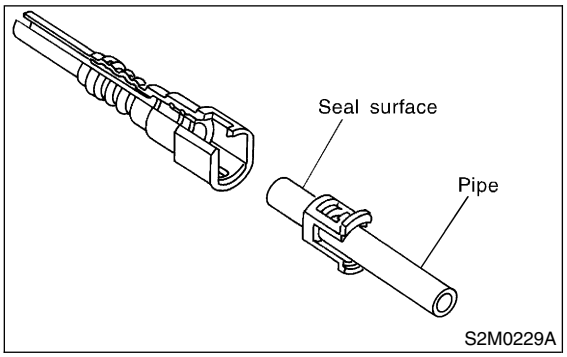


(A) Connector
(B) Retainer
(C) Pipe

B: INSTALLATION S145019A11

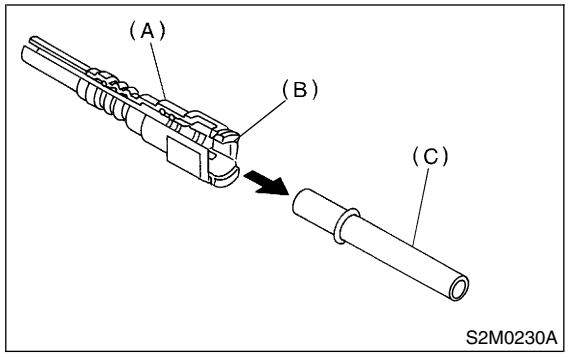
1) Connect quick connector on fuel delivery and return line.

CAUTION:
- **Always use a new retainer.**
- **Make sure that the connected portion is not damaged or has dust. If necessary, clean seal surface of pipe.**



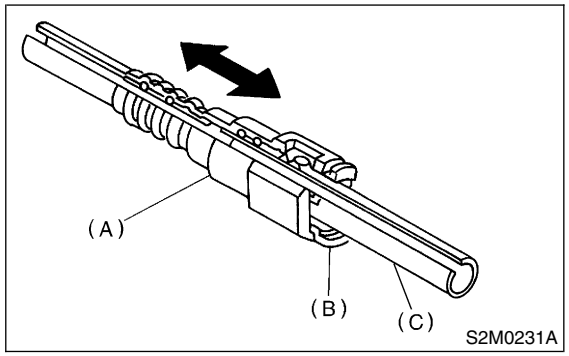
(1) Set new retainer (B) to connector (A).
(2) Push pipe into connector completely.

NOTE:
At this time, two clicking sounds are heard.



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

CAUTION:
- **Pull the connector to ensure it is connected securely.**
- **Ensure 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.**

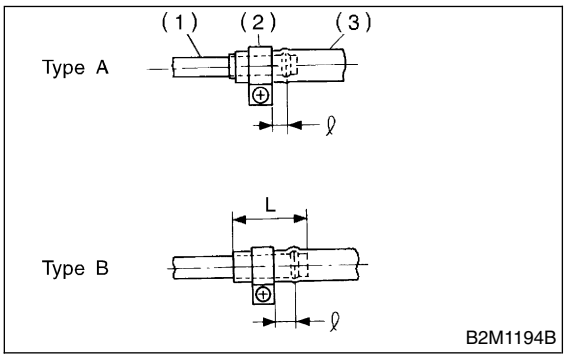


(A) Connector
(B) Retainer
(C) Pipe

2) Connect fuel delivery hose to pipe with an overlap of 20 to 25 mm (0.79 to 0.98 in).
Type A: When fitting length is specified.
Type B: When fitting length is not specified.

ℓ : 2.5±1.5 mm (0.098±0.059 in)

L: 22.5±2.5 mm (0.886±0.098 in)

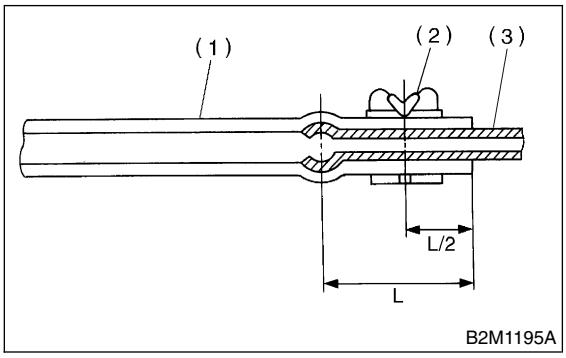


(1) Fitting
(2) Clamp
(3) Hose

3) Connect evaporation hose to pipe by approx. 15 mm (0.59 in) from hose end.

L = 17.5±2.5 mm (0.689±0.098 in)

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



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

C: INSPECTION *S145019A10*

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

30. Fuel System Trouble in General S145571

A: INSPECTION S145571A10

Trouble and possible cause			Corrective action
1. Insufficient fuel supply to the injector			
1)	Fuel pump will not operate.		
	○	Defective terminal contact.	Inspect connections, especially ground, and tighten securely.
	○	Trouble in electromagnetic or electronic circuit parts.	Replace fuel pump.
2)		Lowering of fuel pump function.	Replace fuel pump.
3)		Clogged dust or water in the fuel filter.	Replace fuel filter, clean or replace fuel tank.
4)		Clogged or bent fuel pipe or hose.	Clean, correct or replace fuel pipe or hose.
5)		Air is mixed in the fuel system.	Inspect or retighten each connection part.
6)		Clogged or bent breather tube or pipe.	Clean, correct or replace air breather tube or pipe.
7)		Damaged diaphragm of pressure regulator.	Replace.
2. Leakage or blow out fuel			
1)		Loosened joints of the fuel pipe.	Retightening.
2)		Cracked fuel pipe, hose and fuel tank.	Replace.
3)		Defective welding part on the fuel tank.	Replace.
4)		Defective drain packing of the fuel tank.	Replace.
5)		Clogged or bent air breather tube or air vent tube.	Clean, correct or replace 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.	Retightening.
2)		Defective packing air tightness on the fuel saucer.	Correct or replace packing.
3)		Cracked fuel separator.	Replace separator.
4)		Inoperative fuel pump modulator or circuit.	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.

To prevent water condensation:
(1) Top off the fuel tank or drain the fuel completely.
(2) Drain water condensation from the fuel filter.

- Refilling the fuel tank.

Refill the fuel tank while there is still some fuel left in the tank.

- Protecting the fuel system against freezing and water condensation.

(1) Cold areas
In snow-covered areas, mountainous areas, skiing areas, etc. where ambient temperatures drop below 0°C (32°F) throughout the winter season, use an anti-freeze solution in the cooling system. Refueling will also complement the effect of anti-freeze solution each time the fuel level drops to about one-half. After the winter season, drain water which may have accumulated in the fuel filter and fuel tank in the manner same as that described under Affected areas below.
(2) Affected areas
When water condensation is notched in the fuel filter, drain water from both the fuel filter and fuel tank or use a water removing agent (or anti-freeze solution) in the fuel tank.

- Observe the instructions, notes, etc., indicated on the label affixed to the anti-freeze solution (water removing agent) container before use.

MEMO: