

# EMISSION CONTROL SYSTEM AND VACUUM FITTING

# 2-1

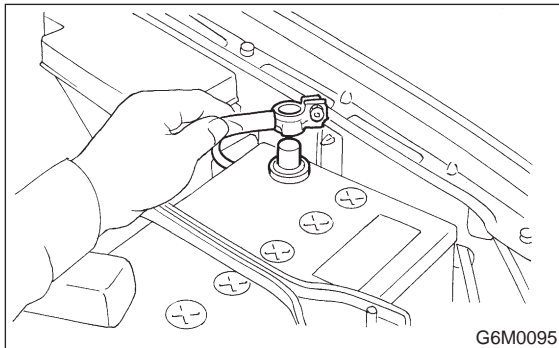
---

	Page
<b>W SERVICE PROCEDURE .....</b>	<b>2</b>
1. Front Catalytic Converter .....	2
2. Rear Catalytic Converter.....	4
3. Canister .....	5
4. Purge Control Solenoid Valve .....	5
5. Fuel Temperature Sensor.....	7
6. Fuel Tank Pressure Sensor.....	9
7. Pressure Control Solenoid Valve .....	10
8. Main Fuel Level Sensor .....	12
9. Air Filter .....	13
10. Sub Fuel Level Sensor.....	14
11. Vent Valve .....	15
12. Shut Valve .....	17
13. Drain Valve .....	18

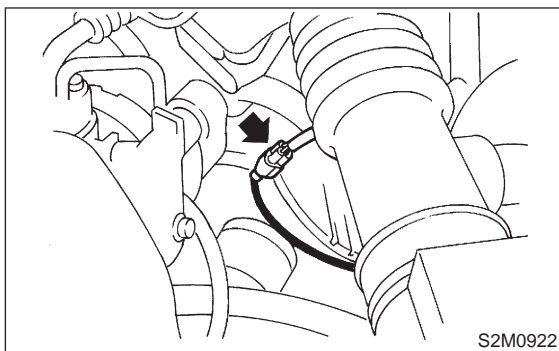
## 1. Front Catalytic Converter

### A: REMOVAL

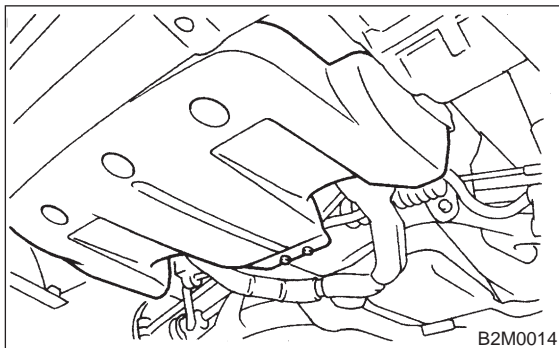
- 1) Disconnect battery ground cable.



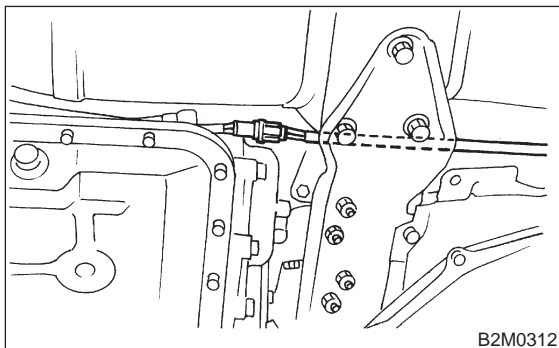
- 2) Disconnect front oxygen sensor connector.



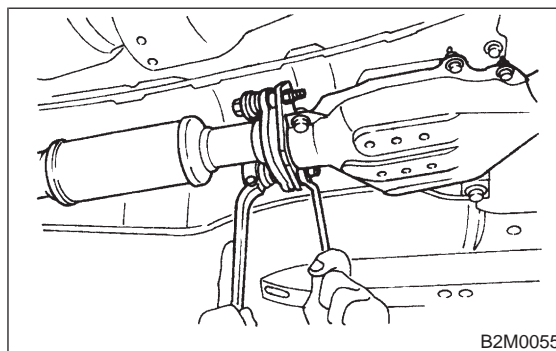
- 3) Lift-up the vehicle.  
4) Remove under cover.



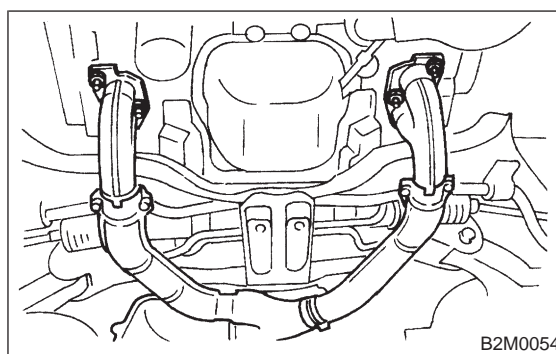
- 5) Disconnect rear oxygen sensor connector.



- 6) Separate front and rear catalytic converter assembly from rear exhaust pipe.



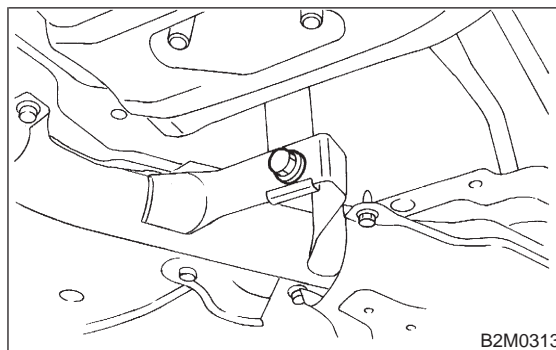
- 7) Remove front exhaust pipe from cylinder heads.



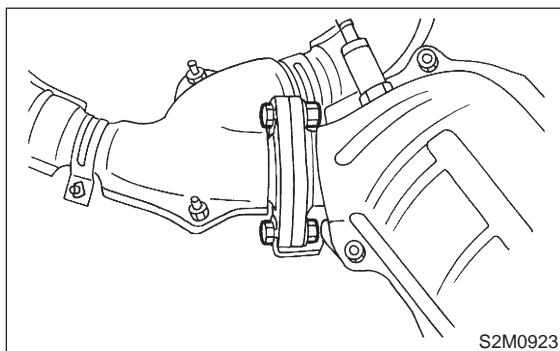
- 8) Remove front and rear catalytic converter assembly from hanger bracket.

#### CAUTION:

- Be careful not to pull down center exhaust pipe.
- After removing center exhaust pipe, do not apply excessive pulling force on rear exhaust pipe.



- 9) Separate front and rear catalytic converter assembly from front exhaust pipe.

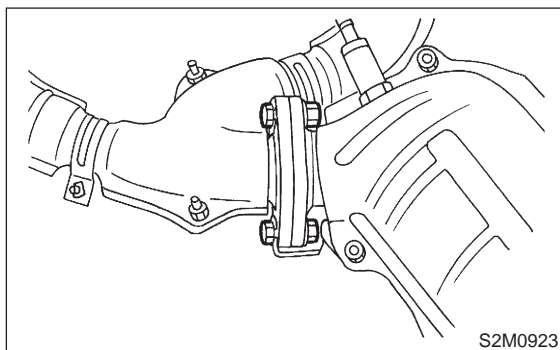


## B: INSTALLATION

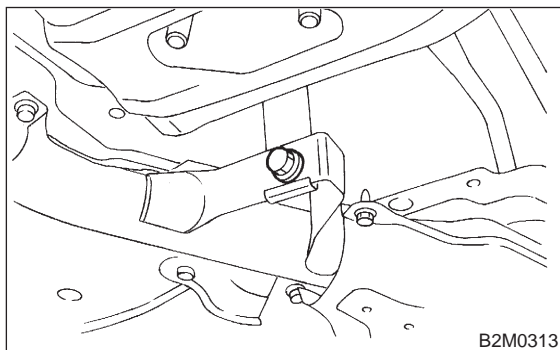
### CAUTION:

Replace gaskets with new ones.

- 1) Install front and rear catalytic converter assembly to front exhaust pipe.



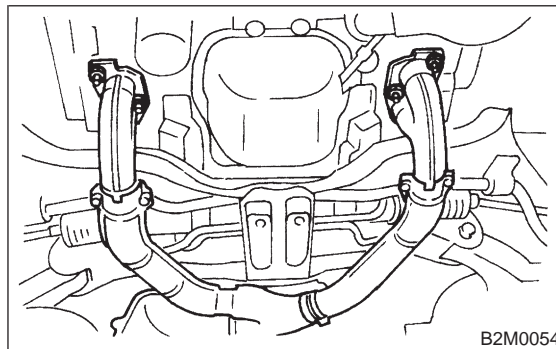
- 2) Install front and rear catalytic converter assembly.  
Temporarily tighten bolt which installs center exhaust pipe to hanger bracket.



- 3) Install front exhaust pipe to cylinder heads.

### Tightening torque:

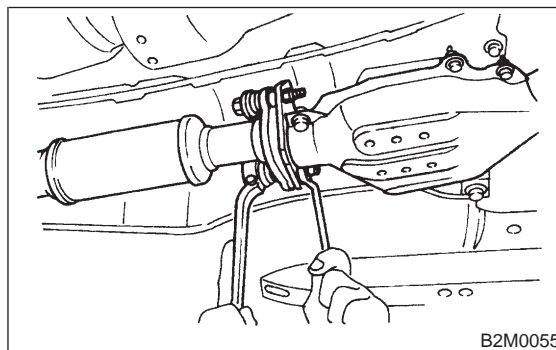
**$30 \pm 5 \text{ N-m}$  ( $3.1 \pm 0.5 \text{ kg-m}$ ,  $22.4 \pm 3.6 \text{ ft-lb}$ )**



- 4) Install front and rear catalytic converter assembly to rear exhaust pipe.

### Tightening torque:

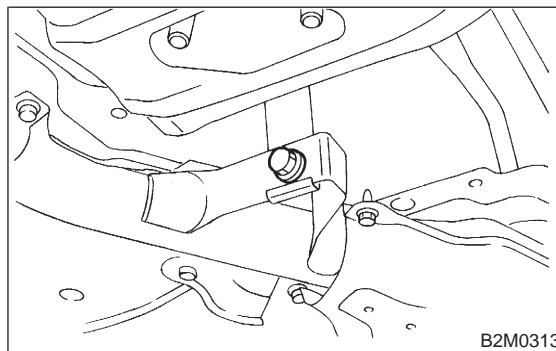
**$18 \pm 5 \text{ N-m}$  ( $1.8 \pm 0.5 \text{ kg-m}$ ,  $13.0 \pm 3.6 \text{ ft-lb}$ )**



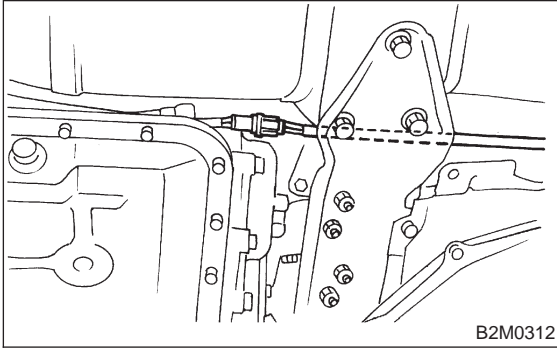
- 5) Tighten bolt which holds front and rear catalytic converter assembly to hanger bracket.

### Tightening torque:

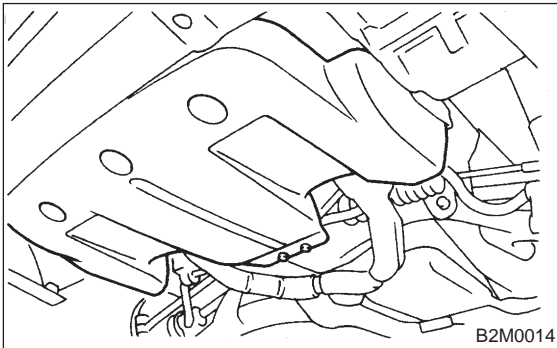
**$35 \pm 5 \text{ N-m}$  ( $3.6 \pm 0.5 \text{ kg-m}$ ,  $26.0 \pm 3.6 \text{ ft-lb}$ )**



- 6) Connect rear oxygen sensor connector.

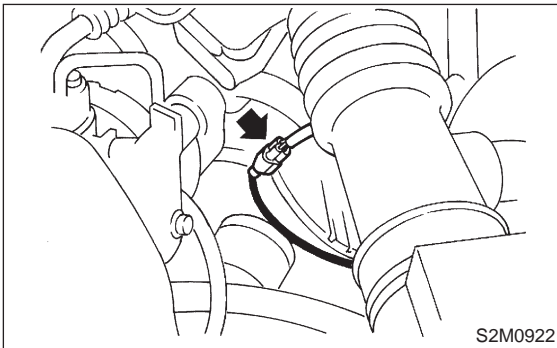


- 7) Install under cover.

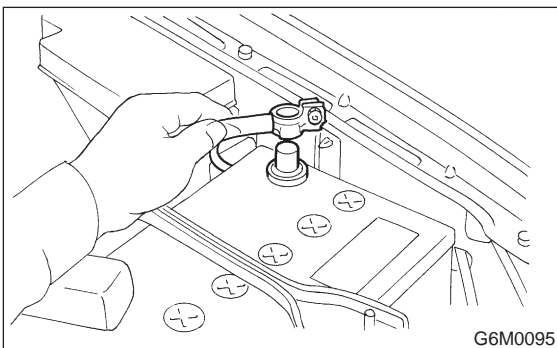


- 8) Lower the vehicle.

- 9) Connect connector to front oxygen sensor.



- 10) Connect battery ground cable.



## **2. Rear Catalytic Converter**

### **A: REMOVAL**

Remove rear catalytic converter. <Ref. to 2-1 [W1A0].>

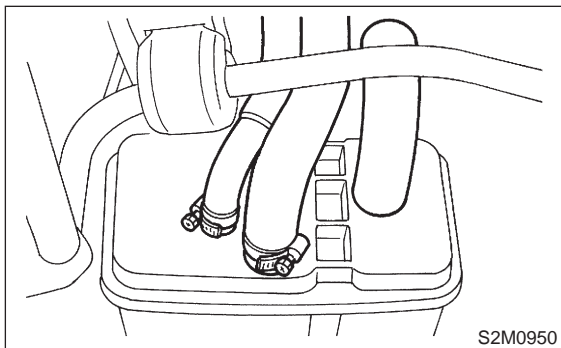
### **B: INSTALLATION**

Install rear catalytic converter. <Ref. to 2-1 [W1B0].>

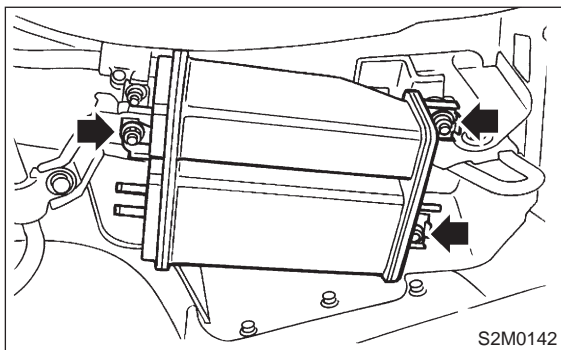
### 3. Canister

#### A: REMOVAL AND INSTALLATION

- 1) Lift-up the vehicle.
- 2) Disconnect evaporation hoses from canister.



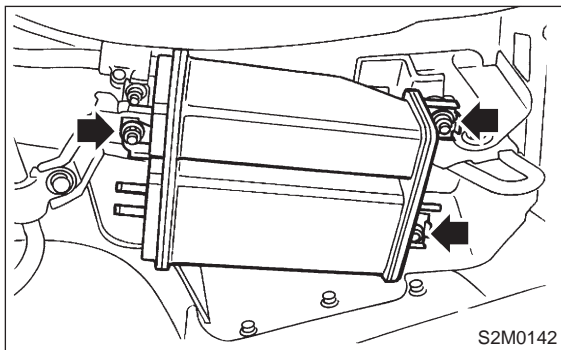
- 3) Remove canister from body.



- 4) Installation is in the reverse order of removal.

#### **Tightening torque:**

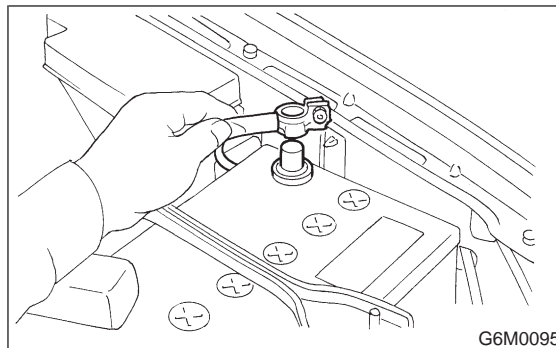
**$22.5 \pm 7 \text{ N}\cdot\text{m}$  ( $2.3 \pm 0.7 \text{ kg}\cdot\text{m}$ ,  $16.6 \pm 5.1 \text{ ft}\cdot\text{lb}$ )**



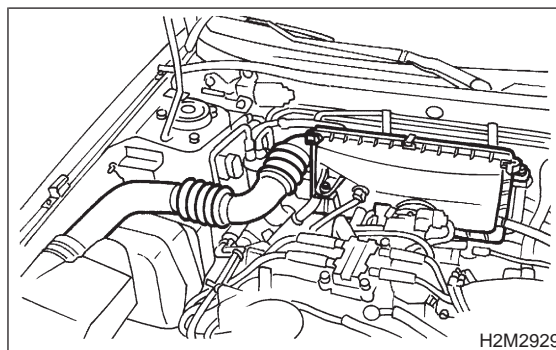
### 4. Purge Control Solenoid Valve

#### A: REMOVAL AND INSTALLATION

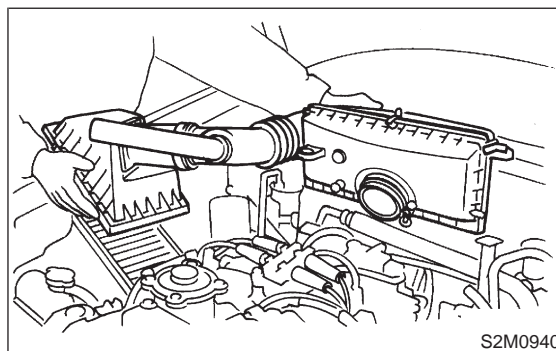
- 1) Disconnect battery ground cable.



- 2) Remove air cleaner case and air intake duct. (2200 cc California spec. vehicles) <Ref. to 2-7 [W1A0].>

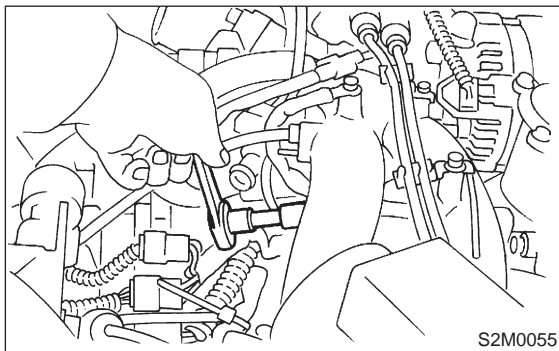


- 3) Remove air intake duct and air intake chamber. (Except 2200 cc California spec. vehicles) <Ref. to 2-7 [W18A0].>

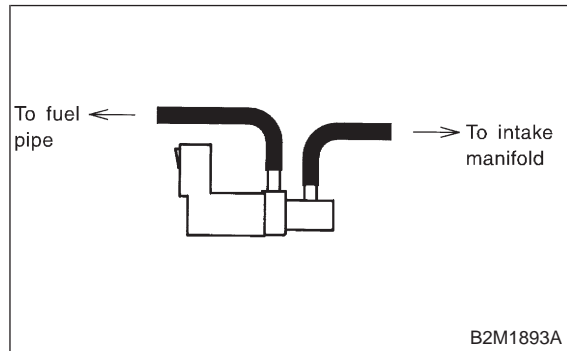


## 4. Purge Control Solenoid Valve

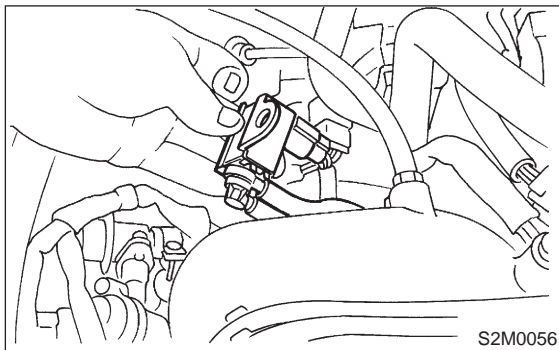
- 4) Remove bolt which installs purge control solenoid valve to intake manifold.



**CAUTION:**  
Carefully connect the evaporation hoses.



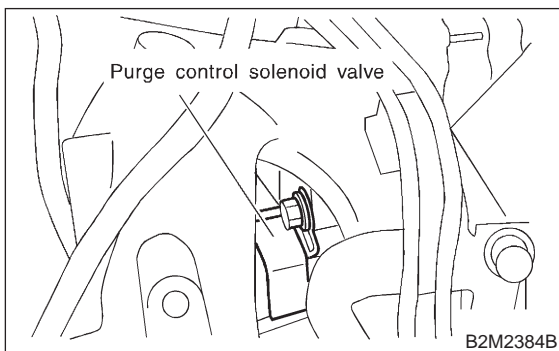
- 5) Take out purge control solenoid valve.  
6) Disconnect connector from purge control solenoid valve.  
7) Disconnect vacuum hoses from purge control solenoid valve.



- 8) Installation is in the reverse order of removal.

**Tightening torque:**

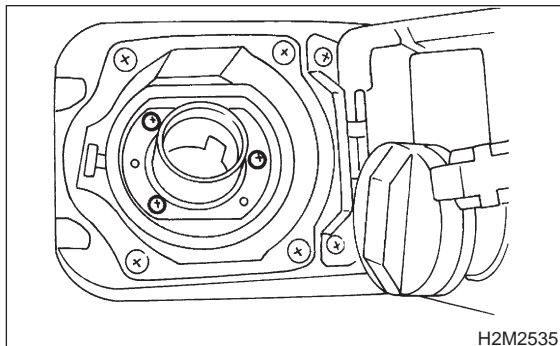
**15.7±1.5 N·m (1.6±0.15 kg-m, 11.6±1.1 ft-lb)**



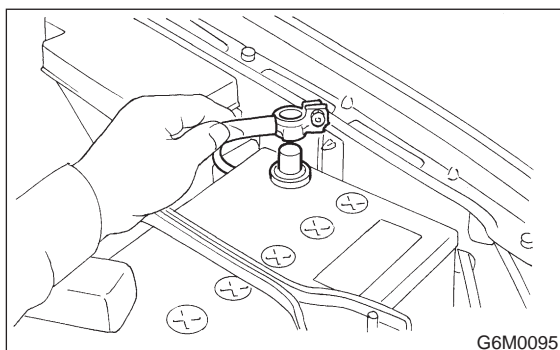
## 5. Fuel Temperature Sensor

### A: REMOVAL

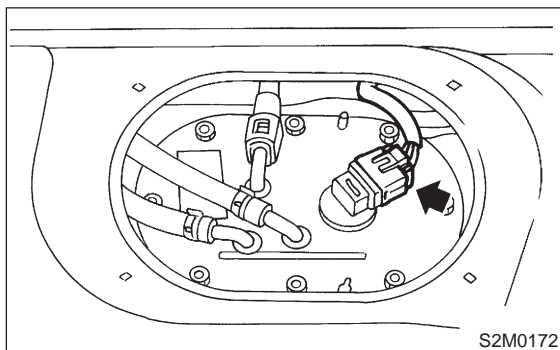
- 1) Release fuel pressure. <Ref. to 2-8 [W1B0].>
- 2) Open fuel filler lid, and remove fuel filler cap.



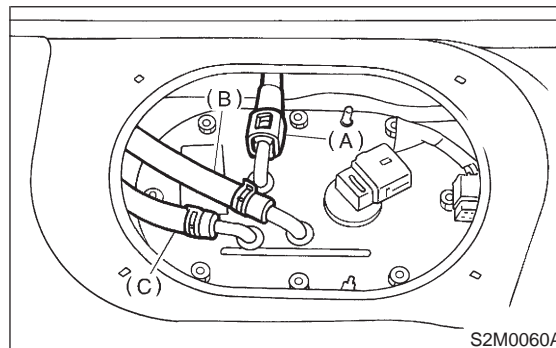
- 3) Disconnect battery ground cable.



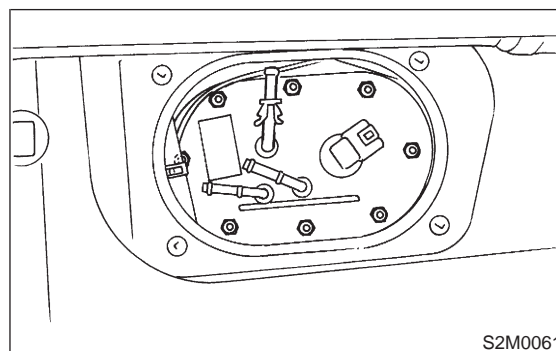
- 4) Disconnect connector from fuel pump.



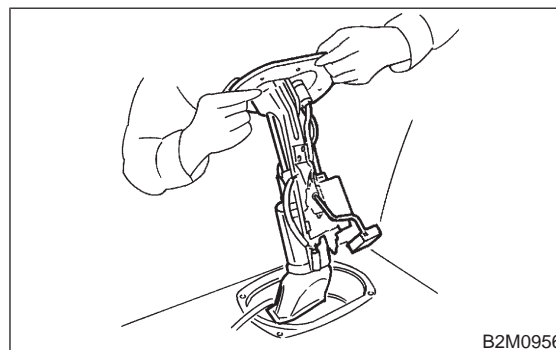
- 5) Move clips, and then disconnect fuel delivery hose (A), return hose (B) and jet pump hose (C).
- 6) Disconnect quick connector, and then disconnect fuel delivery hose (A). <Ref. to 2-8 [W7A0].>



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

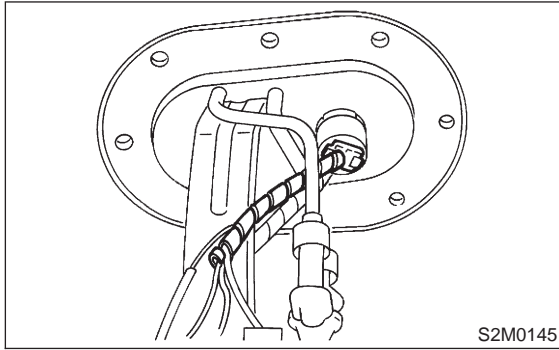


- 8) Take off fuel pump assembly from fuel tank.

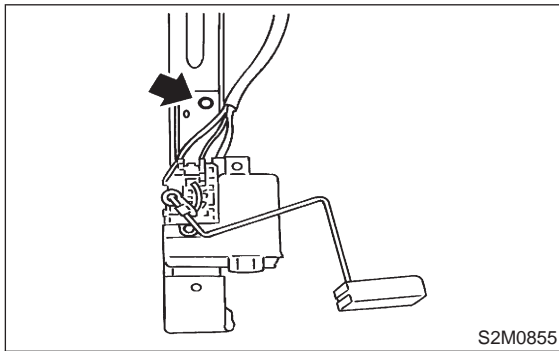




- 9) Disconnect connector from fuel pump bracket.



- 10) Remove main fuel level sensor from fuel pump assembly. <Ref. to 2-1 [W8A0].>



**NOTE:**

Fuel temperature sensor is a unit with fuel pump. If replacing it, replace as a fuel pump.

## B: INSTALLATION

**CAUTION:**

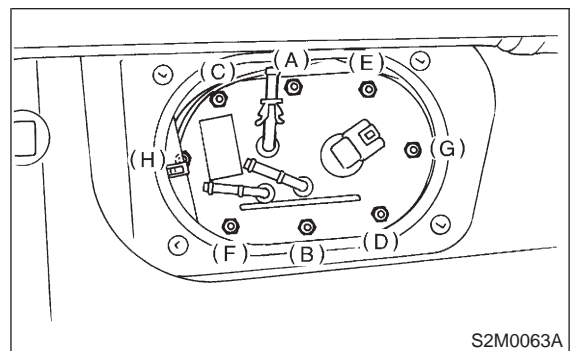
Leave fuel filler cap open when tightening nuts, to prevent fuel from flowing out through fuel delivery and return pipes. Close fuel filler cap after tightening nuts.

Installation is 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:**

**$4.4 \pm 1.5 \text{ N}\cdot\text{m}$  ( $0.45 \pm 0.15 \text{ kg}\cdot\text{m}$ ,  $3.3 \pm 1.1 \text{ ft}\cdot\text{lb}$ )**

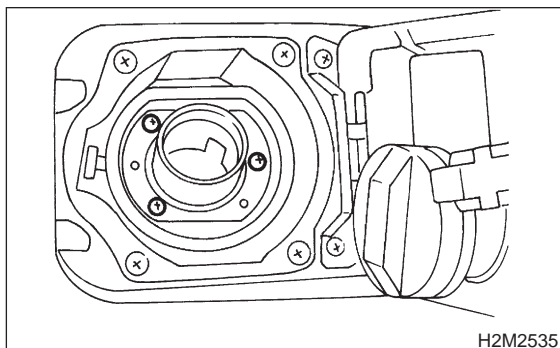




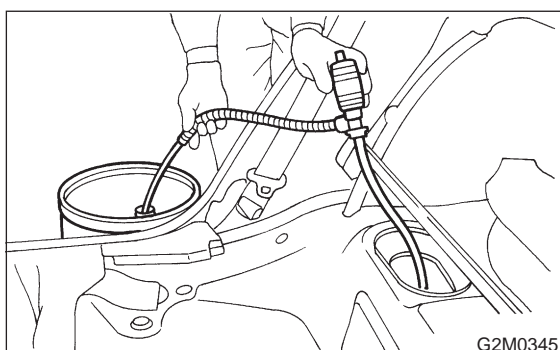
## 6. Fuel Tank Pressure Sensor

### A: REMOVAL AND INSTALLATION

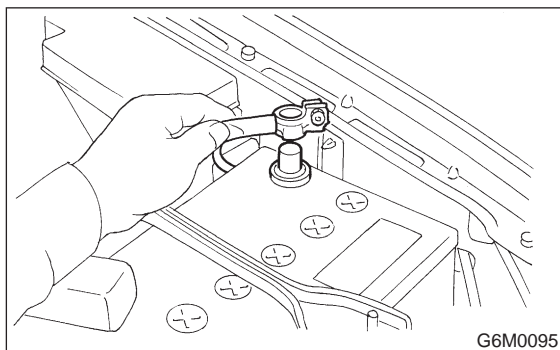
- 1) Release fuel pressure. <Ref. to 2-8 [W1B0].>
- 2) Open fuel flap lid, and remove fuel filler cap.



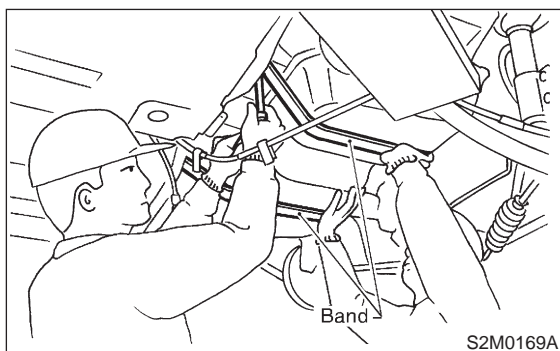
- 3) Drain fuel from fuel tank. <Ref. to 2-8 [W1C0].>



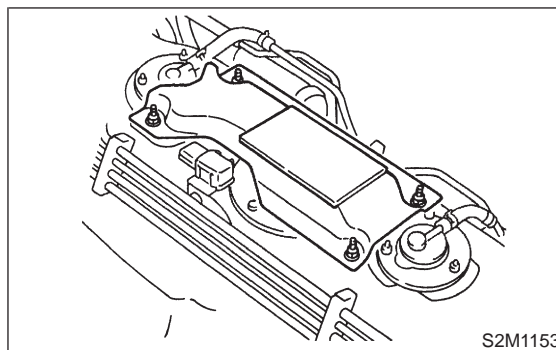
- 4) Disconnect battery ground cable.



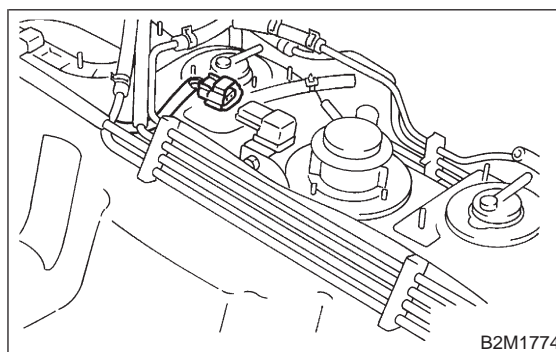
- 5) Remove fuel tank. <Ref. to 2-8 [W2A0].>



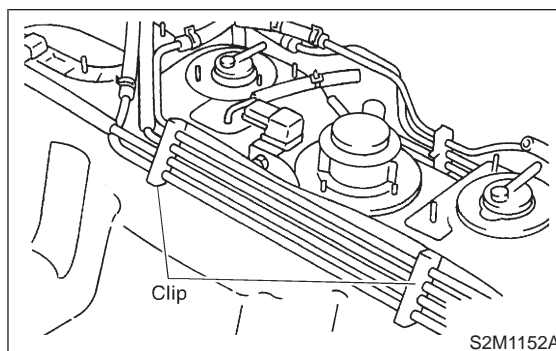
- 6) Remove protector cover.



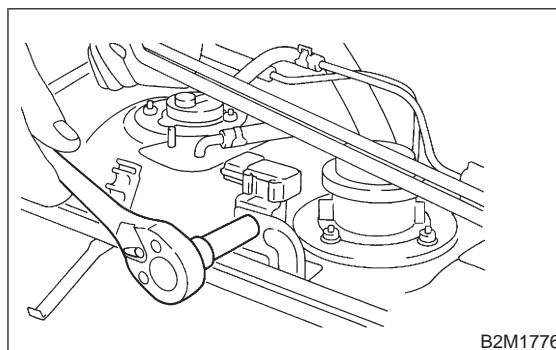
- 7) Disconnect connector from fuel tank pressure sensor.



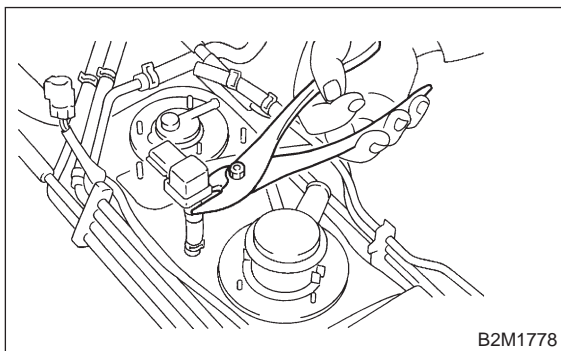
- 8) Release clips which hold fuel pipes onto fuel tank.



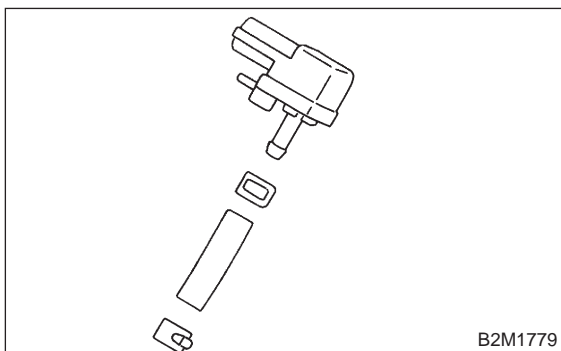
- 9) Move two fuel pipes to upper side, and remove bolt which install fuel tank pressure sensor to bracket.



10) Move clip, and disconnect pressure hose from fuel tank.



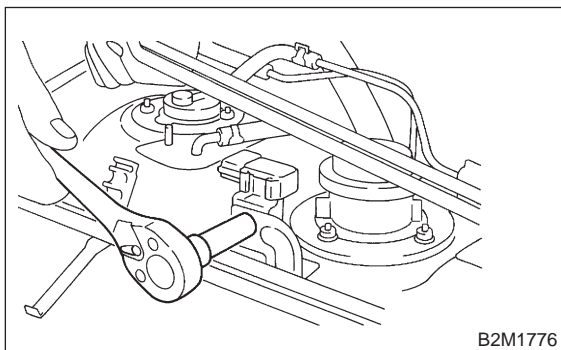
11) Disconnect pressure hose from fuel tank pressure sensor.



12) Installation is in the reverse order of removal.

**Tightening torque:**

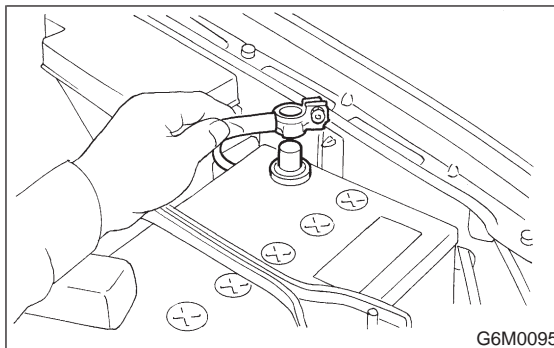
**$7.35 \pm 1.96 \text{ N}\cdot\text{m}$  ( $0.75 \pm 0.20 \text{ kg}\cdot\text{m}$ ,  $5.4 \pm 1.4 \text{ ft}\cdot\text{lb}$ )**



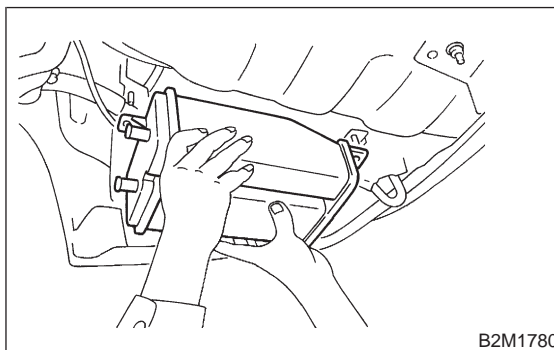
## 7. Pressure Control Solenoid Valve

### A: REMOVAL AND INSTALLATION

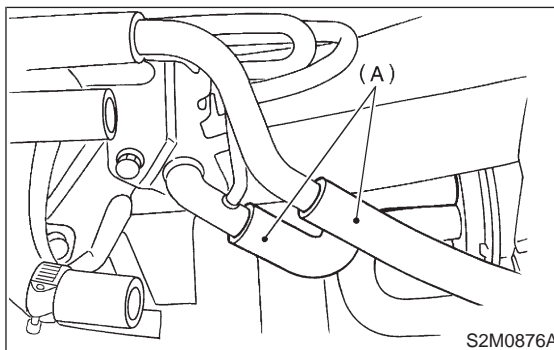
1) Disconnect battery ground cable.



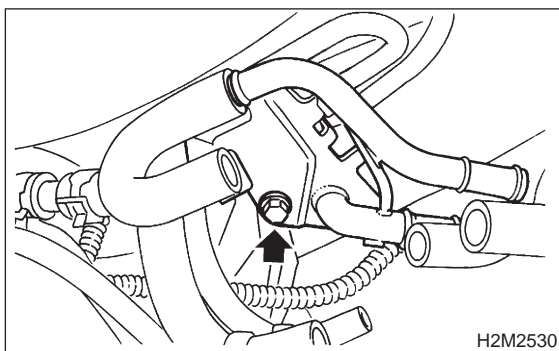
2) Remove canister. <Ref. to 2-1 [W3A0].>



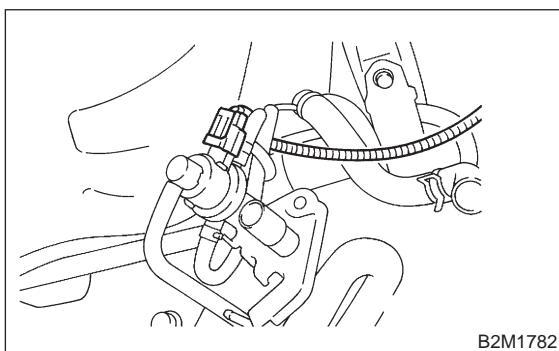
3) Disconnect evaporation hoses (A) from joint pipes.



- 4) Remove bolt which installs pressure control solenoid valve holding bracket on body.

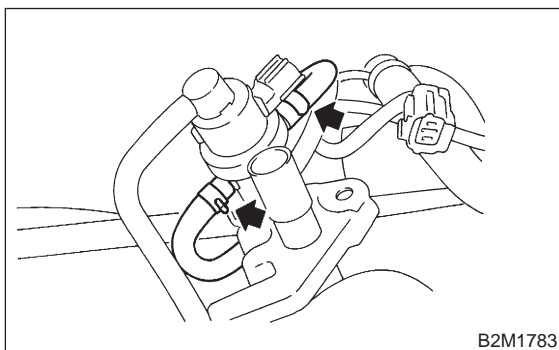


- 5) Disconnect connector from pressure control solenoid valve.

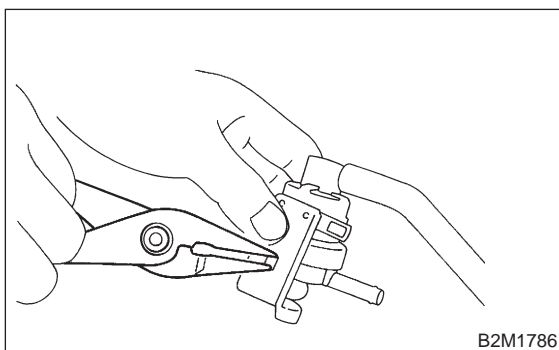


- 6) Disconnect two evaporation hoses from pressure control solenoid valve.

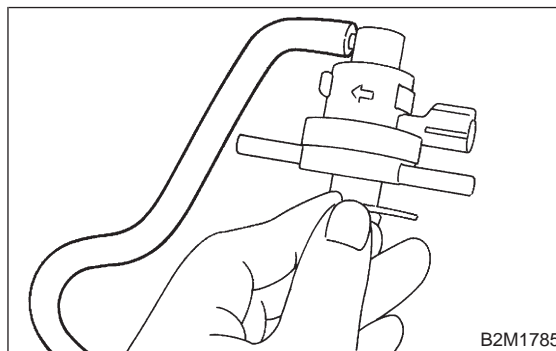
- 7) Remove pressure control solenoid valve with bracket.



- 8) Remove pressure control solenoid valve from bracket.



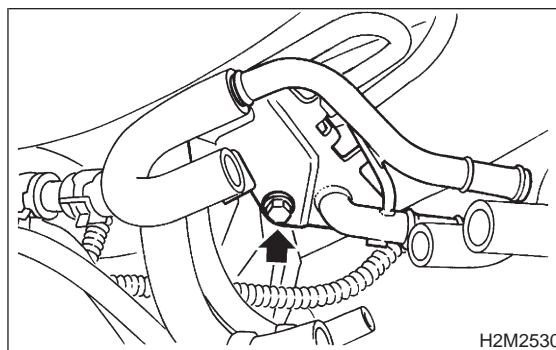
- 9) Disconnect vacuum hose from pressure control solenoid valve.



- 10) Installation is in the reverse order of removal.

**Tightening torque:**

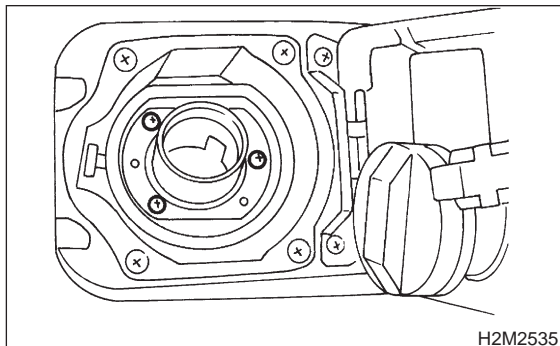
**$17.6 \pm 5$  N·m ( $1.8 \pm 0.5$  kg·m,  $13.0 \pm 3.6$  ft·lb)**



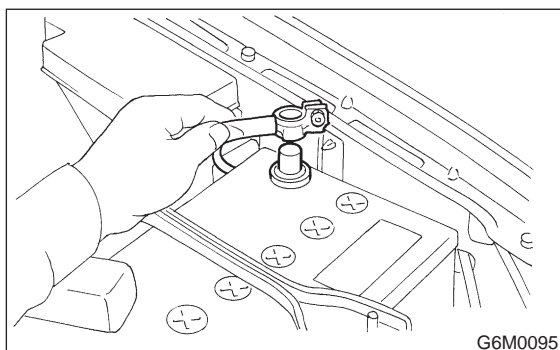
## 8. Main Fuel Level Sensor

### A: REMOVAL

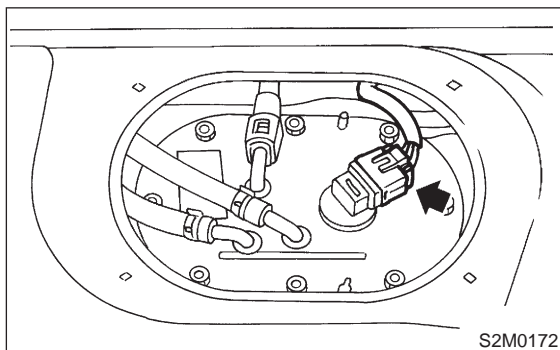
- 1) Release fuel pressure. <Ref. to 2-8 [W1B0].>
- 2) Open fuel flap lid, and remove fuel filler cap.



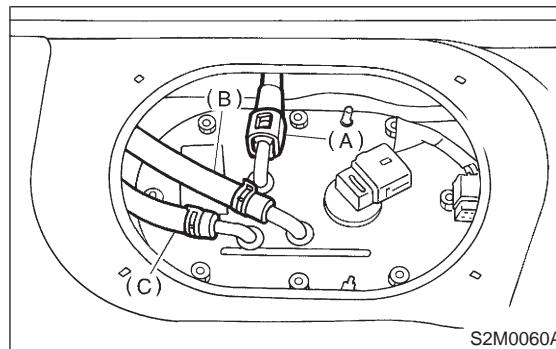
- 3) Disconnect battery ground cable.



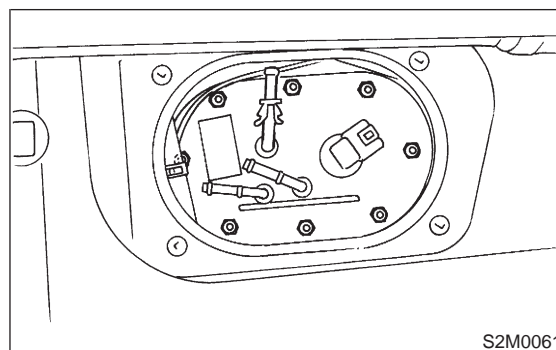
- 4) Disconnect connector from fuel pump.



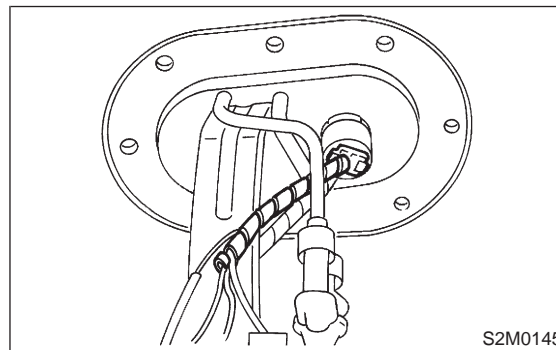
- 5) Move clips, and then disconnect fuel delivery hose (A), return hose (B) and jet pump hose (C).
- 6) Disconnect quick connector, and then disconnect fuel delivery hose (A). <Ref. to 2-8 [W7A0].>



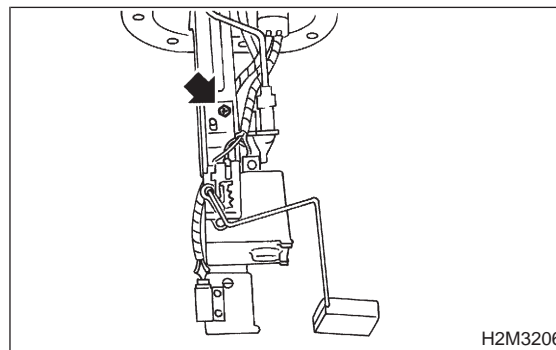
- 7) Remove nuts which install fuel pump assembly onto fuel tank.



- 8) Take off fuel pump assembly from fuel tank.
- 9) Disconnect connector from fuel pump bracket.



- 10) Remove bolt which installs fuel level sensor on mounting bracket.

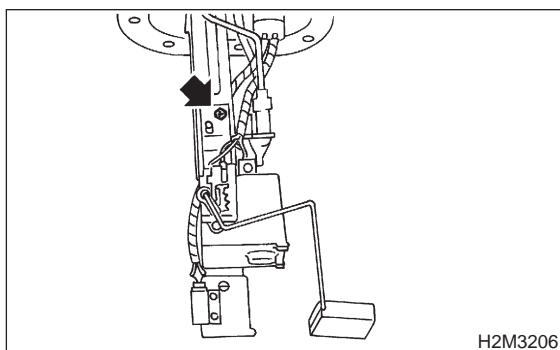


**B: INSTALLATION****CAUTION:**

Leave fuel filler cap open when tightening nuts, to prevent fuel from flowing out through fuel delivery and return pipes. Close fuel filler cap after tightening nuts.

Installation is in the reverse order of removal. Do the following:

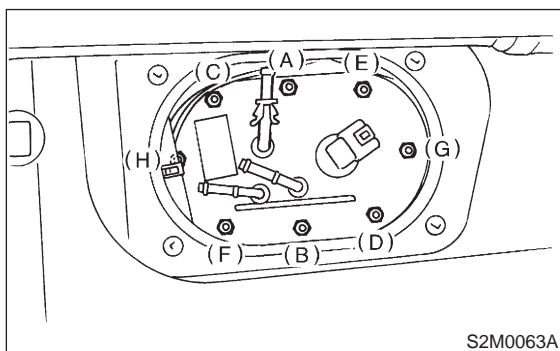
- 1) Install the fuel level sensor onto the mounting bracket.



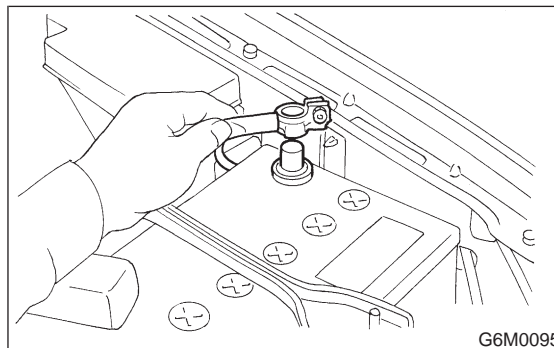
- 2) Always use new gaskets.
- 3) Ensure sealing portion is free from fuel or foreign particles before installation.
- 4) Tighten nuts in alphabetical sequence shown in figure to specified torque.

**Tightening torque:**

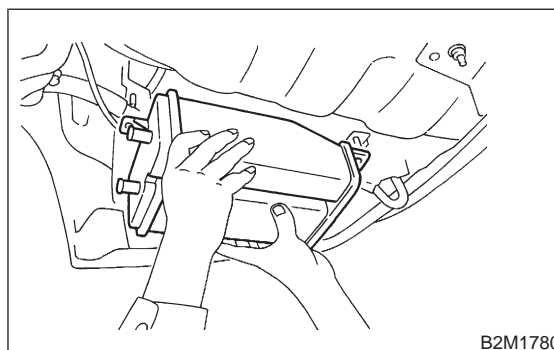
**$4.4 \pm 1.5 \text{ N}\cdot\text{m}$  ( $0.45 \pm 0.15 \text{ kg}\cdot\text{m}$ ,  $3.3 \pm 1.1 \text{ ft}\cdot\text{lb}$ )**

**9. Air Filter****A: REMOVAL AND INSTALLATION**

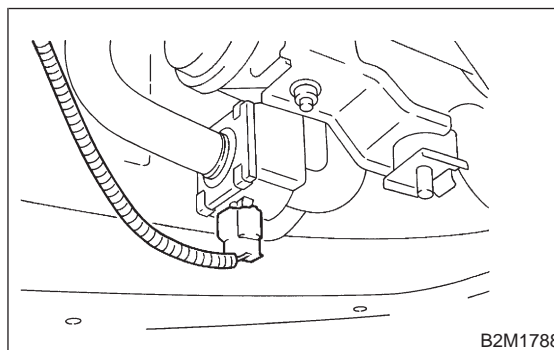
- 1) Disconnect battery ground cable.



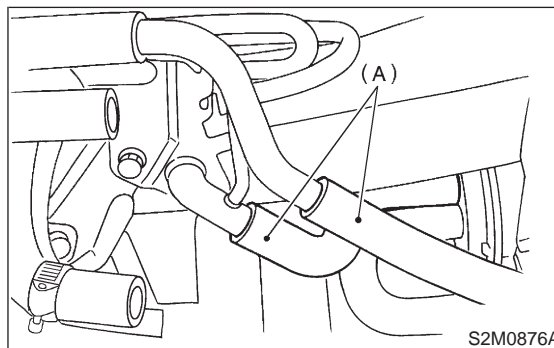
- 2) Lift-up the vehicle.
- 3) Remove canister. <Ref. to 2-1 [W3A0].>



- 4) Disconnect connector from drain valve.

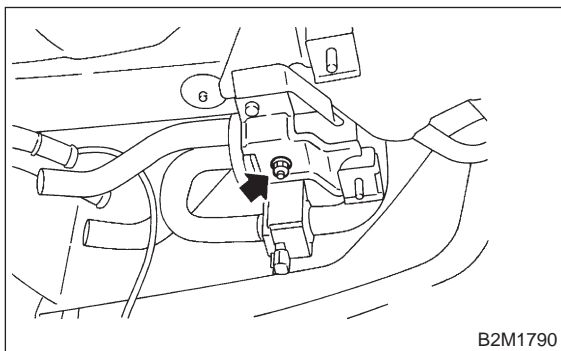


- 5) Disconnect evaporation hoses (A) from joint pipes.

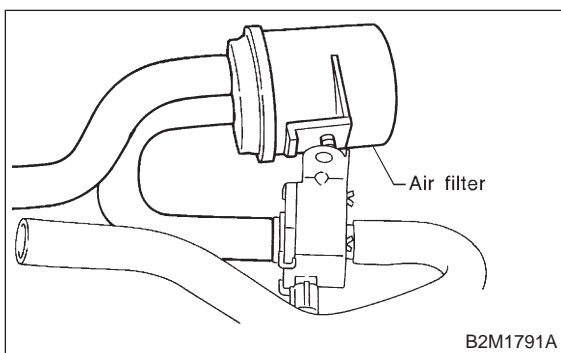


## 10. Sub Fuel Level Sensor

6) Remove nut which installs air filter and drain valve brackets on body, and remove them as a unit.



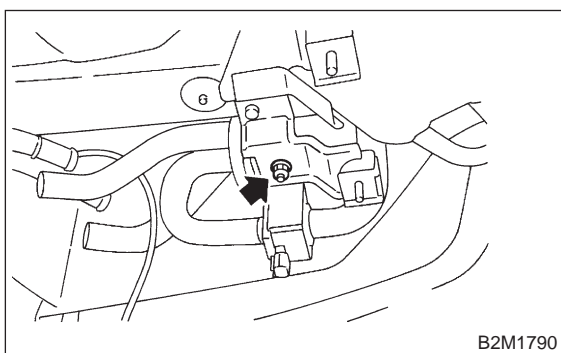
7) Disconnect evaporation hoses, and remove air filter.



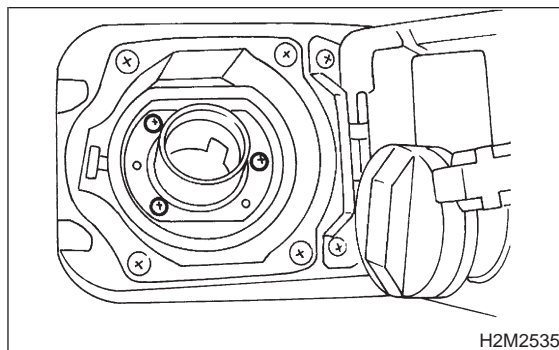
8) Installation is in the reverse order of removal.

**Tightening torque:**

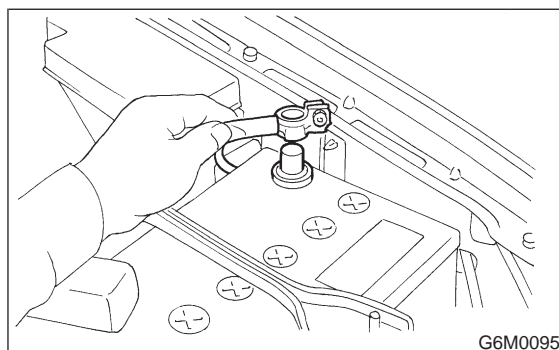
**$22.5 \pm 7 \text{ N}\cdot\text{m}$  ( $2.3 \pm 0.7 \text{ kg}\cdot\text{m}$ ,  $16.6 \pm 5.1 \text{ ft}\cdot\text{lb}$ )**

**10. Sub Fuel Level Sensor****A: REMOVAL AND INSTALLATION**

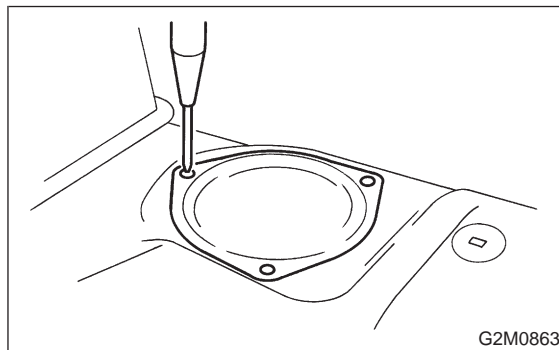
- 1) Release fuel pressure. <Ref. to 2-8 [W1B0].>
- 2) Open fuel flap lid, and remove fuel filler cap.



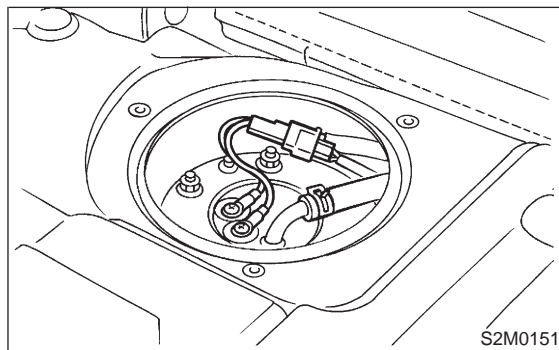
- 3) Disconnect battery ground cable.



- 4) Remove service hole cover.

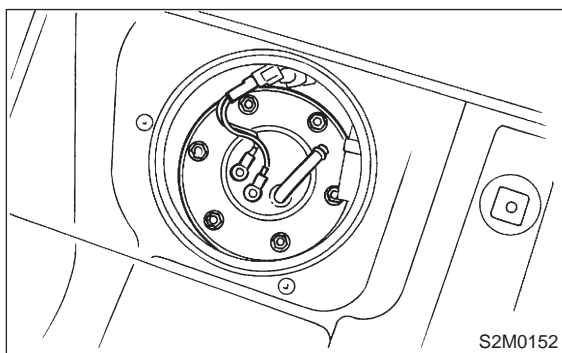


- 5) Disconnect connector from fuel sub meter, and disconnect jet pump hose.

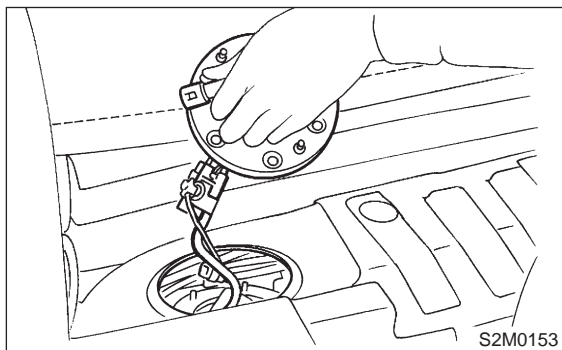




- 6) Remove bolts which install sub fuel level sensor on fuel tank.



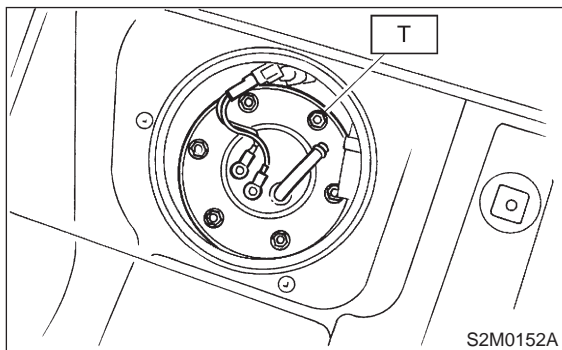
- 7) Remove sub fuel level sensor.



- 8) Installation is in the reverse order of removal.

**Tightening torque:**

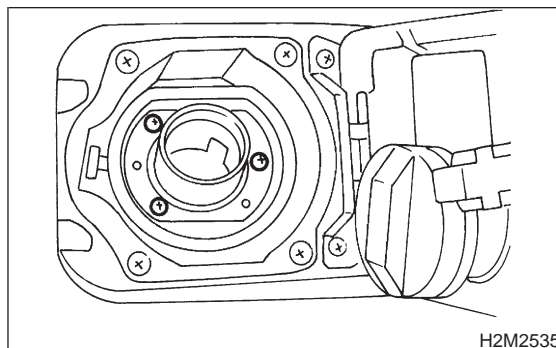
**T:  $4.4 \pm 1.5$  N·m ( $0.45 \pm 0.15$  kg·m,  $3.3 \pm 1.1$  ft·lb)**



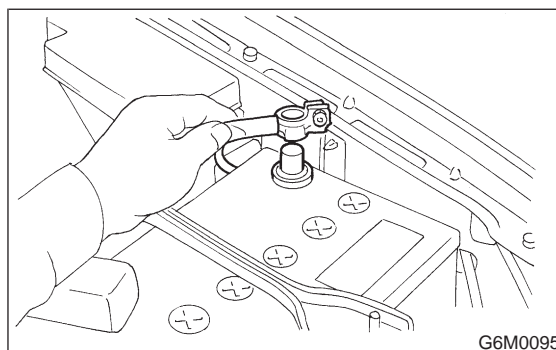
## 11. Vent Valve

### A: REMOVAL AND INSTALLATION

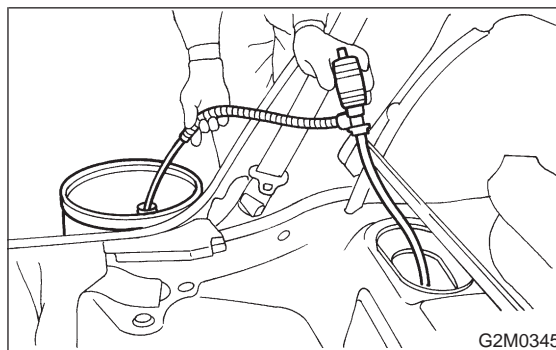
- 1) Release fuel pressure. <Ref. to 2-8 [W1B0].>
- 2) Open fuel flap lid, and remove fuel filler cap.



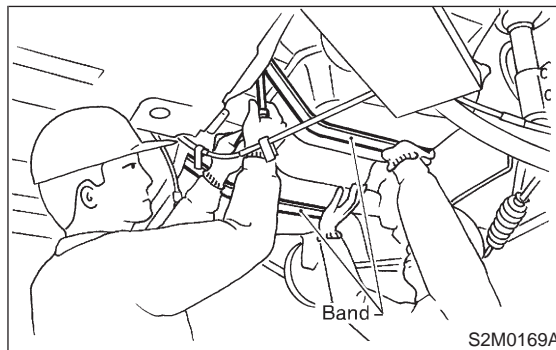
- 3) Disconnect battery ground cable.



- 4) Drain fuel from fuel tank. <Ref. to 2-8 [W1C0].>

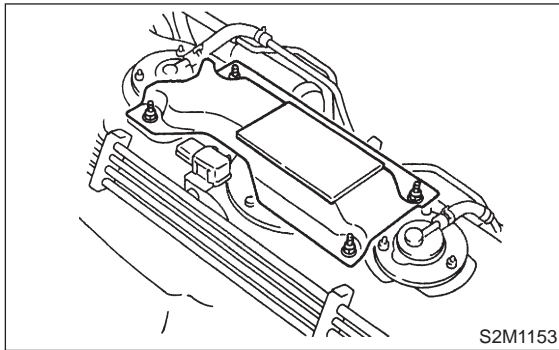


- 5) Remove fuel tank. <Ref. to 2-8 [W2A0].>

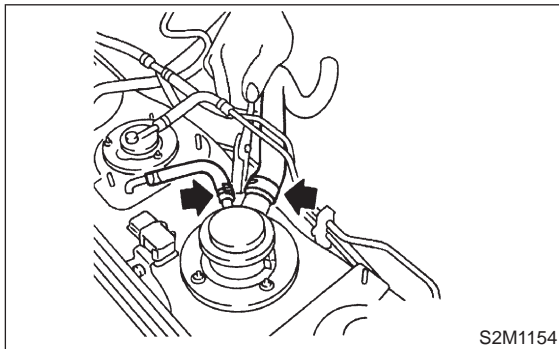




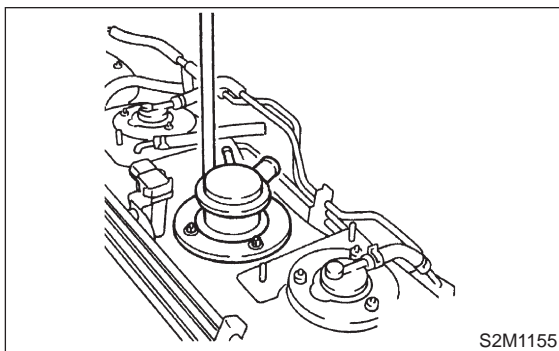
6) Remove protector cover.



7) Move clips, and disconnect hoses from vent valve.



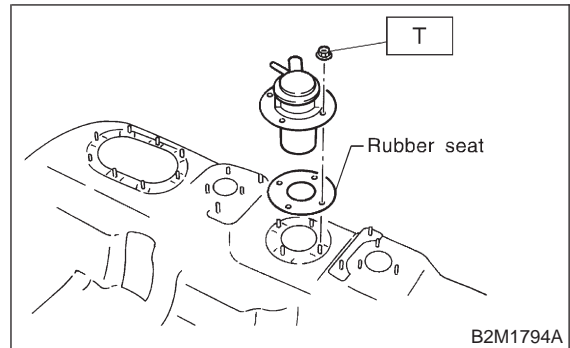
8) Remove nuts which install vent valve on fuel tank.



9) Installation is in the reverse order of removal.

**CAUTION:**  
Replace rubber seat with a new one.

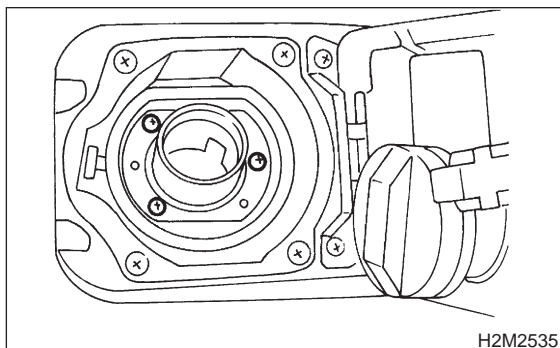
**Tightening torque:**  
**T:  $4.4 \pm 1.5$  N·m ( $0.45 \pm 0.15$  kg·m,  $3.3 \pm 1.1$  ft·lb)**



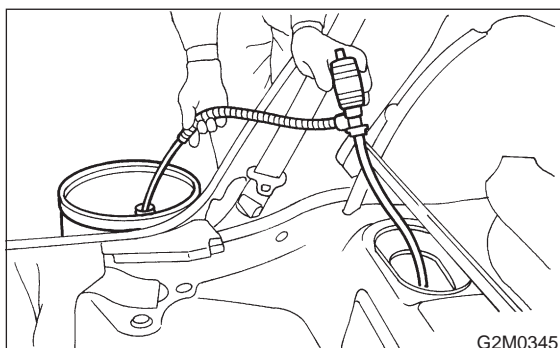
## 12. Shut Valve

### A: REMOVAL AND INSTALLATION

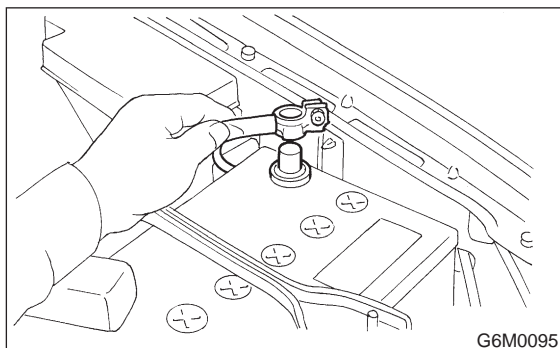
- 1) Release fuel pressure. <Ref. to 2-8 [W1B0].>
- 2) Open fuel flap lid, and remove fuel filler cap.



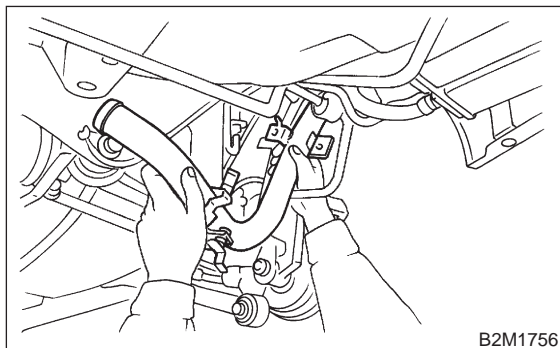
- 3) Drain fuel from fuel tank. <Ref. to 2-8 [W1C0].>



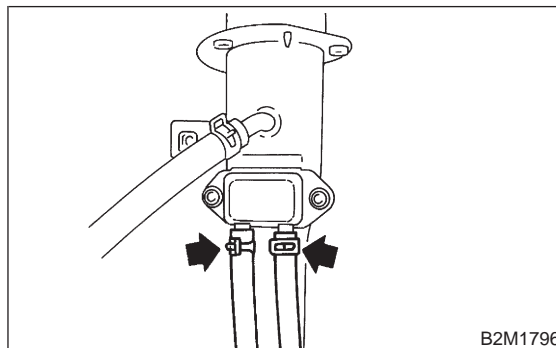
- 4) Disconnect battery ground cable.



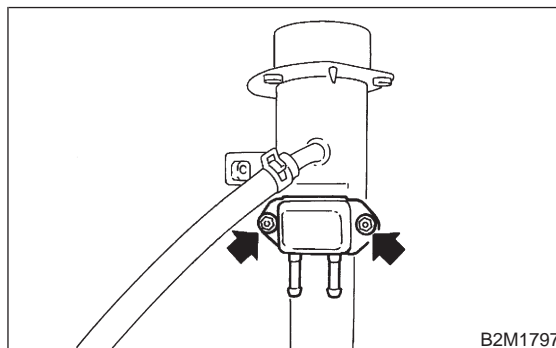
- 5) Remove fuel filler pipe. <Ref. to 2-8 [W1B0].>



- 6) Disconnect evaporation hoses from shut valve.



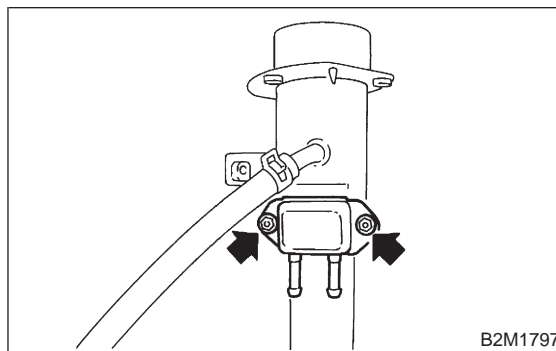
- 7) Remove shut valve from fuel filler pipe.



- 8) Installation is in the reverse order of removal.

**Tightening torque:**

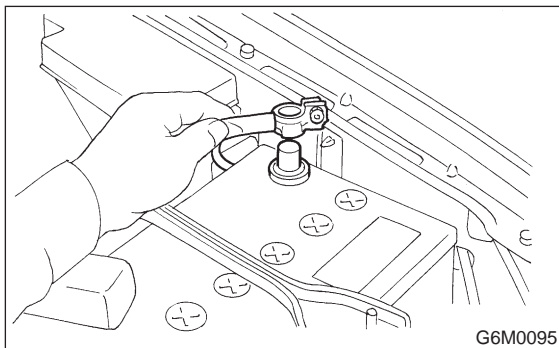
**$4.4 \pm 1.5 \text{ N} \cdot \text{m}$  ( $0.45 \pm 0.15 \text{ kg} \cdot \text{m}$ ,  $3.3 \pm 1.1 \text{ ft} \cdot \text{lb}$ )**



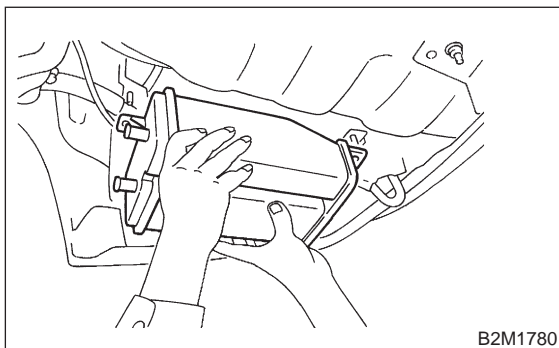
## 13. Drain Valve

### A: REMOVAL AND INSTALLATION

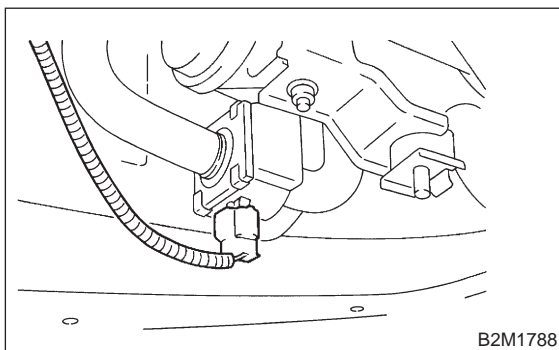
- 1) Disconnect battery ground cable.



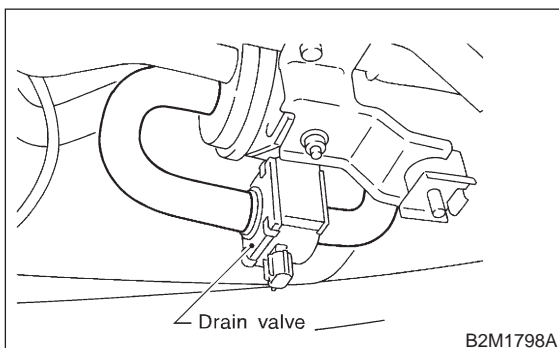
- 2) Lift-up the vehicle.  
3) Remove canister. <Ref. to 2-1 [W3A0].>



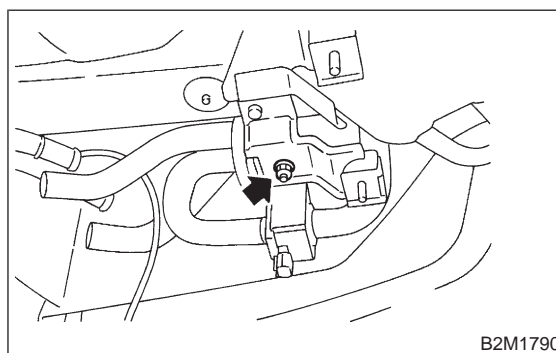
- 4) Disconnect connector from drain valve.



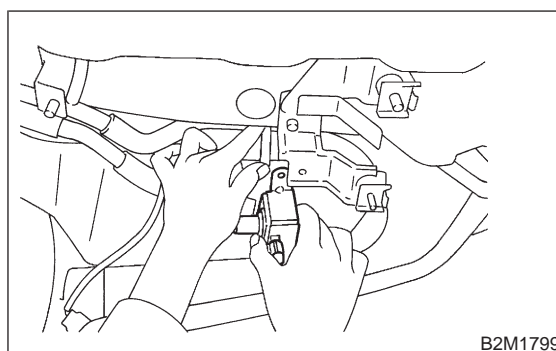
- 5) Disconnect evaporation hoses from drain valve.



- 6) Remove bolt which installs air filter and drain valve brackets on body.



- 7) Move air filter to upper side, and remove drain valve with bracket.



- 8) Installation is in the reverse order of removal.

#### **Tightening torque:**

**$22.5 \pm 7 \text{ N}\cdot\text{m}$  ( $2.3 \pm 0.7 \text{ kg}\cdot\text{m}$ ,  $16.6 \pm 5.1 \text{ ft}\cdot\text{lb}$ )**

