

# **EMISSION CONTROL**

## **(AUX. EMISSION CONTROL DEVICES)**

### 1. General Description

#### A: CAUTION

- Wear work 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 and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Be careful not to burn yourself, 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 rigid racks at the specified points.
- Before disconnecting electrical connectors of sensors or units, be sure to disconnect the ground cable from battery.

## 2. Front Catalytic Converter

### A: REMOVAL

Front and rear catalytic converters and center exhaust pipe are integrated into one unit; therefore, the removal procedure is the same as that for center exhaust pipe. <Ref. to EX(H4SO)-7, REMOVAL, Center Exhaust Pipe.>

### B: INSTALLATION

Front and rear catalytic converters and center exhaust pipe are integrated into one unit; therefore, the installation procedure is the same as that for center exhaust pipe. <Ref. to EX(H4SO)-7, INSTALLATION, Center Exhaust Pipe.>

### C: INSPECTION

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.

### 3. Rear Catalytic Converter

#### A: REMOVAL

Front and rear catalytic converters and center exhaust pipe are integrated into one unit; therefore, the removal procedure is the same as that for front catalytic converter. <Ref. to EX(H4SO)-7, REMOVAL, Center Exhaust Pipe.>

#### B: INSTALLATION

Front and rear catalytic converters and center exhaust pipe are integrated into one unit; therefore, the installation procedure is the same as that for front catalytic converter. <Ref. to EX(H4SO)-7, INSTALLATION, Center Exhaust Pipe.>

#### C: INSPECTION

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.

## **EGR Valve**

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### **4. EGR Valve**

#### **A: SPECIFICATION**

Refer to "EGR Valve" for removal and installation.

<Ref. to FU(H4SO)-29, EGR Valve.>

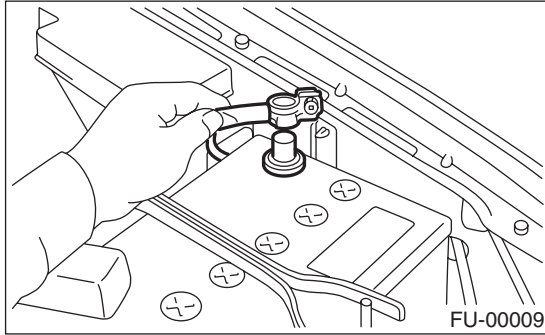
## Canister

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

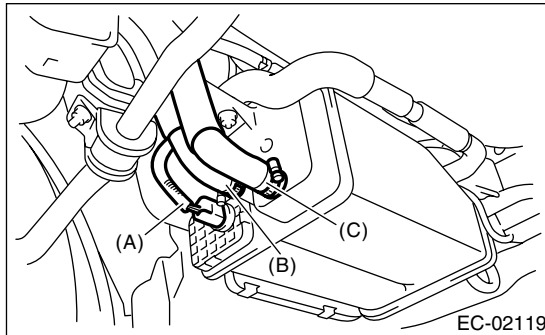
### 5. Canister

#### A: REMOVAL

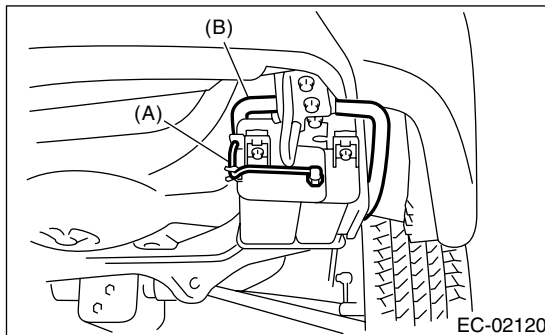
- 1) Disconnect the ground cable from battery.



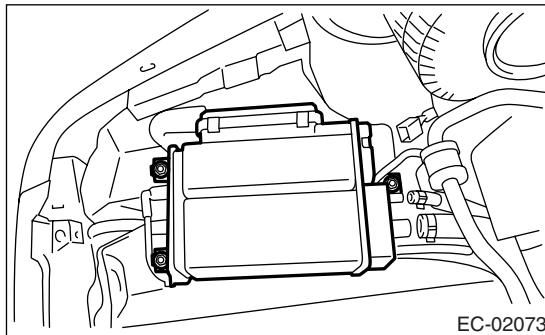
- 2) Lift up the vehicle.
- 3) Disconnect connector (A) from drain valve.
- 4) Disconnect evaporation hoses (B) and (C) from canister.



- 5) Disconnect quick connector (A) from canister.
- 6) Disconnect drain hoses (B) from canister.



- 7) Remove the canister from vehicle.

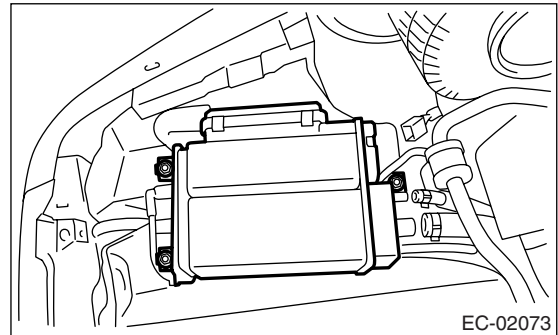


#### B: INSTALLATION

Install in the reverse order of removal.

**Tightening torque:**

**23 N·m (2.3 kgf-m, 17 ft-lb)**



#### C: INSPECTION

Make sure the canister and canister hoses are not cracked or loose.

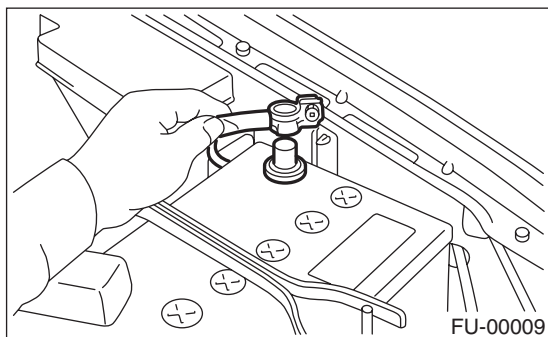
## Purge Control Solenoid Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

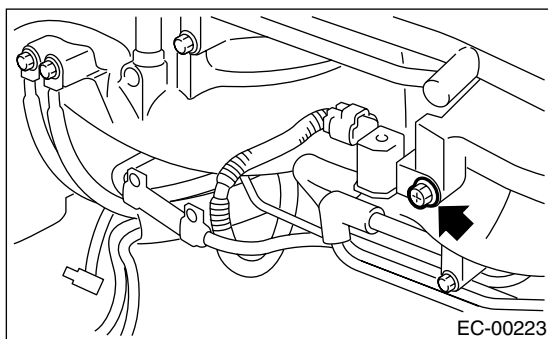
### 6. Purge Control Solenoid Valve

#### A: REMOVAL

- 1) Disconnect the ground cable from battery.



- 2) Disconnect the connector and hoses of purge control solenoid valve, and then remove the purge control solenoid valve.

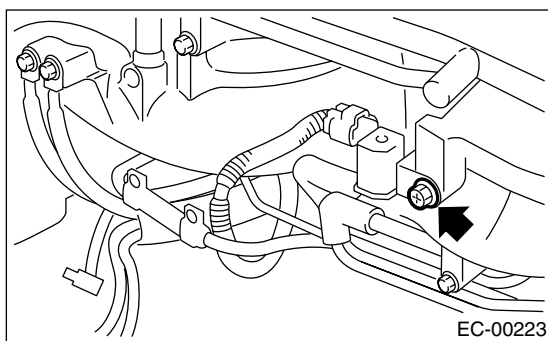


#### B: INSTALLATION

Install in the reverse order of removal.

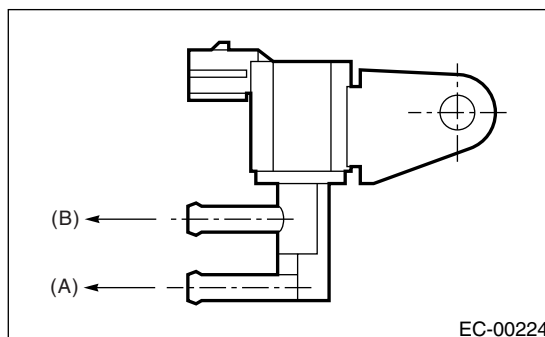
#### *Tightening torque:*

**19 N·m (1.9 kgf-m, 14.0 ft-lb)**



#### NOTE:

Connect the evaporation hose as shown in the figure.



(A) To fuel pipe (Evaporation line)

(B) To intake manifold

#### C: INSPECTION

Make sure the hoses are not cracked or loose.

## Fuel Level Sensor

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### 7. Fuel Level Sensor

#### A: REMOVAL

For removal procedure, refer to “FU” section. <Ref. to FU(H4SO)-51, REMOVAL, Fuel Level Sensor.>

#### B: INSTALLATION

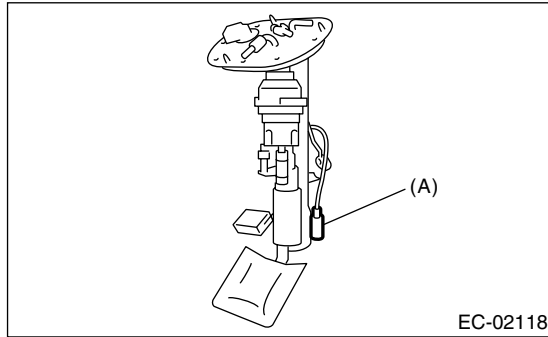
For installation procedure, refer to “FU” section. <Ref. to FU(H4SO)-51, INSTALLATION, Fuel Level Sensor.>



## 8. Fuel Temperature Sensor

### A: REMOVAL

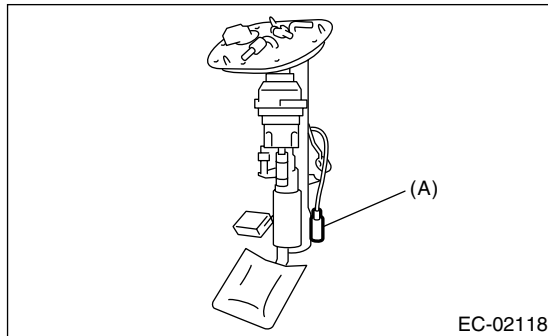
Fuel temperature sensor and fuel level sensor are integrated into one unit; therefore, the removal procedure is the same as that for fuel level sensor.  
<Ref. to FU(H4SO)-51, REMOVAL, Fuel Level Sensor.>



(A) Fuel temperature sensor

### B: INSTALLATION

Fuel temperature sensor and fuel level sensor are integrated into one unit; therefore, the installation procedure is the same as that for fuel level sensor.  
<Ref. to FU(H4SO)-51, INSTALLATION, Fuel Level Sensor.>



(A) Fuel temperature sensor

## Fuel Sub Level Sensor

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### 9. Fuel Sub Level Sensor

#### A: REMOVAL

For removal procedure, refer to "FU" section. <Ref. to FU(H4SO)-52, REMOVAL, Fuel Sub Level Sensor.>

#### B: INSTALLATION

For installation procedure, refer to "FU" section. <Ref. to FU(H4SO)-52, INSTALLATION, Fuel Sub Level Sensor.>

# Fuel Tank Pressure Sensor

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

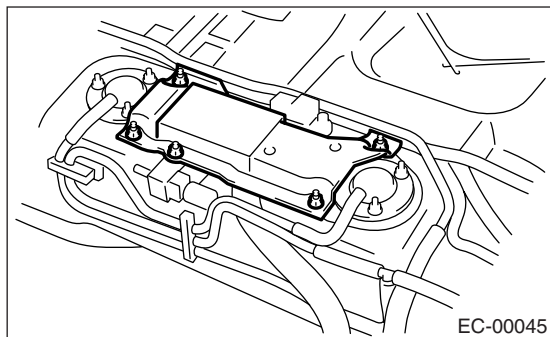
## 10. Fuel Tank Pressure Sensor

### A: REMOVAL

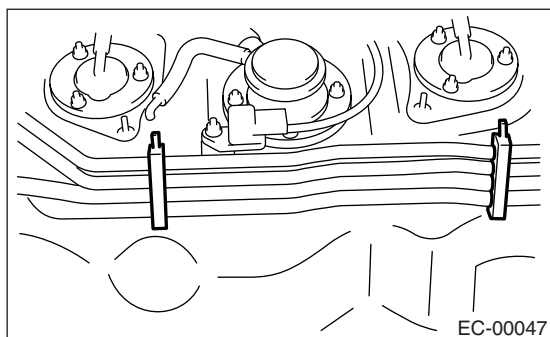
#### WARNING:

- Place "NO FIRE" signs near the working area.
- Be careful not to spill fuel.

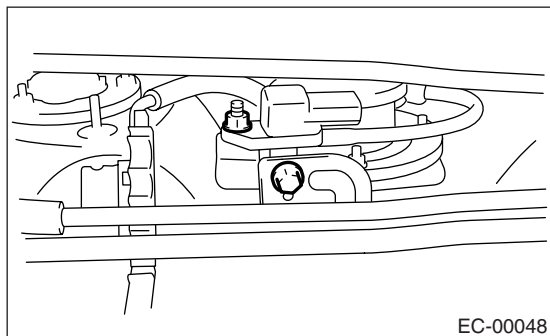
- 1) Remove the fuel tank. <Ref. to FU(H4SO)-42, REMOVAL, Fuel Tank.>
- 2) Remove the protector cover.



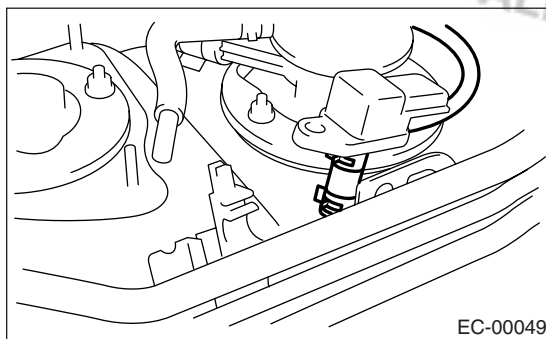
- 3) Disconnect the connector from fuel tank pressure sensor.
- 4) Release the clips which hold the fuel pipes onto fuel tank.



- 5) Remove the nuts and bolts which install the fuel tank pressure sensor on bracket.



- 6) Disconnect the pressure hose from fuel tank pressure sensor.

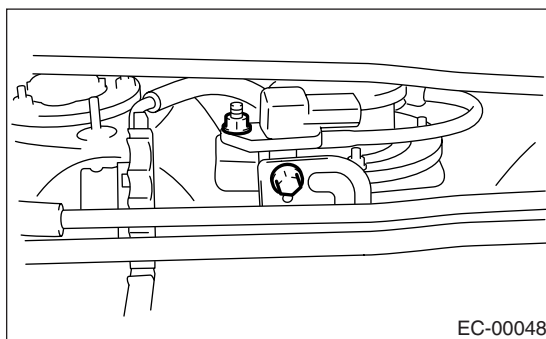


### B: INSTALLATION

Install in the reverse order of removal.

#### Tightening torque:

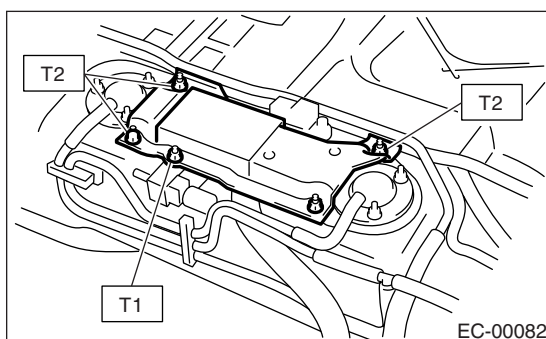
**7.4 N·m (0.75 kgf-m, 5.4 ft-lb)**



#### Tightening torque:

**T1: 7.4 N·m (0.75 kgf-m, 5.4 ft-lb)**

**T2: 4.4 N·m (0.45 kgf-m, 3.3 ft-lb)**



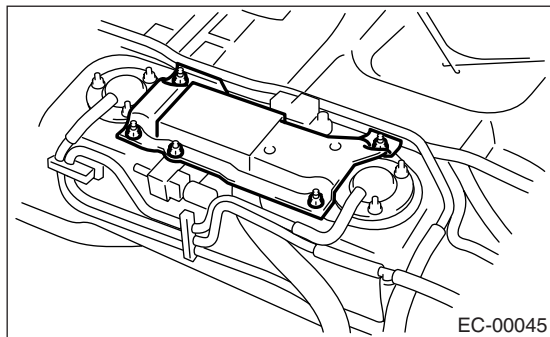
### C: INSPECTION

Make sure the hoses are not cracked or loose.

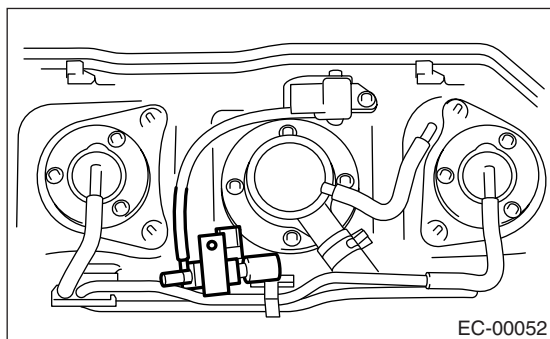
### 11. Fuel Tank Sensor Control Valve

#### A: REMOVAL

- 1) Remove the fuel tank. <Ref. to FU(H4SO)-42, REMOVAL, Fuel Tank.>
- 2) Remove the protector cover.



- 3) Disconnect the connector from fuel tank sensor control valve.
- 4) Disconnect the hose, and then remove the fuel tank sensor control valve.



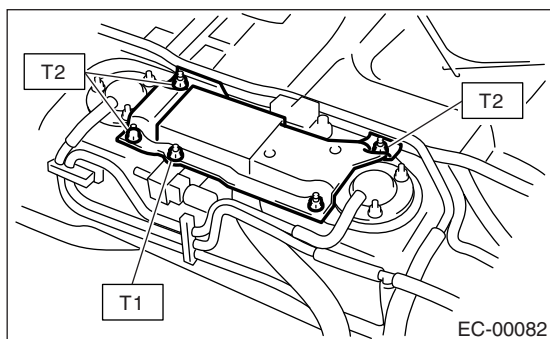
#### B: INSTALLATION

Install in the reverse order of removal.

##### *Tightening torque:*

**T1: 7.4 N·m (0.75 kgf-m, 5.4 ft-lb)**

**T2: 4.4 N·m (0.45 kgf-m, 3.3 ft-lb)**



#### C: INSPECTION

Make sure the hoses are not cracked or loose.

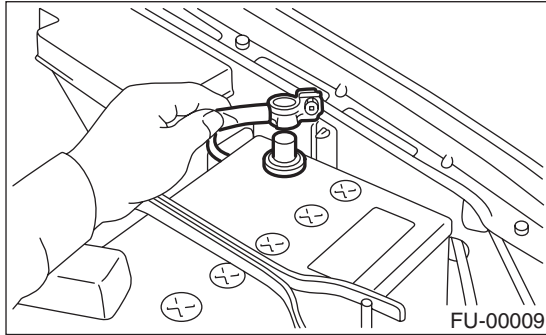
# Pressure Control Solenoid Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

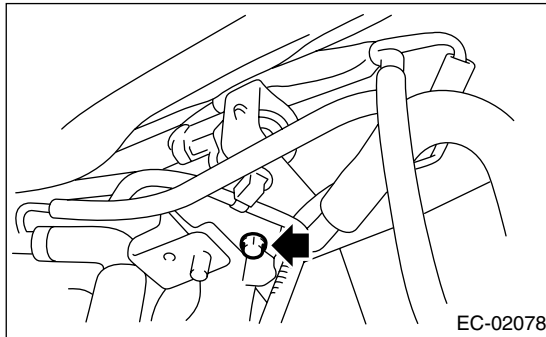
## 12. Pressure Control Solenoid Valve

### A: REMOVAL

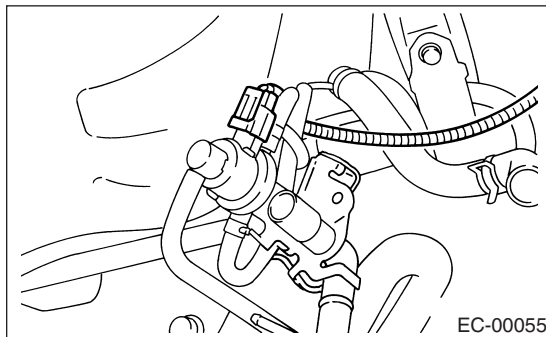
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.



- 3) Lift up the vehicle.
- 4) Remove the canister. <Ref. to EC(H4SO)-6, REMOVAL, Canister.>
- 5) Remove the bolt which installs the pressure control solenoid valve holding bracket on body.

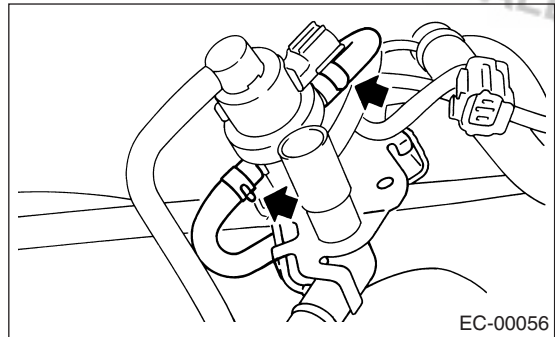


- 6) Disconnect the connector from pressure control solenoid valve.

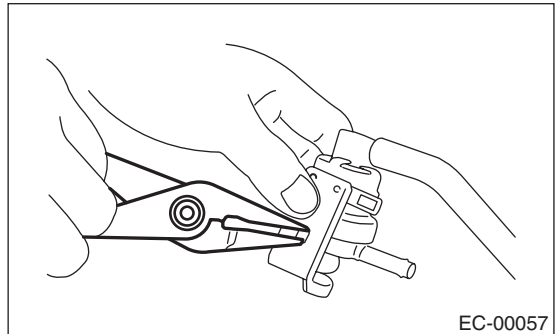


- 7) Disconnect the two evaporation hoses from pressure control solenoid valve.

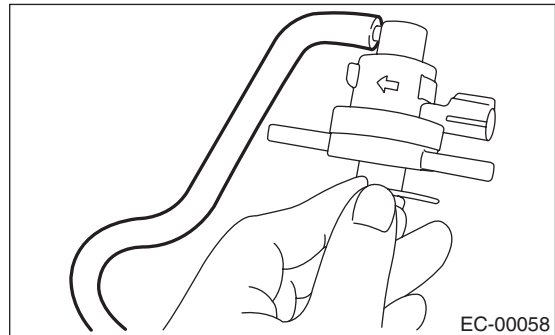
- 8) Remove the pressure control solenoid valve with bracket.



- 9) Remove the pressure control solenoid valve from bracket.



- 10) Disconnect the vacuum hose from pressure control solenoid valve.

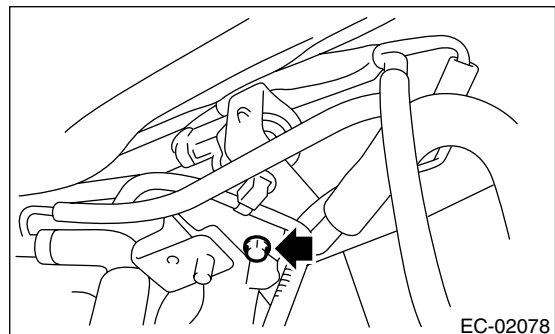


### B: INSTALLATION

Install in the reverse order of removal.

**Tightening torque:**

**17.6 N·m (1.8 kgf-m, 13.0 ft-lb)**



## **Pressure Control Solenoid Valve**

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### **C: INSPECTION**

Make sure the hoses are not cracked or loose.

## **Drain Filter**

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### **13.Drain Filter**

#### **A: SPECIFICATION**

Drain filter is built in the canister, and it is a part which cannot be disassembled.

## Vent Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

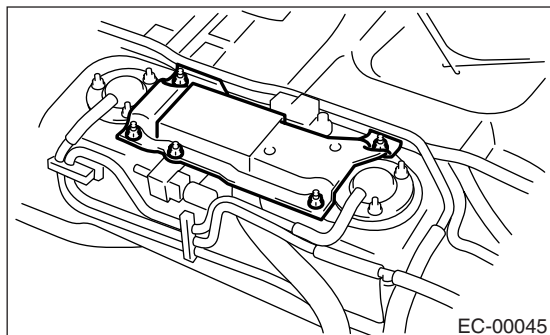
### 14.Vent Valve

#### A: REMOVAL

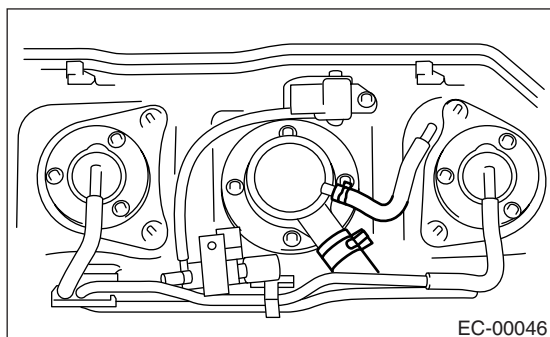
##### WARNING:

- Place “NO FIRE” signs near the working area.
- Be careful not to spill fuel.

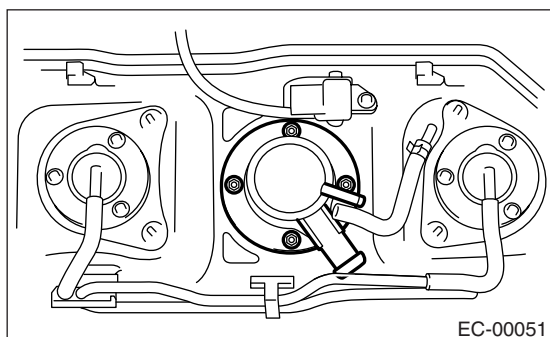
- 1) Remove the fuel tank. <Ref. to FU(H4SO)-42, REMOVAL, Fuel Tank.>
- 2) Remove the protector cover.



- 3) Remove the clips, and disconnect the hoses from vent valve.



- 4) Remove the nuts, and then remove the vent valve.



#### B: INSTALLATION

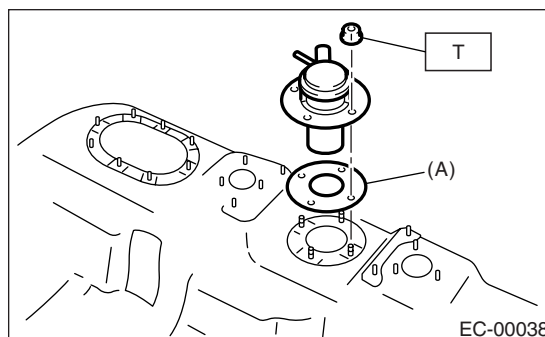
Install in the reverse order of removal.

##### NOTE:

Replace the rubber seat with a new one.

##### Tightening torque:

**T: 4.4 N·m (0.45 kgf-m, 3.3 ft-lb)**

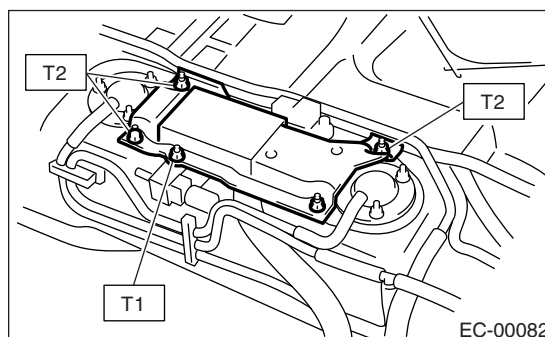


(A) Rubber seat

##### Tightening torque:

**T1: 7.4 N·m (0.75 kgf-m, 5.4 ft-lb)**

**T2: 4.4 N·m (0.45 kgf-m, 3.3 ft-lb)**



#### C: INSPECTION

Make sure the hoses are not cracked or loose.



## Shut Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

### 15. Shut Valve

#### A: REMOVAL

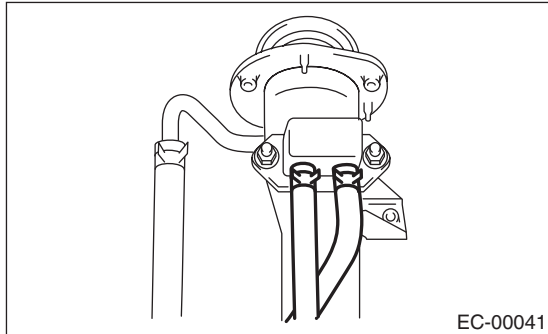
##### WARNING:

- Place “NO FIRE” signs near the working area.
- Be careful not to spill fuel.

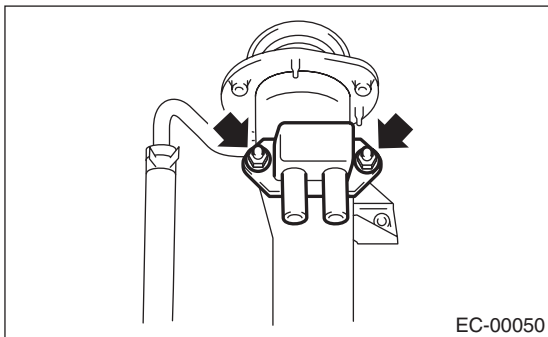
1) Remove the fuel filler pipe.

<Ref. to FU(H4SO)-45, REMOVAL, Fuel Filler Pipe.>

2) Disconnect the evaporation hoses from shut valve.



3) Remove the shut valve from fuel filler pipe.

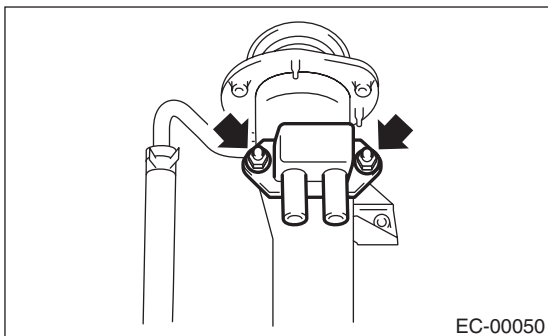


#### B: INSTALLATION

Install in the reverse order of removal.

##### Tightening torque:

**4.5 N·m (0.46 kgf-m, 3.3 ft-lb)**



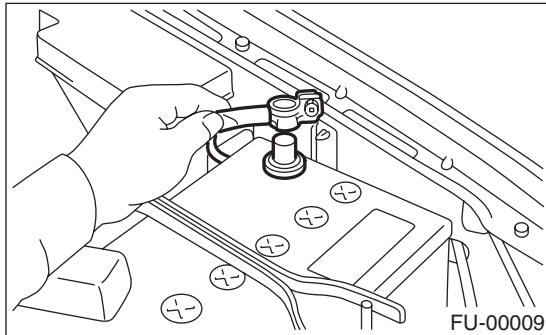
#### C: INSPECTION

Make sure the hoses are not cracked or loose.

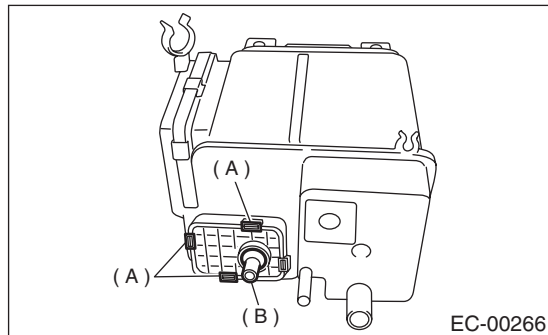
## 16.Drain Valve

### A: REMOVAL

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



- 3) Lift up the vehicle.
- 4) Remove the canister. <Ref. to EC(H4SO)-6, REMOVAL, Canister.>
- 5) Remove clip (A), and then remove drain valve (B) from canister.
- 6) Remove the filter from drain valve (B).



### B: INSTALLATION

Install in the reverse order of removal.

#### CAUTION:

- Assemble the drain valve filter without any clearance.
- Make sure the packing in the groove before assembling drain valve to canister.
- Replace the clip with new one.

### C: INSPECTION

- 1) Make sure that all hoses are installed securely.
- 2) Make sure that hoses are not cracked or loose.