

# EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES) *EC(H6DO)*

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	<b>Page</b>
1. General Description .....	2
2. Front Catalytic Converter .....	3
3. Rear Catalytic Converter .....	6
4. Canister.....	7
5. Purge Control Solenoid Valve .....	8
6. EGR Valve .....	10
7. Main Fuel Level Sensor .....	12
8. Fuel Temperature Sensor .....	13
9. Sub Fuel Level Sensor.....	14
10. Fuel Tank Pressure Sensor .....	15
11. Fuel Tank Sensor Control Valve .....	16
12. Pressure Control Solenoid Valve .....	17
13. Drain Filter.....	18
14. Vent Valve.....	19
15. Shut Valve.....	20
16. Drain Valve.....	21

## GENERAL DESCRIPTION

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### 1. General Description

#### A: CAUTION

- 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 ground cable from battery.

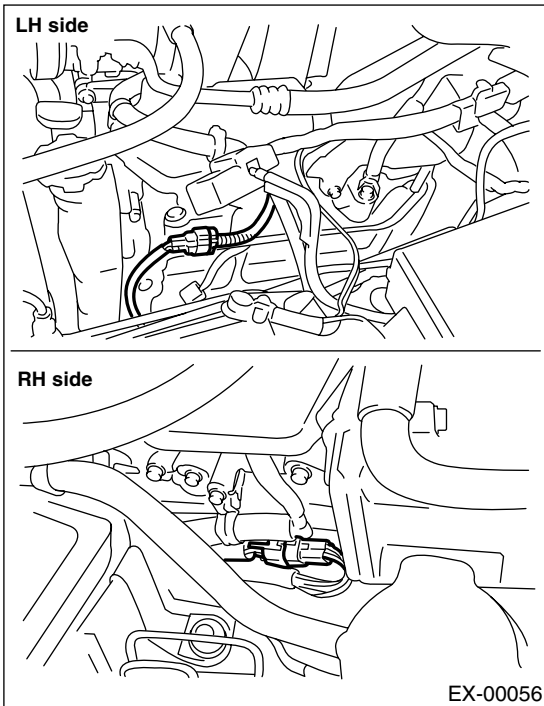
# FRONT CATALYTIC CONVERTER

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

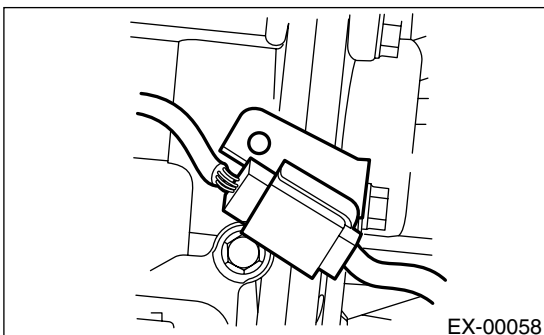
## 2. Front Catalytic Converter

### A: REMOVAL

- 1) Set the vehicle on the lift.
- 2) Remove battery.
- 3) Remove air cleaner case and air intake duct.  
<Ref. to IN(H6DO)-5, REMOVAL, Air Cleaner.>  
and <Ref. to IN(H6DO)-7, REMOVAL, Air Intake Duct.>
- 4) Disconnect front oxygen (A/F) sensor connectors.



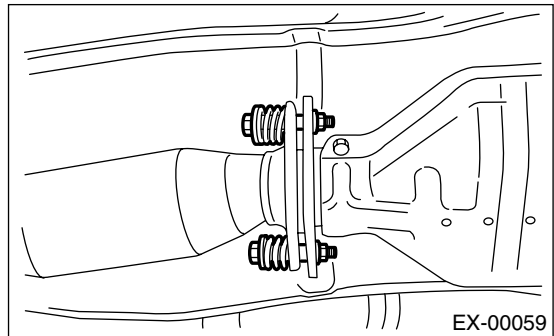
- 5) Lift-up the vehicle.
- 6) Remove under cover.
- 7) Remove front oxygen (A/F) sensor harness from the clips attached to both right and left cylinder head covers.
- 8) Disconnect harness connector from rear oxygen sensor connector.



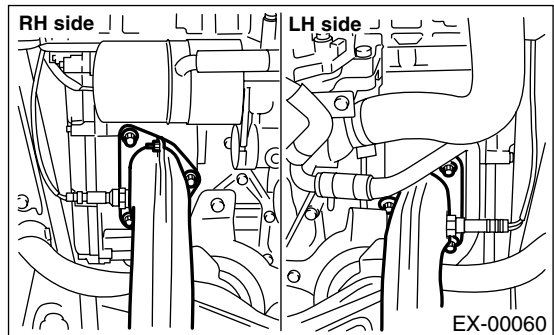
- 9) Separate front exhaust pipe and rear exhaust pipe.

### CAUTION:

Be careful, exhaust pipe is hot.



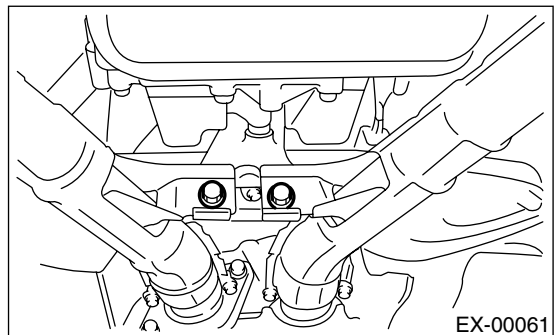
- 10) Remove nuts which hold front exhaust pipe onto cylinder heads.



- 11) Remove front exhaust pipe from hanger bracket.

### CAUTION:

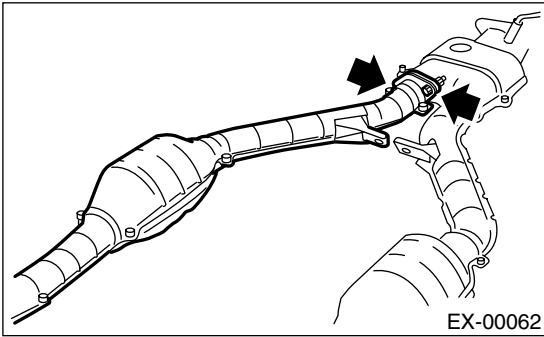
Be careful not to pull down front exhaust pipe.



# FRONT CATALYTIC CONVERTER

## EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

12) Separate front catalytic converter (RH) from front exhaust pipe.



### B: INSTALLATION

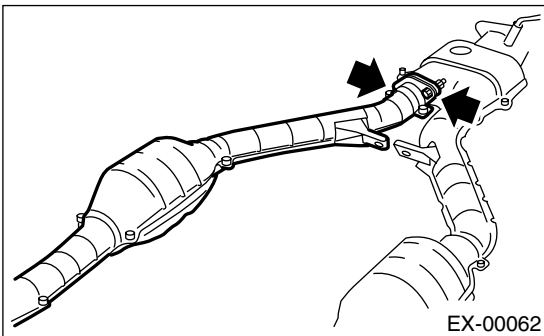
#### NOTE:

Replace gaskets with new ones.

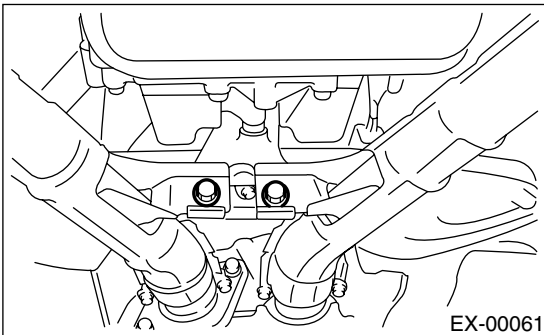
1) Install front catalytic converter (RH) to front exhaust pipe.

#### Tightening torque:

**30 N·m (3.1 kgf-m, 22.4 ft-lb)**



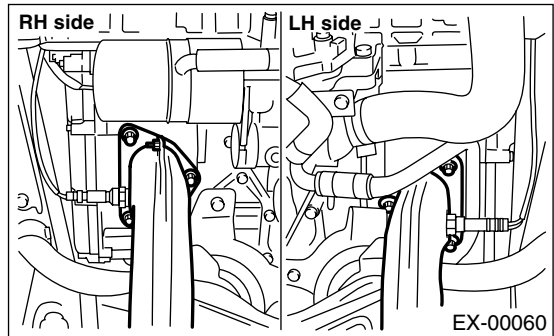
2) Install front exhaust pipe assembly to the vehicle. And temporarily tighten bolt which installs front exhaust pipe to hanger bracket.



3) Tighten nuts which hold front exhaust pipe onto cylinder heads.

#### Tightening torque:

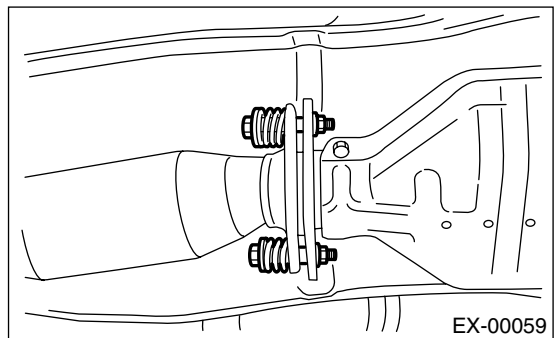
**30 N·m (3.1 kgf-m, 22.4 ft-lb)**



4) Tighten bolts which secure front exhaust pipe assembly to rear exhaust pipe.

#### Tightening torque:

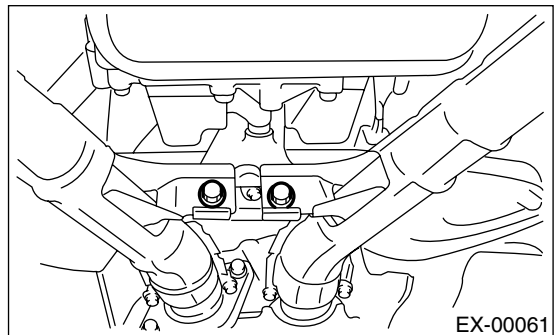
**18 N·m (1.8 kgf-m, 13.0 ft-lb)**



5) Tighten bolt which holds front exhaust pipes to hanger bracket.

#### Tightening torque:

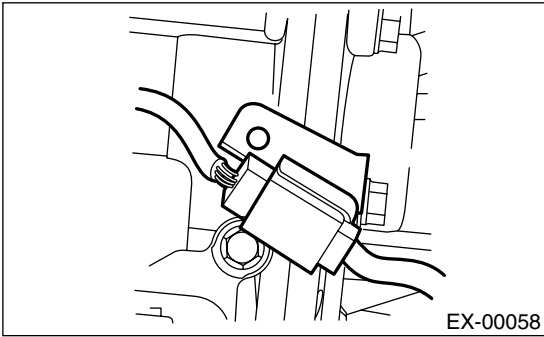
**35 N·m (3.6 kgf-m, 26.0 ft-lb)**



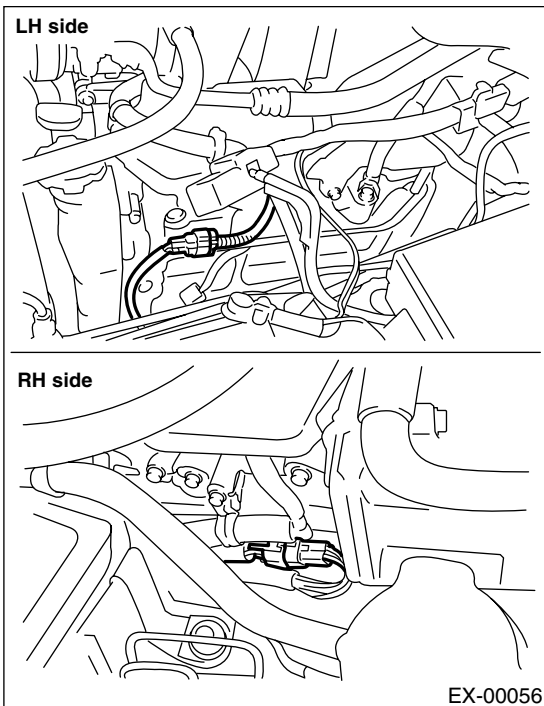
# FRONT CATALYTIC CONVERTER

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

- 6) Connect connector to rear oxygen sensor connector.



- 7) Install front oxygen (A/F) sensor harness to the clips attached to the cylinder head covers.
- 8) Install under cover.
- 9) Lower the vehicle.
- 10) Connect front oxygen (A/F) sensor connector.



- 11) Install air cleaner case and air intake duct. <Ref. to IN(H6DO)-5, INSTALLATION, Air Cleaner.> and <Ref. to IN(H6DO)-7, INSTALLATION, Air Intake Duct.>
- 12) Install battery.

## C: INSPECTION

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

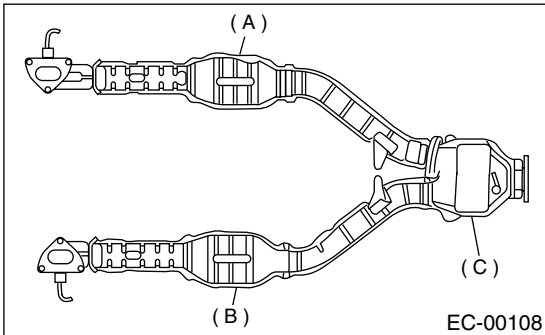
# REAR CATALYTIC CONVERTER

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

## 3. Rear Catalytic Converter

### A: REMOVAL

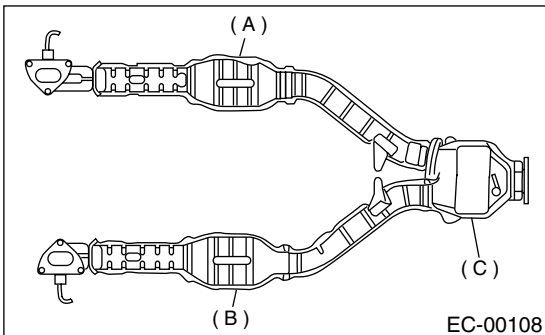
The front and rear catalytic converter are integrated into one unit. Therefore, the removal and installation procedures are the same as the those for the front catalytic converter. <Ref. to EC(H6DO)-3, REMOVAL, Front Catalytic Converter.>



- (A) Front catalytic converter RH
- (B) Front catalytic converter LH
- (C) Rear catalytic converter

### B: INSTALLATION

The front and rear catalytic converter are integrated into one unit. Therefore, the removal and installation procedures are the same as the ones described under front catalytic converter. <Ref. to EC(H6DO)-4, INSTALLATION, Front Catalytic Converter.>



- (A) Front catalytic converter RH
- (B) Front catalytic converter LH
- (C) Rear catalytic converter

### C: INSPECTION

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

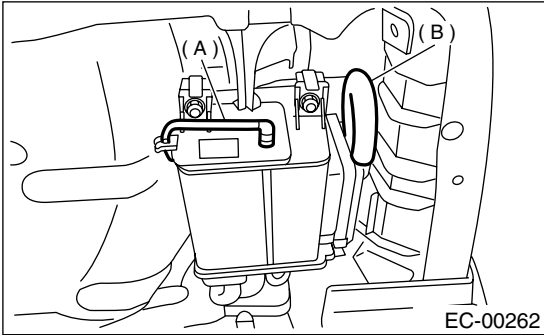
# CANISTER

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

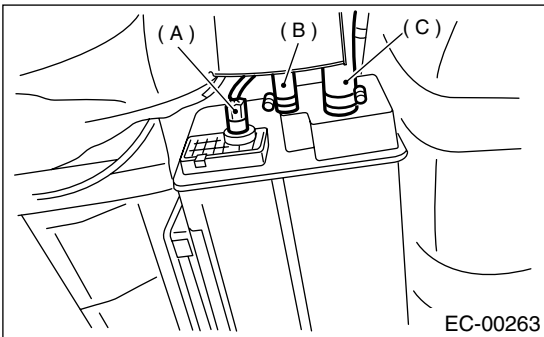
## 4. Canister

### A: REMOVAL

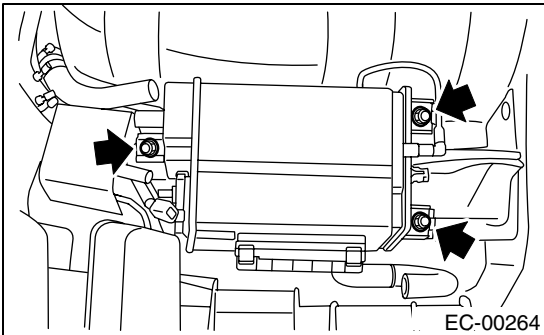
- 1) Lift-up the vehicle.
- 2) Disconnect connector (A) from drain valve.
- 3) Disconnect evaporation hoses (B) and (C) from canister.



- 4) Disconnect quick connector (A) from canister.
- 5) Disconnect evaporation hoses (B) and (C) from canister.



- 6) Remove the canister from body.

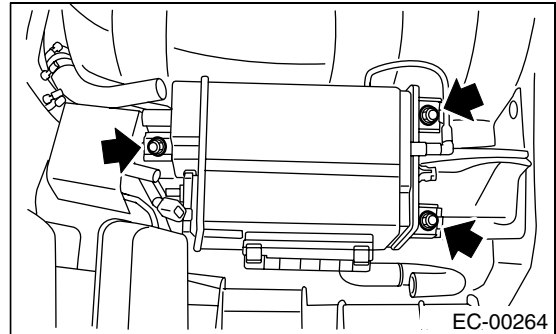


### B: INSTALLATION

- 1) 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.

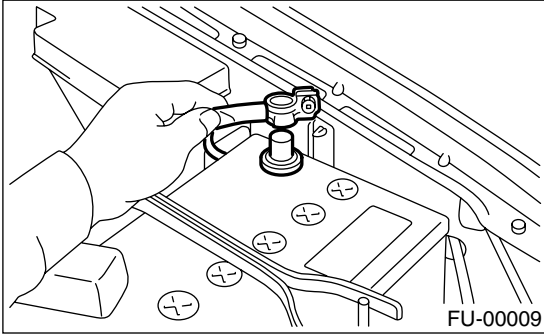
# PURGE CONTROL SOLENOID VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

## 5. Purge Control Solenoid Valve

### A: REMOVAL

1) Disconnect ground cable from battery.

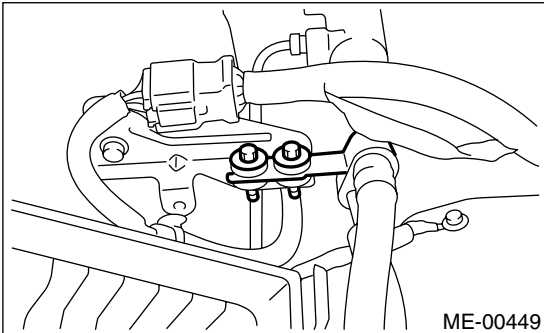


2) Remove power steering pump from bracket.

(1) Remove air intake duct and air cleaner case. <Ref. to IN(H6DO)-5, REMOVAL, Air Cleaner.> and <Ref. to IN(H6DO)-7, REMOVAL, Air Intake Duct.>

(2) Remove V-belt. <Ref. to ME(H6DO)-28, REMOVAL, V-belt.>

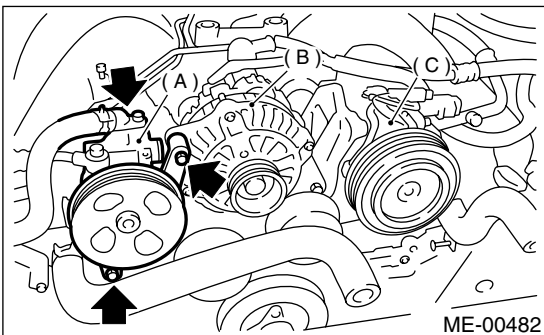
(3) Remove power steering oil pipe with bracket.



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

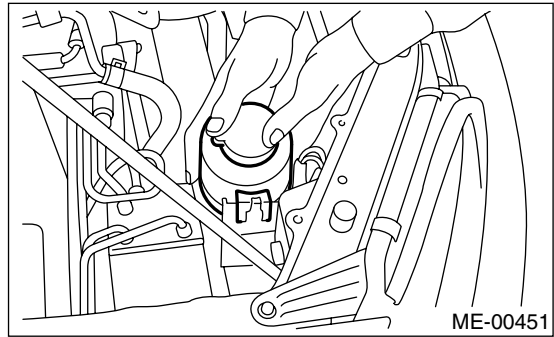
### CAUTION:

Do not separate hose and pipe from the pump main unit.

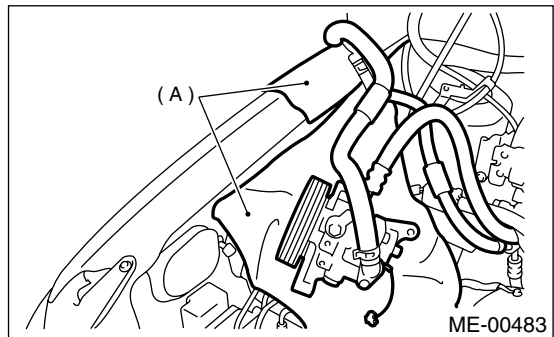


- (A) Power steering pump
- (B) Generator
- (C) A/C compressor

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

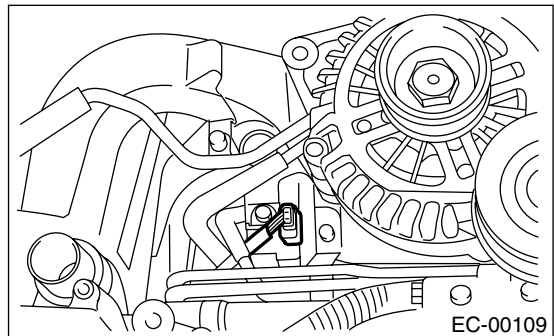


(6) Place power steering pump on the right side wheel apron.

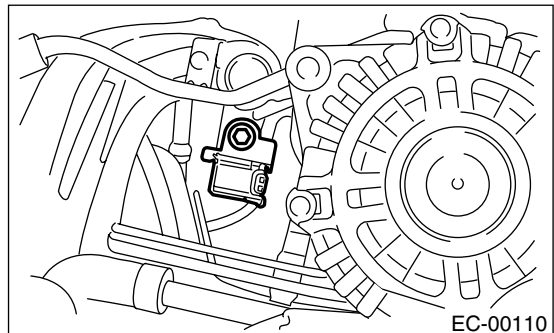


(A) Cloth

3) Disconnect connector and hoses from purge control solenoid valve.



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





# PURGE CONTROL SOLENOID VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

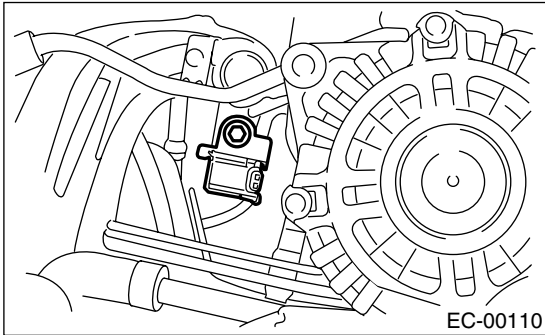
5) Take out purge control solenoid valve through the bottom of the intake manifold.

## B: INSTALLATION

Install in the reverse order of removal.

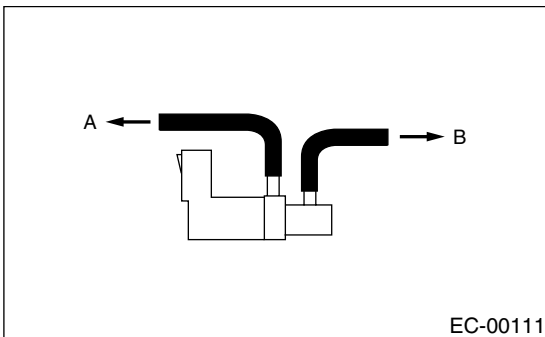
### *Tightening torque:*

**19 N·m (1.9 kgf-m, 14 ft-lb)**



### **CAUTION:**

**Carefully connect the evaporation hoses.**



A: To fuel pipe

B: To intake manifold

## C: INSPECTION

Make sure hoses are not cracked or loose.

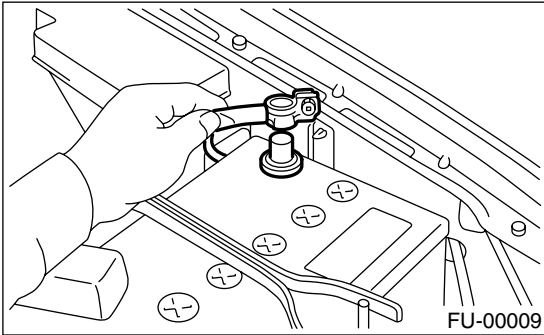
# EGR VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

## 6. EGR Valve

### A: REMOVAL

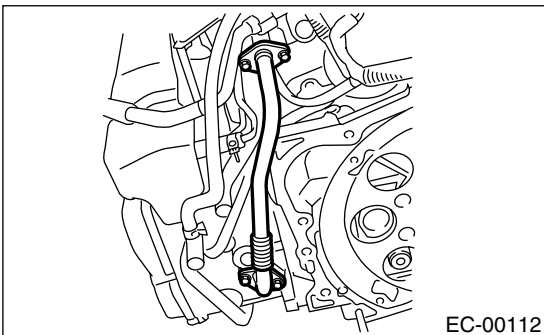
1) Disconnect ground cable from battery.



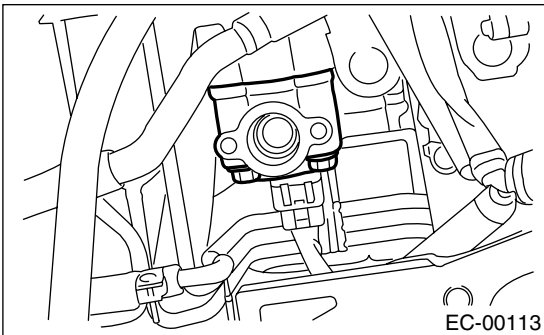
2) Remove air intake chamber. <Ref. to IN(H6DO)-6, REMOVAL, Air Intake Chamber.>

3) Remove starter. <Ref. to SC(H6DO)-6, REMOVAL, Starter.>

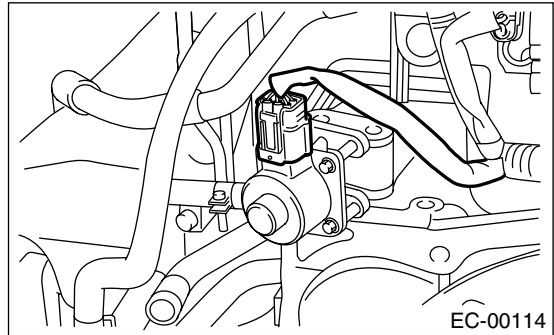
4) Remove EGR pipe from EGR valve and cylinder head.



5) Remove EGR valve from intake manifold.



6) Disconnect connector from EGR valve.

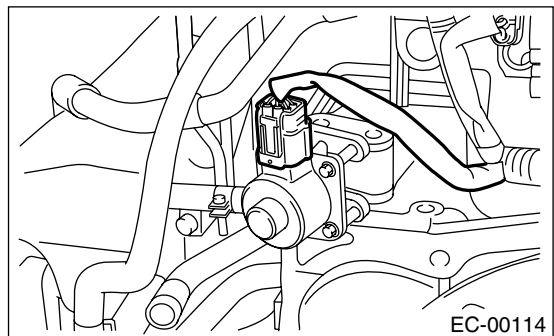


### B: INSTALLATION

NOTE:

Replace old gaskets with new one.

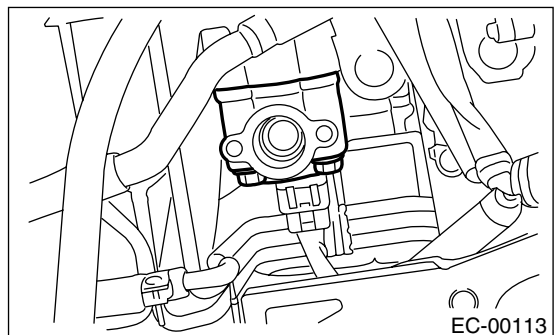
1) Connect connector EGR valve.



2) Install EGR valve to intake manifold.

**Tightening torque:**

**19 N·m (1.9 kgf-m, 14 ft-lb)**



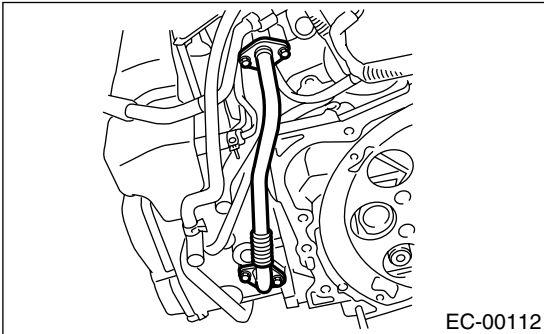
## EGR VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

3) Install EGR pipe to EGR valve and cylinder head.

**Tightening torque:**

**6.4 N·m (0.65 kgf-m, 4.7 ft-lb)**



4) Install starter. <Ref. to SC(H6DO)-6, INSTALLATION, Starter.>

5) Install air intake chamber. <Ref. to IN(H6DO)-6, INSTALLATION, Air Intake Chamber.>

6) Connect battery ground cable.

### **C: INSPECTION**

Check the EGR pipe, etc., for blockages or cracks.

# MAIN FUEL LEVEL SENSOR

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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## 7. Main Fuel Level Sensor

### A: REMOVAL

For work procedures, refer to “FU(H6DO)” section.  
<Ref. to FU(H6DO)-70, REMOVAL, Fuel Level Sensor.>

### B: INSTALLATION

For work procedures, refer to “FU(H6DO)” section.  
<Ref. to FU(H6DO)-70, INSTALLATION, Fuel Level Sensor.>

# FUEL TEMPERATURE SENSOR

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

## 8. Fuel Temperature Sensor

### A: REMOVAL

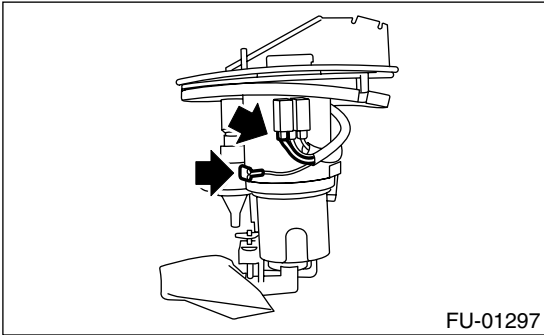
#### WARNING:

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

#### NOTE:

Fuel temperature sensor is built in fuel pump assembly.

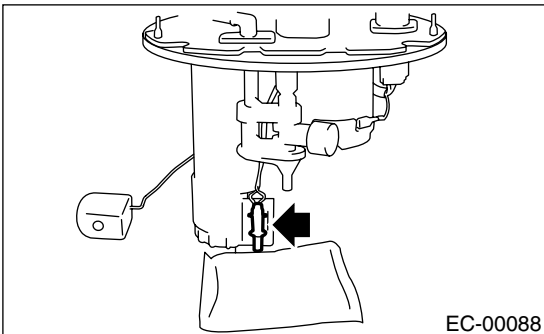
- 1) Remove fuel pump assembly. <Ref. to FU(H6DO)-68, REMOVAL, Fuel Pump.>
- 2) Disconnect connector from fuel pump bracket.



- 3) Remove fuel temperature sensor.

#### NOTE:

When replacing fuel temperature sensor, also replace fuel level sensor. <Ref. to FU(H6DO)-70, REMOVAL, Fuel Level Sensor.>

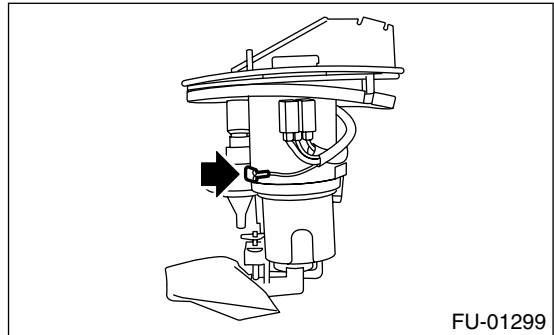


### B: INSTALLATION

- 1) Install in the reverse order of removal.

#### WARNING:

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



## **SUB FUEL LEVEL SENSOR**

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### **9. Sub Fuel Level Sensor**

#### **A: REMOVAL**

For work procedures, refer to “FU(H6)” section.  
<Ref. to FU(H6DO)-71, REMOVAL, Fuel Sub Level Sensor.>

#### **B: INSTALLATION**

For work procedures, refer to “FU(H6)” section.  
<Ref. to FU(H6DO)-71, INSTALLATION, Fuel Sub Level Sensor.>

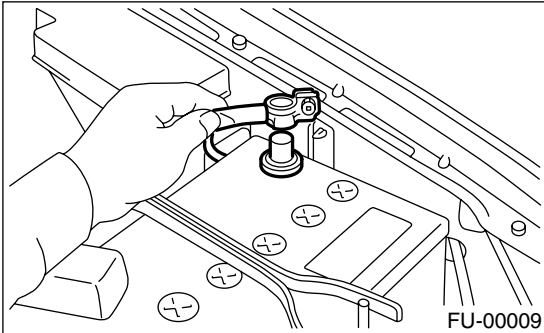
# FUEL TANK PRESSURE SENSOR

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

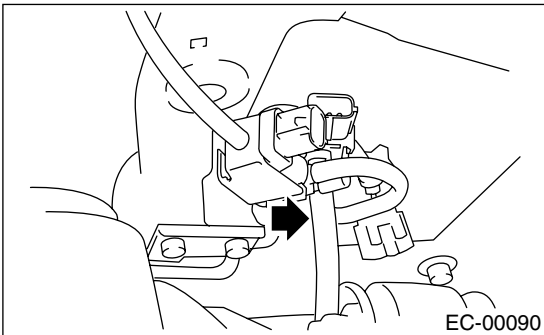
## 10. Fuel Tank Pressure Sensor

### A: REMOVAL

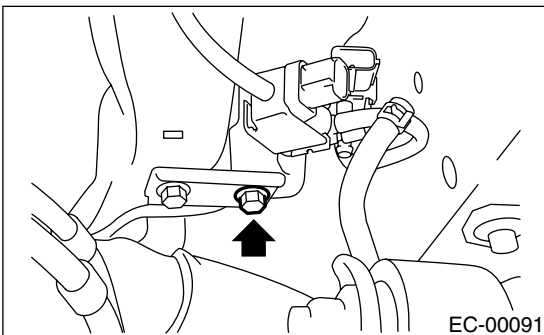
- 1) Set the vehicle on the lift.
- 2) Open fuel flap lid, and remove fuel filler cap.
- 3) Disconnect battery ground cable.



- 4) Lift-up the vehicle.
- 5) Disconnect connector from fuel tank pressure sensor and atmospheric pressure solenoid valve.
- 6) Disconnect pressure hose from fuel tank pressure sensor.



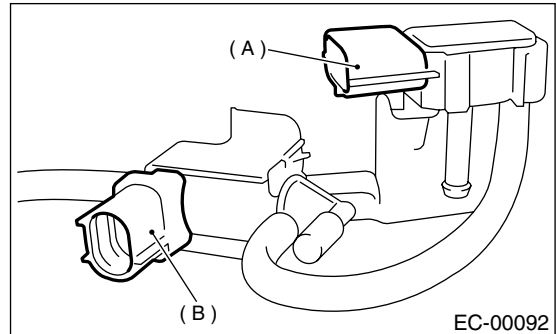
- 7) Remove fuel tank pressure sensor and atmospheric pressure solenoid valve with bracket.



- 8) Remove atmospheric pressure solenoid valve from bracket.

### NOTE:

Fuel tank pressure sensor cannot be removed because it is integral with bracket.



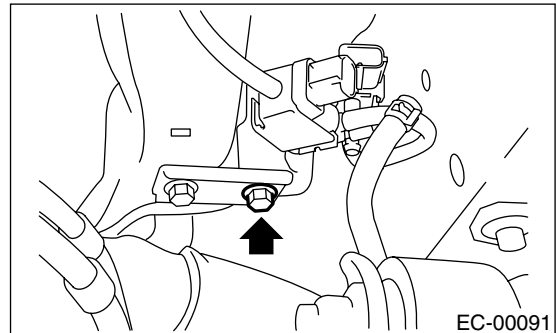
- (A) Fuel tank pressure sensor
- (B) Atmospheric pressure solenoid valve

### B: INSTALLATION

Install in the reverse order of removal.

### Tightening torque:

**7.4 N·m (0.75 kgf-m, 5.4 ft-lb)**



### C: INSPECTION

Make sure that hoses are not cracked or loose.

# FUEL TANK SENSOR CONTROL VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

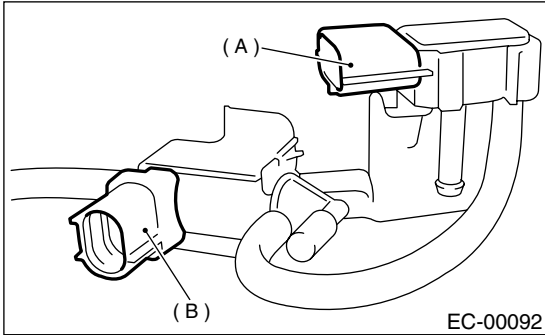
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## 11. Fuel Tank Sensor Control Valve

### A: REMOVAL

1) Remove fuel tank pressure sensor. <Ref. to EC(H6DO)-15, REMOVAL, Fuel Tank Pressure Sensor.>

2) Remove fuel tank sensor control valve from bracket.



- (1) Fuel tank pressure sensor
- (2) Fuel tank sensor control valve

### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

Make sure that hoses are not cracked or loose.



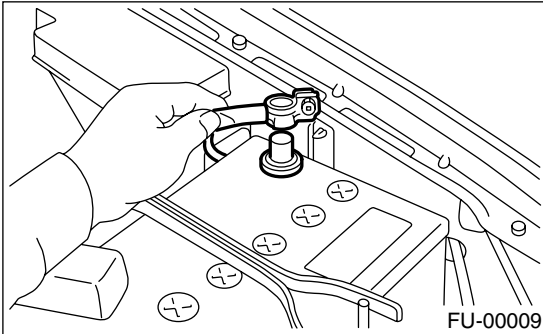
# PRESSURE CONTROL SOLENOID VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

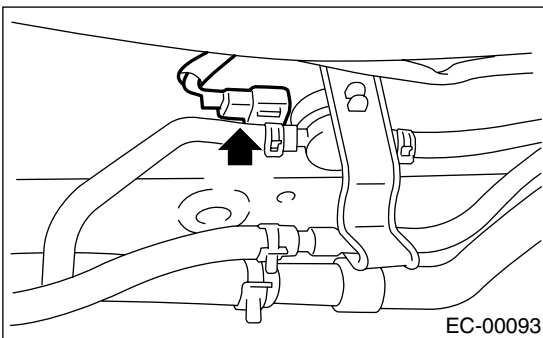
## 12. Pressure Control Solenoid Valve

### A: REMOVAL

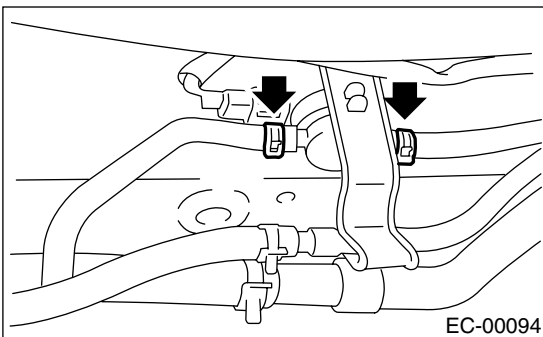
- 1) Set the vehicle on the lift.
- 2) Disconnect battery ground cable.



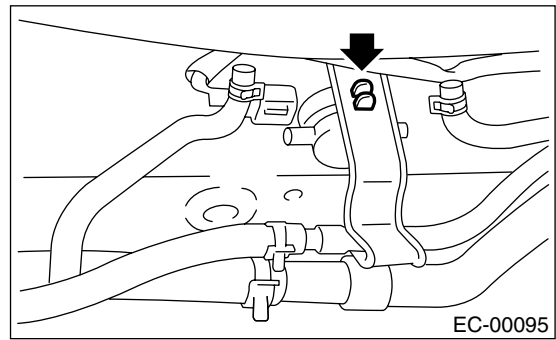
- 3) Lift-up the vehicle.
- 4) Disconnect connector from pressure control solenoid valve.



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



- 6) Remove pressure control solenoid valve from bracket.



### B: INSTALLTION

Install in the reverse order of removal.

### C: INSPECTION

Make sure that hoses are not cracked or loose.

## **DRAIN FILTER**

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### **13.Drain Filter**

#### **A: SPECIFICATIONS**

Drain filter is built-in canister and cannot be disassembled.

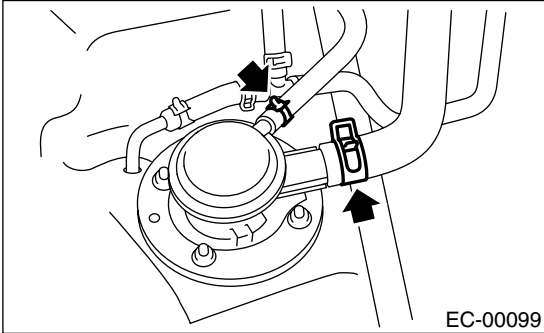
# VENT VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

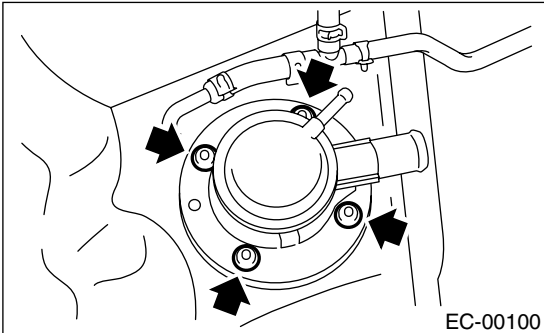
## 14. Vent Valve

### A: REMOVAL

- 1) Remove fuel tank. <Ref. to FU(H6DO)-53, REMOVAL, Fuel Tank.>
- 2) Move clips, and disconnect hoses from vent valve.



- 3) Remove nuts which install vent valve on fuel tank.



### B: INSTALLATION

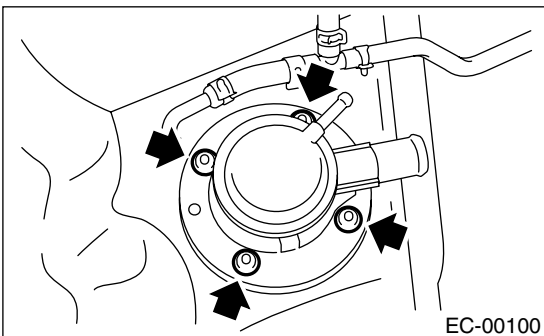
Install in the reverse order of removal.

NOTE:

Replace rubber seat with a new one.

**Tightening torque:**

**4.4 N·m (0.45 kgf-m, 3.3 ft-lb)**



### C: INSPECTION

Make sure that hoses are not cracked or loose.

# SHUT VALVE

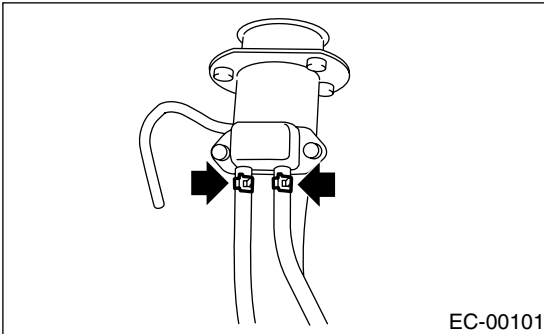
EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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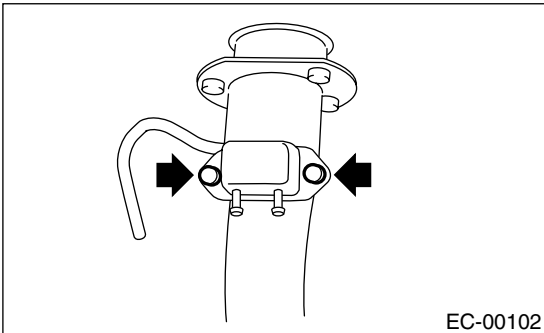
## 15. Shut Valve

### A: REMOVAL

- 1) Drain fuel from fuel tank. <Ref. to FU(H6DO)-53, REMOVAL, Fuel Tank.>
- 2) Remove fuel filler pipe. <Ref. to FU(H6DO)-61, REMOVAL, Fuel Filler Pipe.>
- 3) Disconnect evaporation hoses from shut valve.



- 4) Remove shut valve from fuel filler pipe.

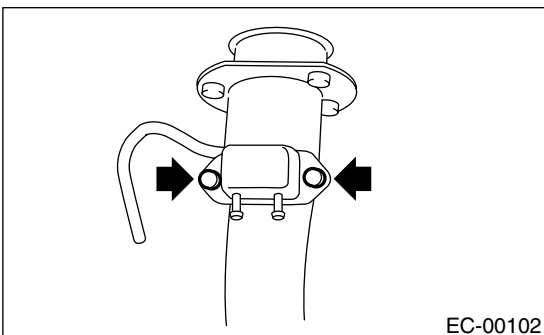


### B: INSTALLATION

Install in the reverse order of removal.

#### **Tightening torque:**

**4.4 N·m (0.45 kgf-m, 3.3 ft-lb)**



### C: INSPECTION

Make sure that hoses are not cracked or loose.

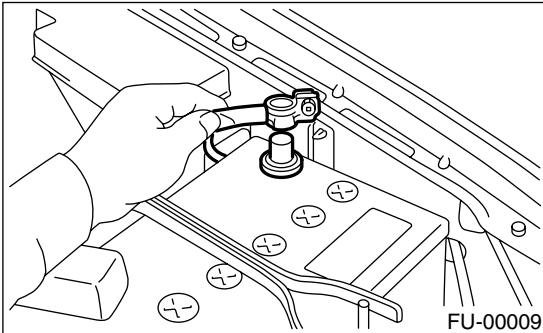
# DRAIN VALVE

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

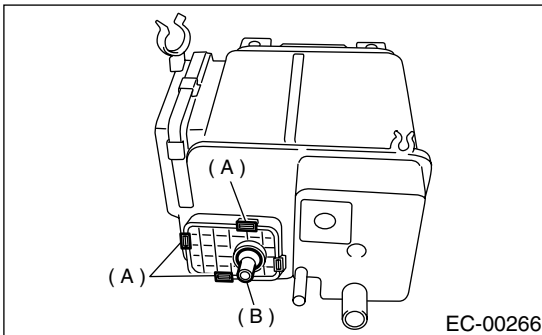
## 16. Drain Valve

### A: REMOVAL

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



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



### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

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

# **DRAIN VALVE**

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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**MEMO:**