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# **EMISSION CONTROL**

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

# General Description

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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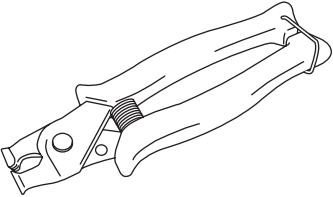
## 1. General Description

### A: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground cable from battery.

### B: PREPARATION TOOL

#### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18353AA000	18353AA000	CLAMP PLIERS	<ul style="list-style-type: none"><li>• Used for removing and installing the PCV hose.</li><li>• This is a general tool made by the French company CAILLAU. (code) 54.0.000.205 To make this easier to obtain in the same way as genuine Subaru parts, it has been provided with a tool number as an ST.</li></ul>

# Front Catalytic Converter

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## 2. Front Catalytic Converter

### A: REMOVAL

The front catalytic converter is integrated into the front exhaust pipe; therefore, refer to “Front Exhaust Pipe” for the removal procedure. <Ref. to EX(H4SO)-6, REMOVAL, Front Exhaust Pipe.>

### B: INSTALLATION

The front catalytic converter is integrated into the front exhaust pipe; therefore, refer to “Front Exhaust Pipe” for the installation procedure. <Ref. to EX(H4SO)-7, INSTALLATION, Front Exhaust Pipe.>

### C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Check for hole or rust.

# Rear Catalytic Converter

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## 3. Rear Catalytic Converter

### A: REMOVAL

The rear catalytic converter is integrated into the center exhaust pipe; therefore, refer to “Center Exhaust Pipe” for the removal procedure. <Ref. to EX(H4SO)-9, REMOVAL, Center Exhaust Pipe.>

### B: INSTALLATION

The rear catalytic converter is integrated into the center exhaust pipe; therefore, refer to “Center Exhaust Pipe” for the installation procedure. <Ref. to EX(H4SO)-9, INSTALLATION, Center Exhaust Pipe.>

### C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Check for hole or rust.

# Canister

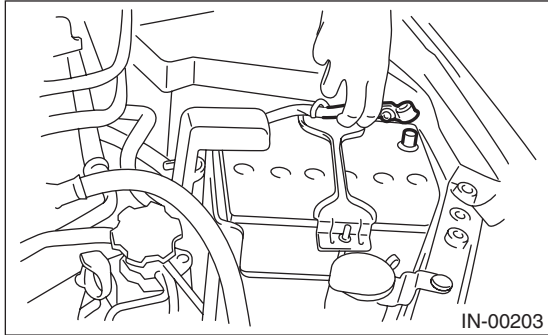
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## 4. Canister

### A: REMOVAL

1) Disconnect the ground cable from the battery.

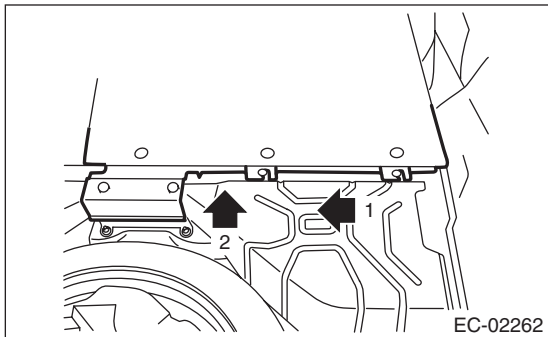


2) Open the rear gate, and remove the luggage floor mat. (Wagon model)

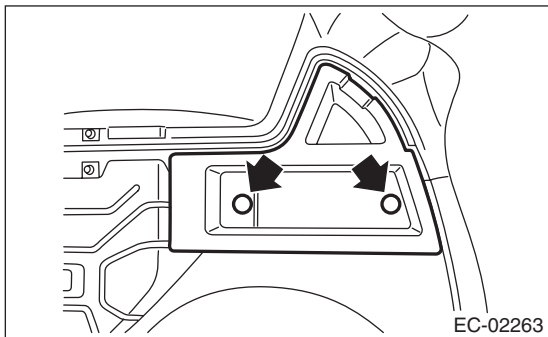
3) Open the trunk, and remove the trunk room mat. (Sedan model)

4) Tilt the rear seat backrest forward.

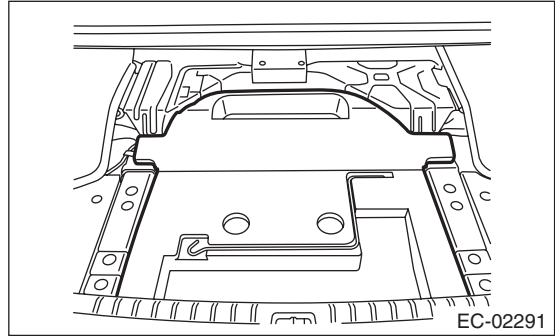
5) Slide the rear seat backrest cover RH as shown in the figure, and remove from canister cover RH.



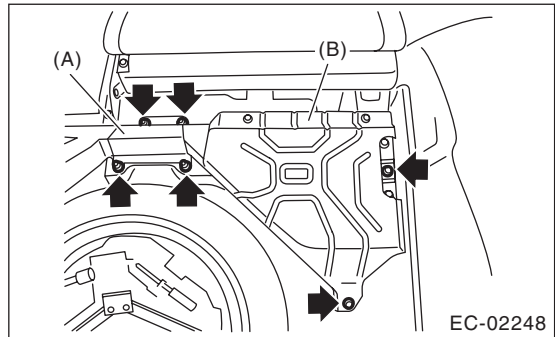
6) Remove the clips, and remove the luggage floor box RH. (Wagon model)



7) Remove the sub trunk. (Sedan model)



8) Remove center canister cover (A), and remove canister cover RH (B).



# Canister

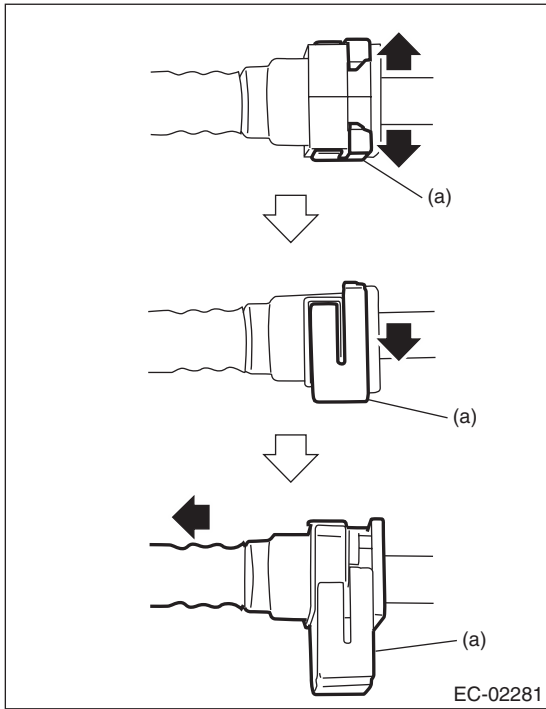
## EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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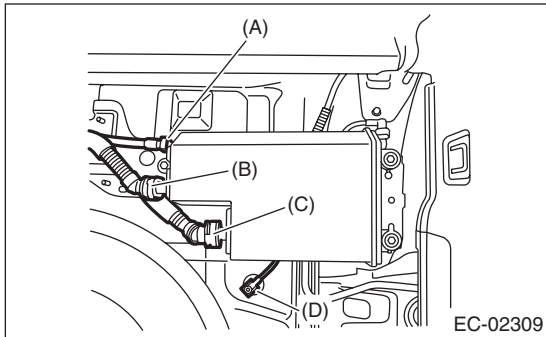
9) Disconnect the purge tube (A), vent tube (B), drain tube A (C) and PCV drain tube (D).

### NOTE:

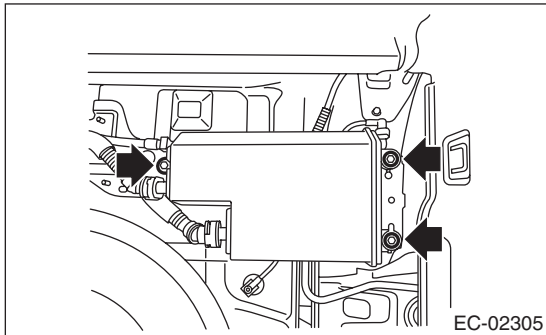
Disconnect the quick connector as shown in the figure.



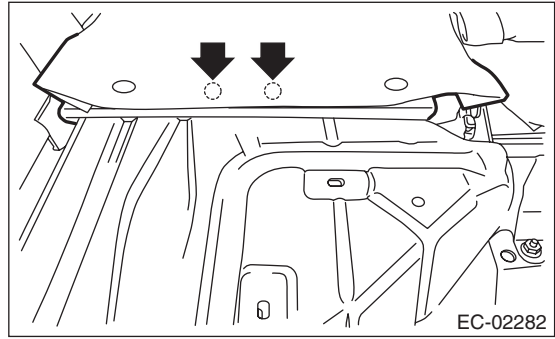
(a) Retainer



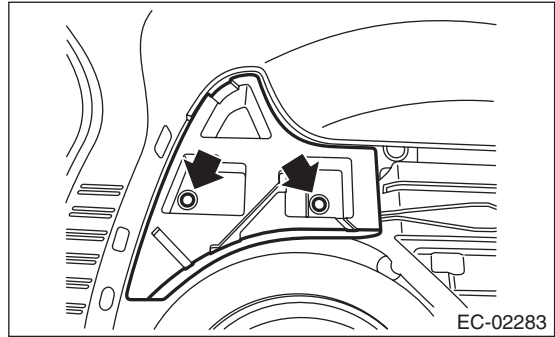
10) Remove the canister.



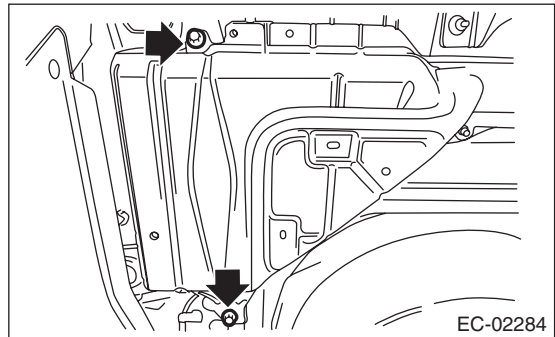
11) Remove the clip that is holding the rear seat backrest cover LH on the canister cover.



12) Remove the clip, and remove the luggage floor box LH. (Wagon model)



13) Remove the canister cover LH.



# Canister

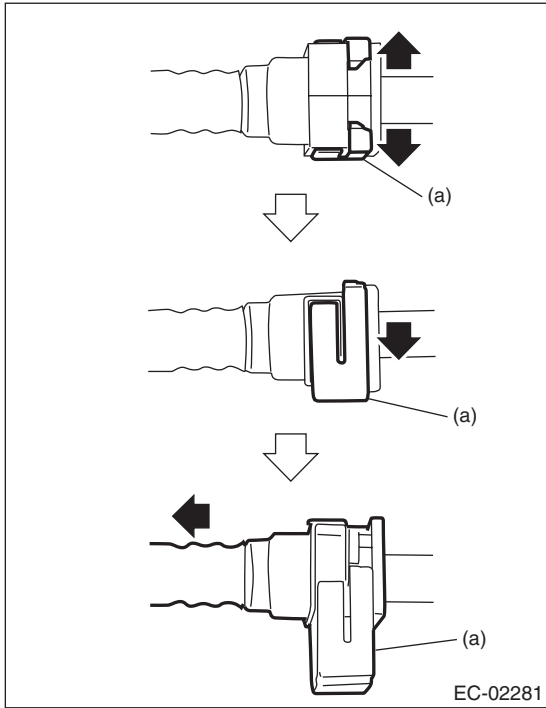
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14) Disconnect drain tube A (A) and drain tube B (B).

**NOTE:**

Disconnect the quick connector as shown in the figure.

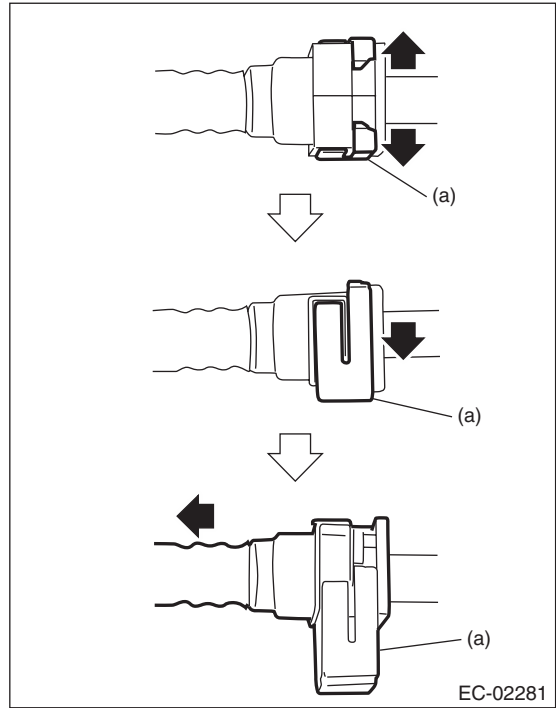


(a) Retainer

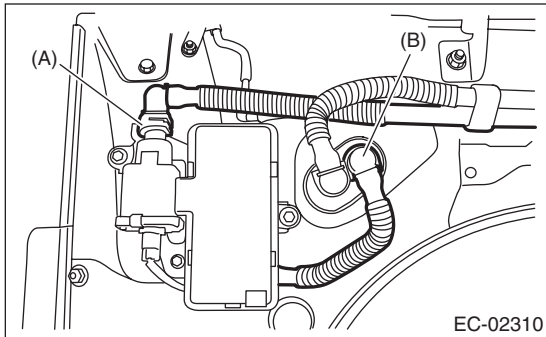
16) Disconnect purge tube (A) and vent tube (B).

**NOTE:**

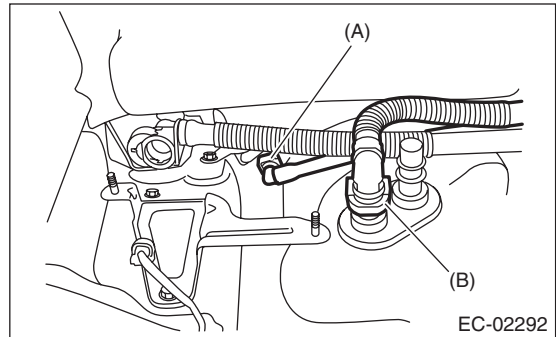
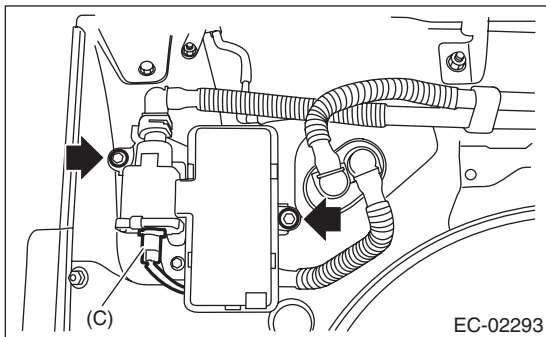
Disconnect the quick connector as shown in the figure.



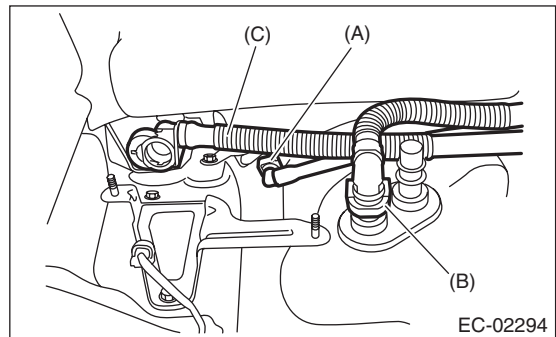
(a) Retainer



15) Disconnect connector (C) from the drain valve, and remove the drain valve.



17) Remove purge tube (A), vent tube (B), and drain tube A (C).



# Canister

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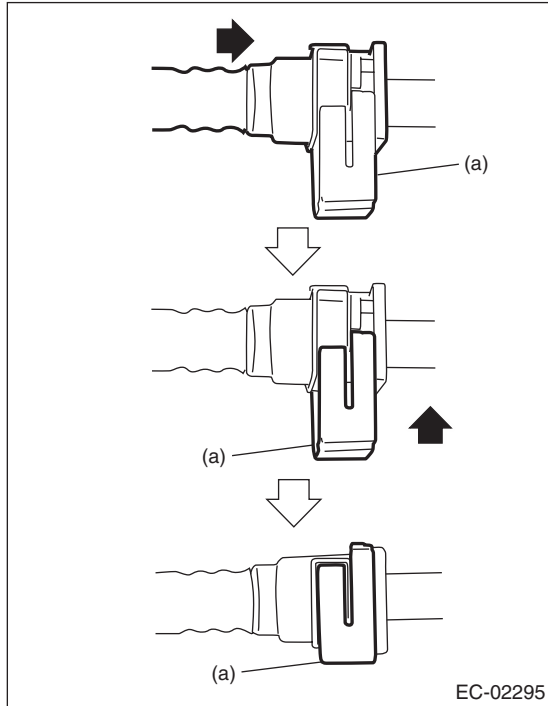
## B: INSTALLATION

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

- Connect the quick connector as shown in the figure.

### CAUTION:

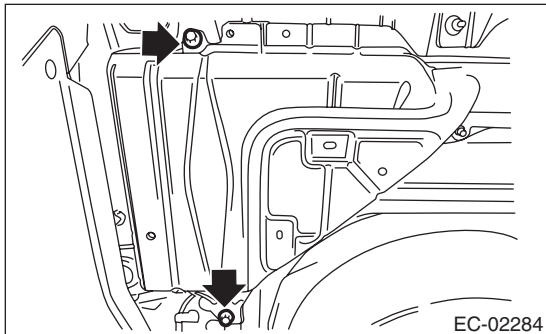
- Check that there is no damage or dust on the quick connector. If necessary, clean seal surface of pipe.
- When connecting the quick connector, insert the pipe all the way in securely, then operate the push lock.
- If it is not possible to perform the push lock operation of the retainer, recheck whether the pipe is securely inserted.
- Confirm that the quick connector is securely connected.



(a) Retainer

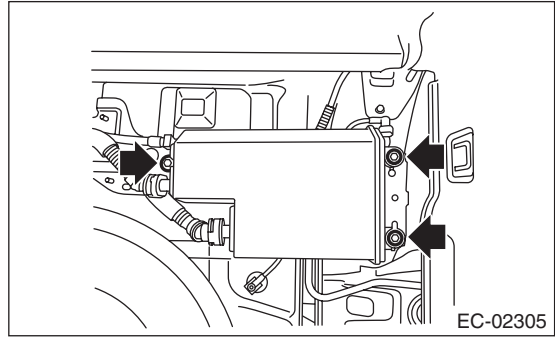
**Tightening torque:**

**18 N·m (1.8 kgf-m, 13.3 ft-lb)**



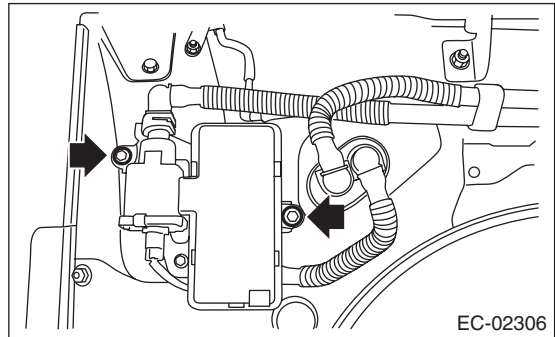
**Tightening torque:**

**8 N·m (0.8 kgf-m, 5.9 ft-lb)**



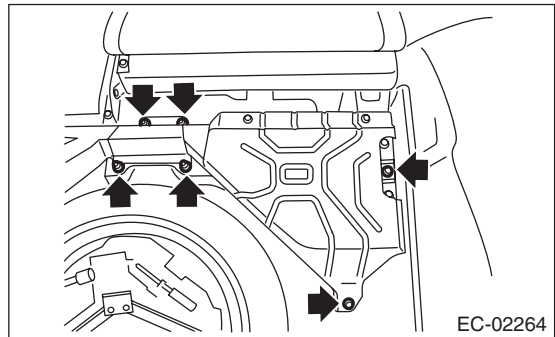
**Tightening torque:**

**7.5 N·m (0.76 kgf-m, 5.5 ft-lb)**



**Tightening torque:**

**18 N·m (1.8 kgf-m, 13.3 ft-lb)**



## C: INSPECTION

Make sure that the canister, drain valve and tube are not cracked or loose.



# Purge Control Solenoid Valve

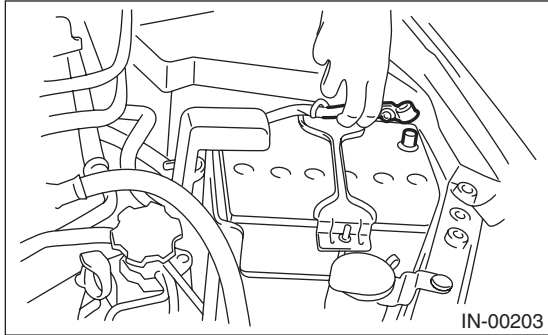
EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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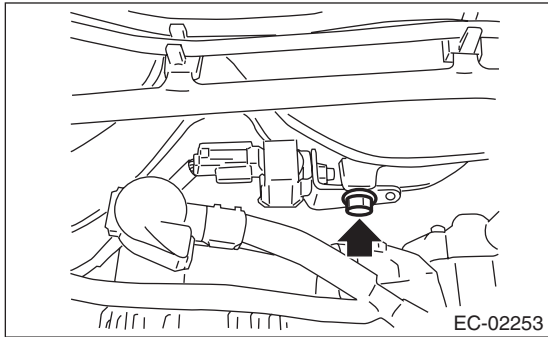
## 5. Purge Control Solenoid Valve

### A: REMOVAL

1) Disconnect the ground cable from battery.



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

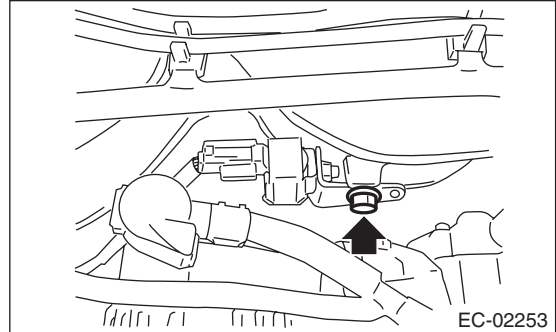


### B: INSTALLATION

Install in the reverse order of removal.

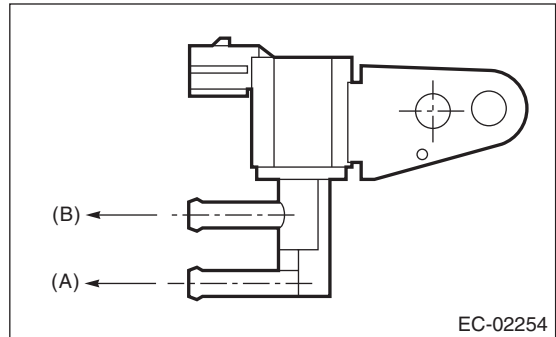
**Tightening torque (Purge control solenoid valve attachment bolt):**

**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 (intake manifold)
- (B) To fuel pipe (evaporation line)

### C: INSPECTION

Make sure the hoses are not cracked or loose.

## EGR Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### 6. EGR Valve

#### A: REMOVAL

For removal procedures, refer to "FU" section. <Ref. to FU(H4SO)-29, REMOVAL, EGR Valve.>

#### B: INSTALLATION

For installation procedures, refer to "FU" section. <Ref. to FU(H4SO)-29, INSTALLATION, EGR Valve.>

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# Fuel Level Sensor

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## 7. Fuel Level Sensor

### A: REMOVAL

For removal procedures, refer to "FU" section. <Ref. to FU(H4SO)-58, REMOVAL, Fuel Level Sensor.>

### B: INSTALLATION

For installation procedures, refer to "FU" section. <Ref. to FU(H4SO)-58, INSTALLATION, Fuel Level Sensor.>

# Fuel Temperature Sensor

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## 8. Fuel Temperature Sensor

### A: REMOVAL

The fuel temperature sensor is integrated into the fuel level sensor as one unit; therefore, refer to “Fuel Level Sensor” for removal procedures. <Ref. to FU(H4SO)-58, REMOVAL, Fuel Level Sensor.>

### B: INSTALLATION

The fuel temperature sensor and fuel level sensor are integrated into one unit; therefore, refer to “Fuel Level Sensor” for installation procedure. <Ref. to FU(H4SO)-58, INSTALLATION, Fuel Level Sensor.>

# Fuel Sub Level Sensor

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## 9. Fuel Sub Level Sensor

### A: REMOVAL

For removal procedures, refer to "FU" section.  
<Ref. to FU(H4SO)-59, REMOVAL, Fuel Sub Level Sensor.>

### B: INSTALLATION

For installation procedures, refer to "FU" section.  
<Ref. to FU(H4SO)-60, INSTALLATION, Fuel Sub Level Sensor.>

# Fuel Tank Pressure Sensor

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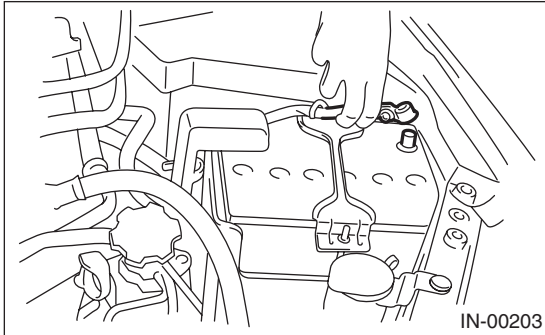
## 10. Fuel Tank Pressure Sensor

### A: REMOVAL

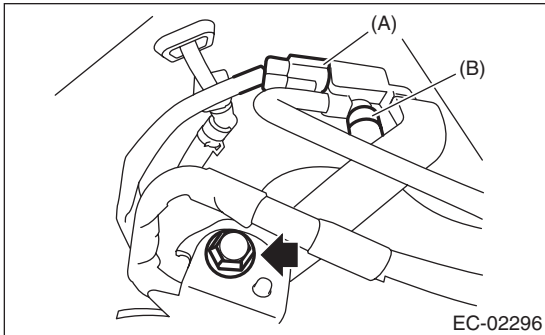
#### WARNING:

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

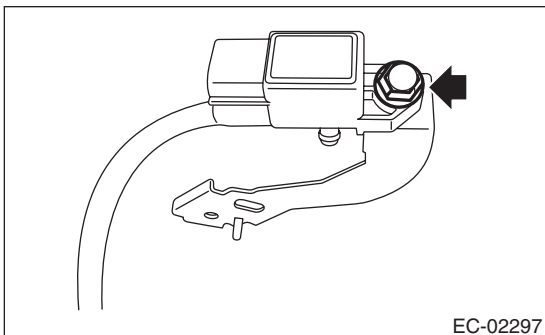
- 1) Set the vehicle on a lift.
- 2) Open the fuel filler flap lid, and remove the fuel filler cap.
- 3) Disconnect the ground cable from battery.



- 4) Lift up the vehicle.
- 5) Disconnect the connector from the fuel tank pressure sensor (A).
- 6) Disconnect the pressure hose from the fuel tank pressure sensor (B).
- 7) Remove the fuel tank pressure sensor along with the bracket.



- 8) Remove the fuel tank pressure sensor from the bracket cover.

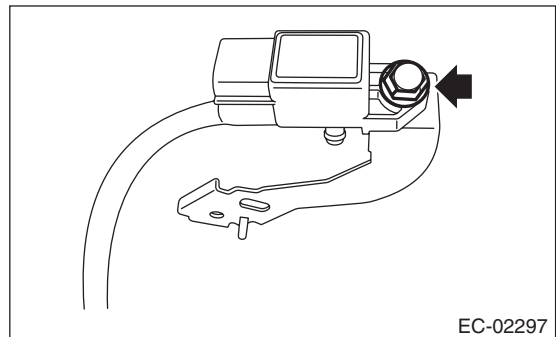
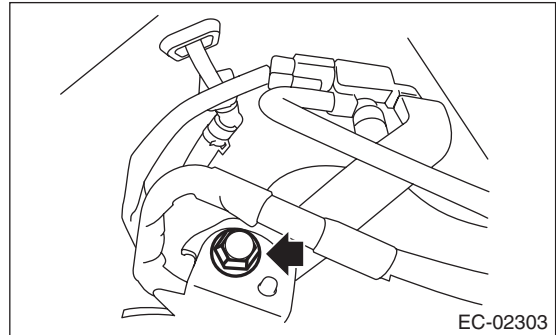


### B: INSTALLATION

Install in the reverse order of removal.

#### Tightening torque:

7.35 N·m (0.76 kgf-m, 5.5 ft-lb)



### C: INSPECTION

Make sure the hoses are not cracked or loose.

# Pressure Control Solenoid Valve

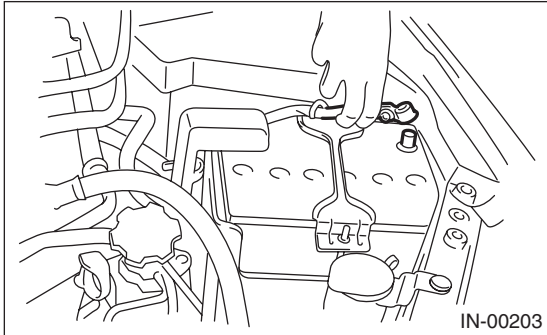
EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

Brought to you by *AutoTris Studios*  
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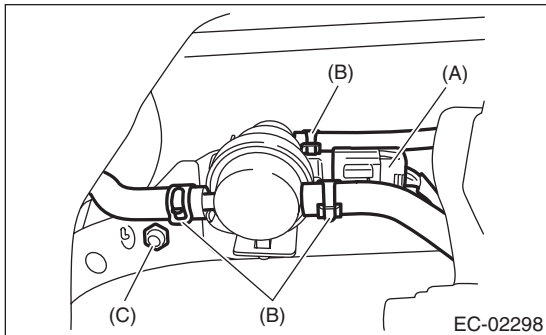
## 11. Pressure Control Solenoid Valve

### A: REMOVAL

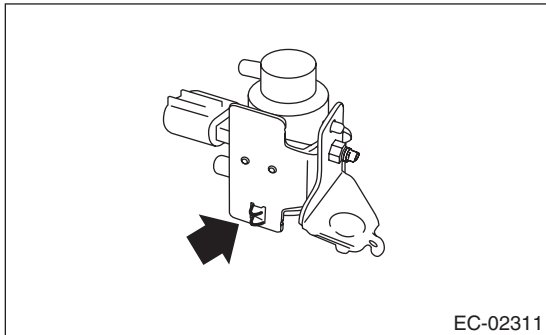
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.



- 3) Lift up the vehicle.
- 4) Disconnect connector (A) from the pressure control solenoid valve.
- 5) Disconnect the evaporation hose (B) from the pressure control solenoid valve.
- 6) Remove the bolts (C) which secure the bracket to the fuel tank.



- 7) Remove the pressure control solenoid valve and bracket as a unit.
- 8) Remove the pressure control solenoid valve from the bracket.



### B: INSTALLATION

Install in the reverse order of removal.

#### *Tightening torque:*

**7.35 N·m (0.76 kgf-m, 5.5 ft-lb)**

### C: INSPECTION

Make sure the hoses are not cracked or loose.

## Drain Filter

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### 12. Drain Filter

#### A: SPECIFICATION

The drain valve is a non-disassembled part, so do not remove the drain filter from drain valve.

Refer to "Canister" for removal and installation procedures. <Ref. to EC(H4SO)-5, REMOVAL, Canister.>

<Ref. to EC(H4SO)-8, INSTALLATION, Canister.>

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# Shut Valve

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## 13. Shut Valve

### A: REMOVAL

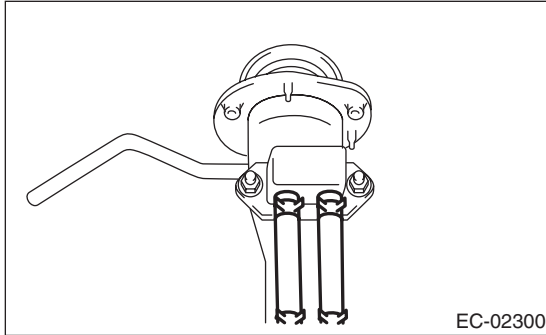
#### WARNING:

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

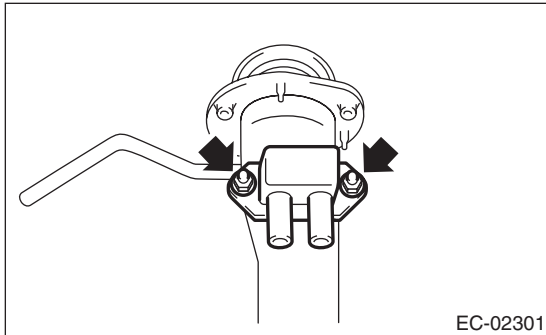
#### CAUTION:

Be careful not to spill fuel.

- 1) Remove the fuel filler pipe.  
<Ref. to FU(H4SO)-52, REMOVAL, Fuel Filler Pipe.>
- 2) Disconnect the evaporation hose from the shut valve.



- 3) Remove the shut valve from the fuel filler pipe.

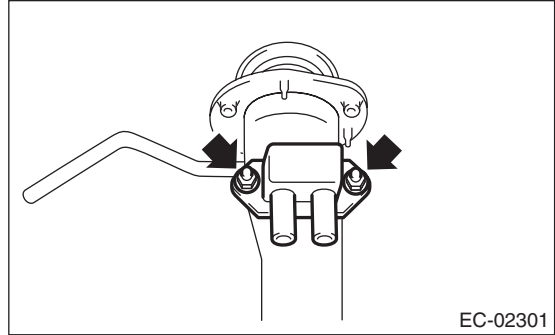


### B: INSTALLATION

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.

## Drain Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

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### 14.Drain Valve

#### A: REMOVAL

Refer to "Canister" for removal procedures. <Ref. to EC(H4SO)-5, REMOVAL, Canister.>

#### B: INSTALLATION

Refer to "Canister" for installation procedures. <Ref. to EC(H4SO)-8, INSTALLATION, Canister.>

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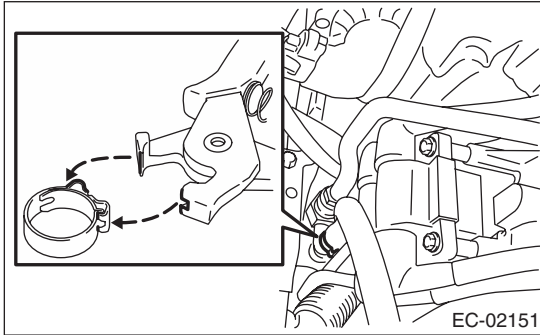
## 15.PCV Hose Assembly

### A: REMOVAL

#### CAUTION:

**Do not remove unless the PCV hose, diagnostics connector and PCV valve are damaged.**

- 1) Remove the air intake chamber. <Ref. to IN(H4SO)-7, REMOVAL, Air Intake Chamber.>
  - 2) Fit the depression in the ST with the protrusion on the clamp to unlock.
  - 3) Remove the PCV hose assembly.
- ST 18353AA000 CLAMP PLIERS



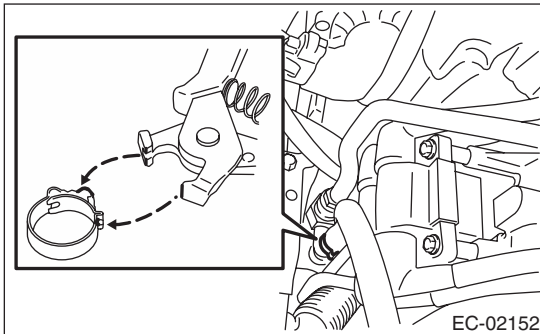
### B: INSTALLATION

#### NOTE:

Replace the clamp with a new part.

- 1) Install the PCV hose assembly, then lock by fitting the ST on the clamp protrusion.

ST 18353AA000 CLAMP PLIERS



- 2) Install the air intake chamber. <Ref. to IN(H4SO)-7, INSTALLATION, Air Intake Chamber.>

# PCV Hose Assembly

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EC(H4SO)-20