

ENGINE SECTION 1

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

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

FUEL INJECTION (FUEL SYSTEMS)	FU(H4SO 2.0)
EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)	EC(H4SO 2.0)
INTAKE (INDUCTION)	IN(H4SO 2.0)
MECHANICAL	ME(H4SO 2.0)
EXHAUST	EX(H4SO 2.0)
COOLING	CO(H4SO 2.0)
LUBRICATION	LU(H4SO 2.0)
SPEED CONTROL SYSTEMS	SP(H4SO 2.0)
IGNITION	IG(H4SO 2.0)
STARTING/CHARGING SYSTEMS	SC(H4SO 2.0)
ENGINE (DIAGNOSTICS)	EN(H4SO 2.0) (diag)
FUEL INJECTION (FUEL SYSTEMS)	FU(H4SO 2.5)
EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)	EC(H4SO 2.5)
INTAKE (INDUCTION)	IN(H4SO 2.5)
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ENGINE SECTION 1

LUBRICATION

LU(H4SO 2.5)

SPEED CONTROL SYSTEMS

SP(H4SO 2.5)

IGNITION

IG(H4SO 2.5)

STARTING/CHARGING SYSTEMS

SC(H4SO 2.5)

ENGINE (DIAGNOSTICS)

EN(H4SO 2.5)
(diag)

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

EC(H4SO 2.0)

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General Description

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.

Front Catalytic Converter

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

2. Front Catalytic Converter

A: REMOVAL

The front and rear catalytic converters are integrated into center exhaust pipe as a unit; therefore, refer to “Center Exhaust Pipe” for removal procedure. <Ref. to EX(H4SO 2.0)-10, REMOVAL, Center Exhaust Pipe.>

B: INSTALLATION

The front and rear catalytic converters are integrated into center exhaust pipe as a unit; therefore, refer to “Center Exhaust Pipe” for installation procedure. <Ref. to EX(H4SO 2.0)-10, 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.

Rear Catalytic Converter

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

3. Rear Catalytic Converter

A: REMOVAL

The front and rear catalytic converters are integrated into center exhaust pipe as a unit; therefore, refer to "Center Exhaust Pipe" for removal procedure. <Ref. to EX(H4SO 2.0)-10, REMOVAL, Center Exhaust Pipe.>

B: INSTALLATION

The front and rear catalytic converters are integrated into center exhaust pipe as a unit; therefore, refer to "Center Exhaust Pipe" for installation procedure. <Ref. to EX(H4SO 2.0)-10, 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)

4. EGR Valve

A: SPECIFICATION

Refer to "EGR Valve" for removal and installation.
<Ref. to FU(H4SO 2.0)-28, EGR Valve.> or <Ref.
to FU(H4SO 2.5)-30, EGR Valve.>

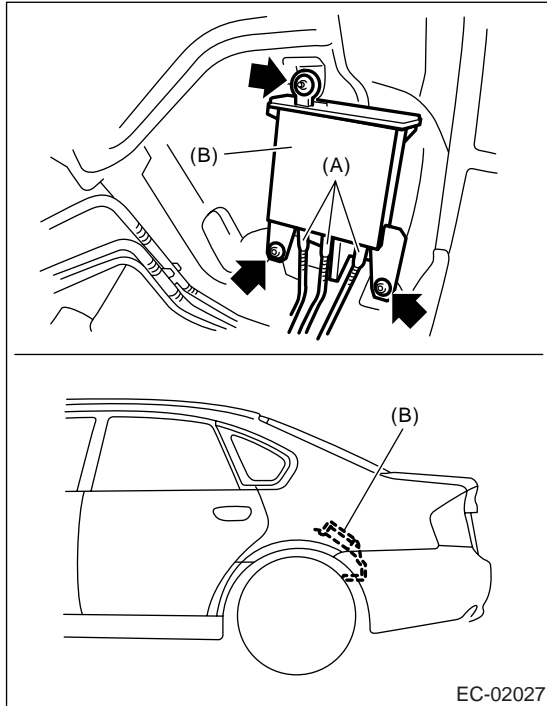
Canister

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

5. Canister

A: REMOVAL

- 1) Lift-up the vehicle.
- 2) Remove the rear wheel LH.
- 3) Remove the mud guard LH.
- 4) Remove the protector. (Sedan model)
- 5) Disconnect the quick connector (A).
- 6) Remove the canister (B) from body.



B: INSTALLATION

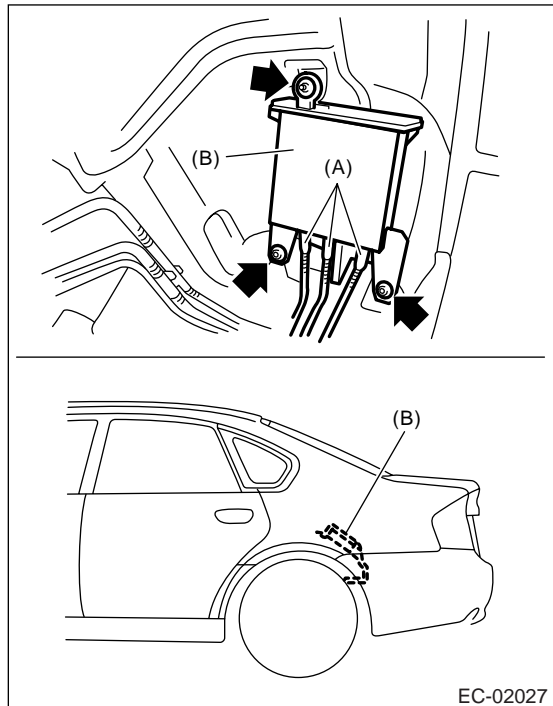
Install in the reverse order of removal.

NOTE:

Make sure there are no damage or dust on the connection of quick connector. If necessary, clean the seal surface of pipe.

Tightening torque:

8.3 N·m (0.85 kgf-m, 6.1 ft-lb)



C: INSPECTION

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

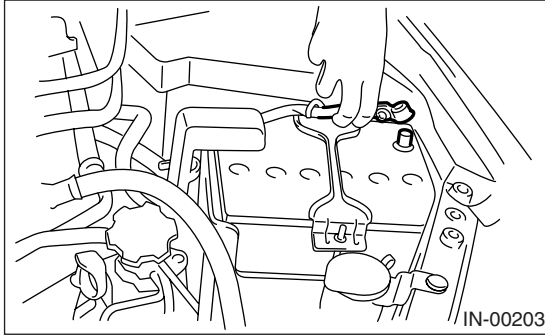
Purge Control Solenoid Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

6. Purge Control Solenoid Valve

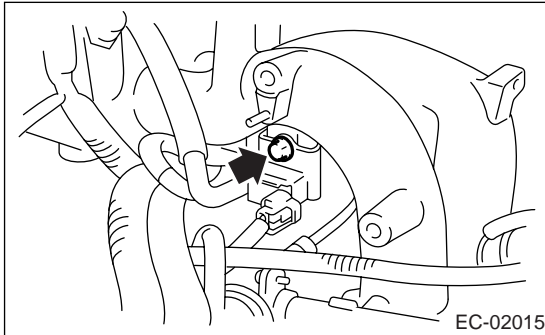
A: REMOVAL

1) Disconnect the ground cable from battery.

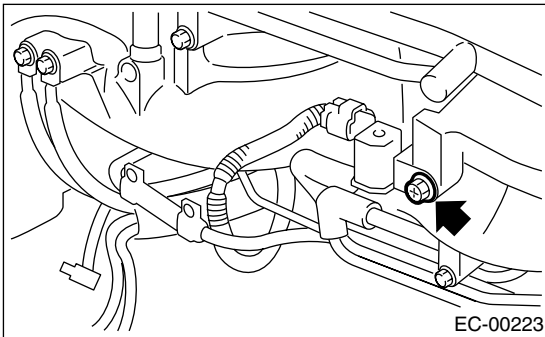


2) Disconnect the connector and hoses of purge control solenoid valve, and then remove the purge control solenoid valve.

- 2.0 L model



- 2.5 L model



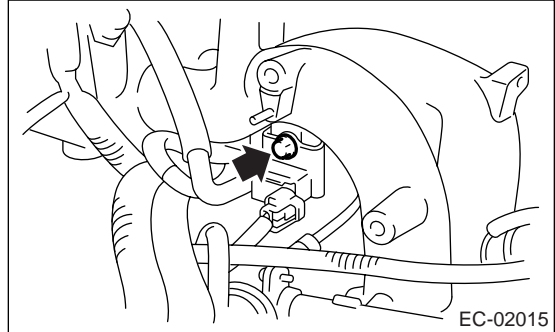
B: INSTALLATION

Install in the reverse order of removal.

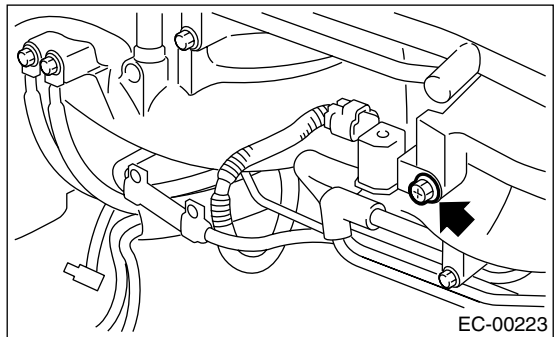
Tightening torque:

19 N·m (1.9 kgf-m, 14.0 ft-lb)

- 2.0 L model



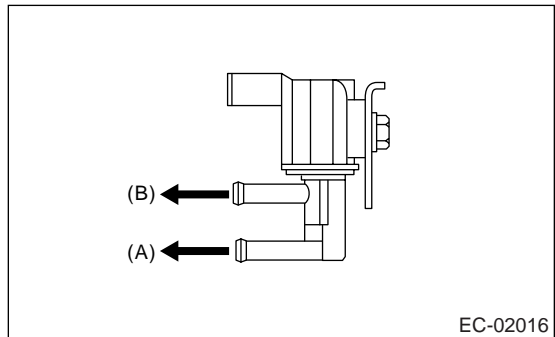
- 2.5 L model



NOTE:

Connect the evaporation hose as shown in the figure.

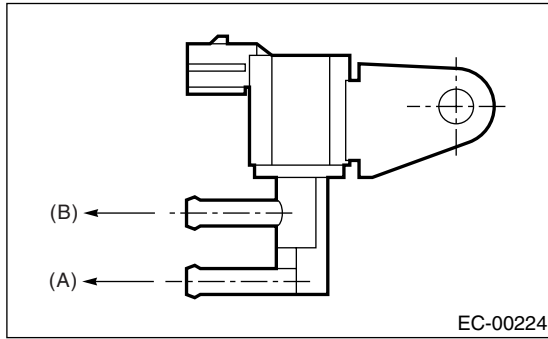
- 2.0 L model



Purge Control Solenoid Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

- 2.5 L model



(A) To fuel pipe (Evaporation line)

(B) To intake manifold

C: INSPECTION

Make sure the hoses are not cracked or loose.

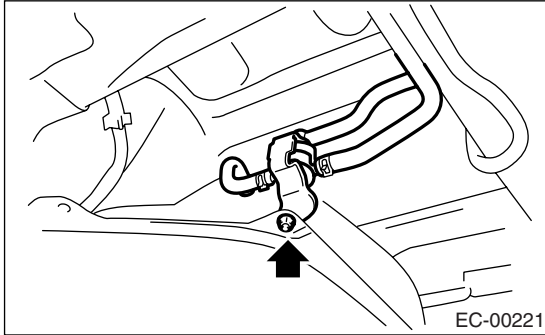
Two-way Valve

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

7. Two-way Valve

A: REMOVAL

- 1) Lift-up the vehicle.
- 2) Disconnect the evaporation hoses from two-way valve.
- 3) Remove the two-way valve as a unit with bracket from body.



- 4) Remove the two-way valve from bracket.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: INSPECTION

Make sure the hoses are not cracked or loose.

PCV Valve

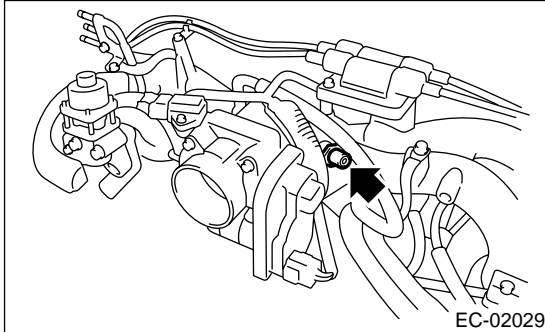
EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES)

8. PCV Valve

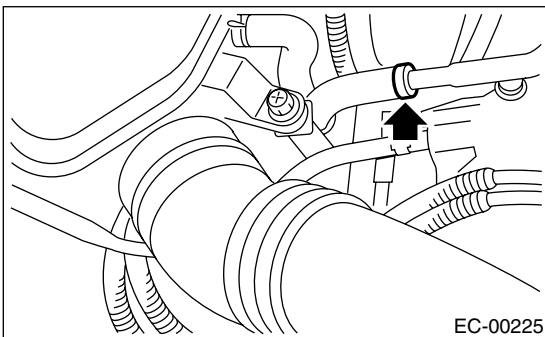
A: REMOVAL

Disconnect the PCV hose and remove the PCV valve.

- 2.0 L model



- 2.5 L model



B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Apply liquid gasket to the bolt threads of PCV valve. (2.0 L model)

Liquid gasket:

THREE BOND 1105 (Part No. 004403010)

Tightening torque:

23 N·m (2.3 kgf·m, 17 ft·lb)