

**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.

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

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)

# INTAKE (INDUCTION)

# *IN(H4SO 2.0)*

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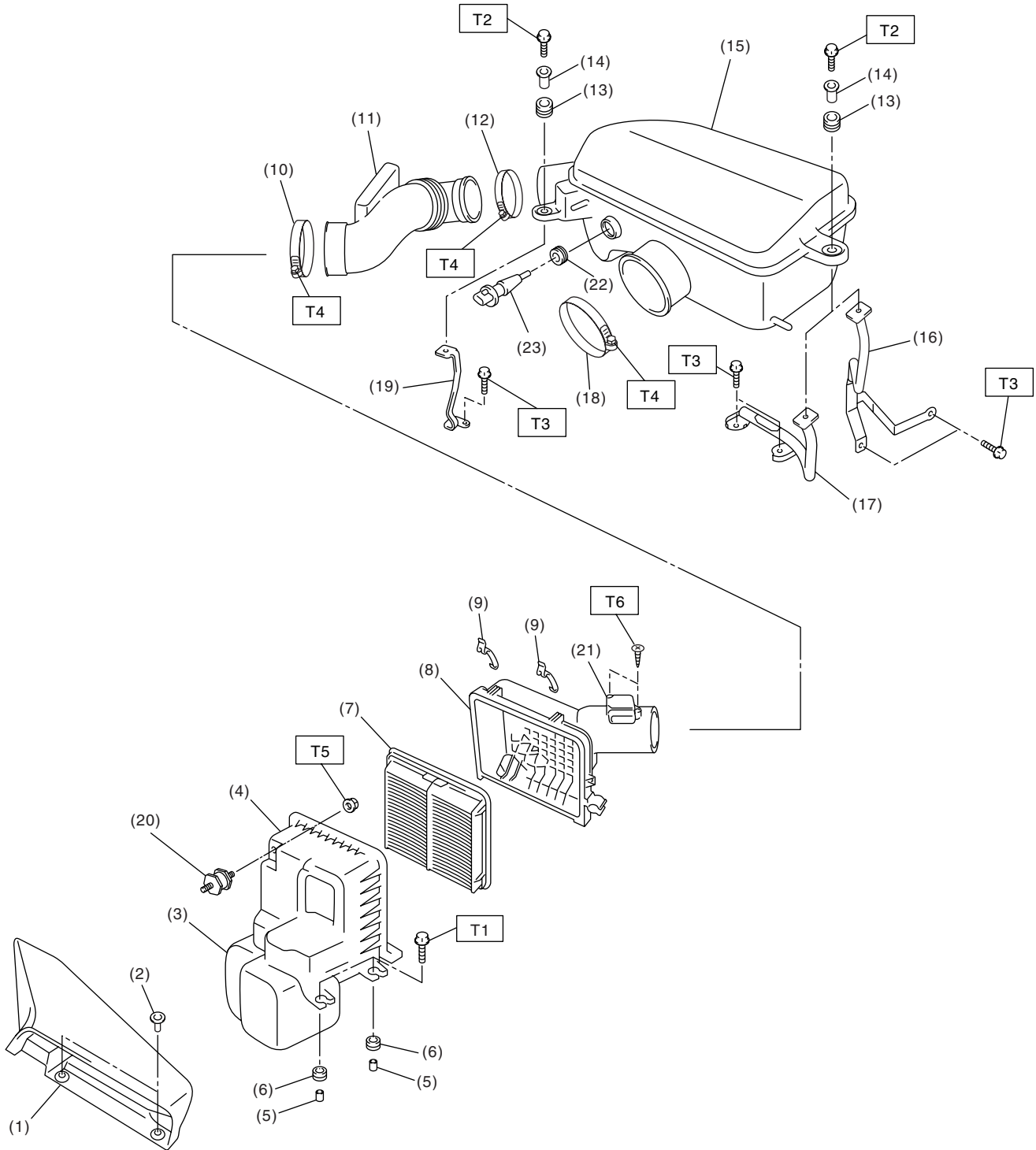
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# General Description

INTAKE (INDUCTION)

## 1. General Description

### A: COMPONENT



IN-02004

# General Description

INTAKE (INDUCTION)

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(1) Air intake duct	(14) Spacer	(23) Intake air temperature sensor (Except for 2.5 L EC, EK, K4 model)
(2) Clip	(15) Air intake chamber	
(3) Resonator chamber	(16) Stay LH (MT model)	
(4) Air cleaner case (front)	(17) Stay LH (AT model)	
(5) Spacer	(18) Clamp	<hr/> <b>Tightening torque: N·m (kgf-m, ft-lb)</b>
(6) Cushion	(19) Stay RH	<b>T1: 6.0 (0.6, 4.4)</b>
(7) Air cleaner element	(20) Cushion	<b>T2: 6.5 (0.66, 4.8)</b>
(8) Air cleaner case (rear)	(21) Mass air flow and intake air tem- perature sensor (2.5 L EC, EK, K4 model)	<b>T3: 16 (1.6, 11.6)</b>
(9) Clip		<b>T4: 3.0 (0.3, 2.2)</b>
(10) Clamp		<b>T5: 7.5 (0.76, 5.5)</b>
(11) Intake duct	(22) Bushing (Except for 2.5 L EC, EK, K4 model)	<b>T6: 1.0 (0.10, 0.7)</b>
(12) Clamp		<hr/>
(13) Cushion		

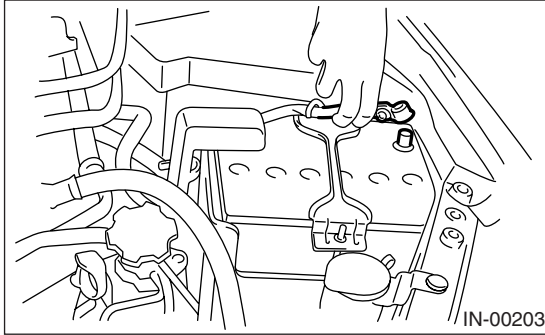
#### **B: CAUTION**

- 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.

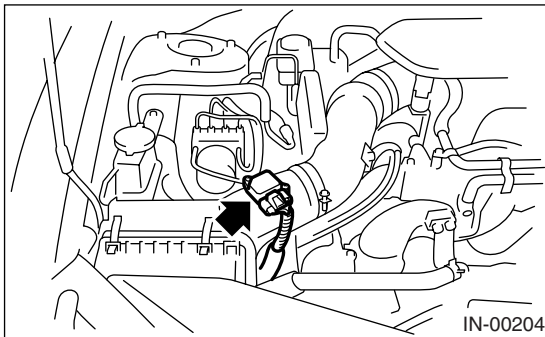
## 2. Air Cleaner Element

### A: REMOVAL

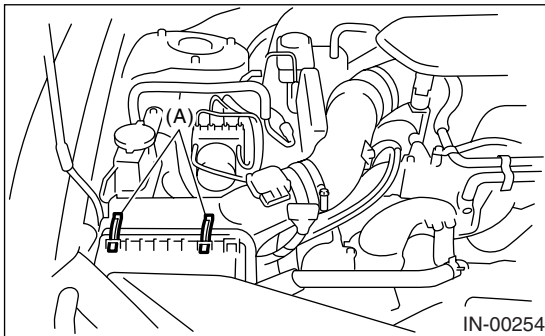
1) Disconnect the ground cable from battery.



2) Disconnect the connector from mass air flow and intake air temperature sensor. (2.5 L EC, EK, K4 model)



3) Remove the clip (A) from upper side of air cleaner case.



4) Pull the air cleaner case (rear) to rearward of the vehicle, and then remove the air cleaner element.

### NOTE:

Be careful that the power steering hose is secured to the under side of air cleaner case (rear).

### B: INSTALLATION

Install in the reverse order of removal.

### NOTE:

Fasten the air cleaner case (rear) with a clip after inserting the lower tab of the case.



### C: INSPECTION

Replace if excessively damaged or dirty.

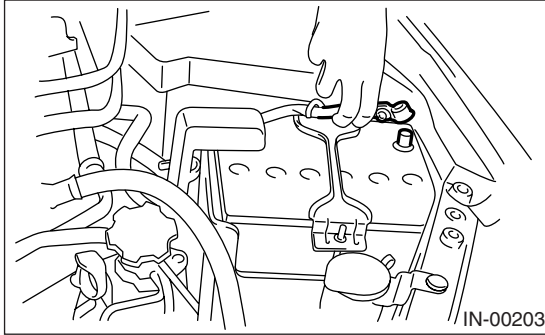
# Air Cleaner Case

INTAKE (INDUCTION)

## 3. Air Cleaner Case

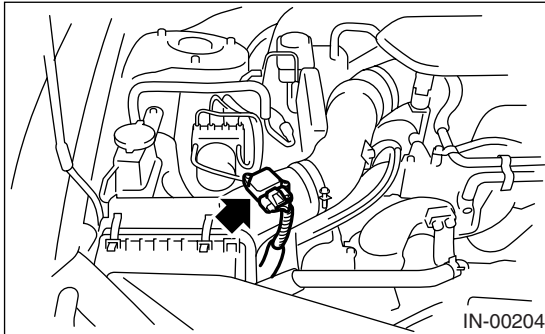
### A: REMOVAL

1) Disconnect the ground cable from battery.



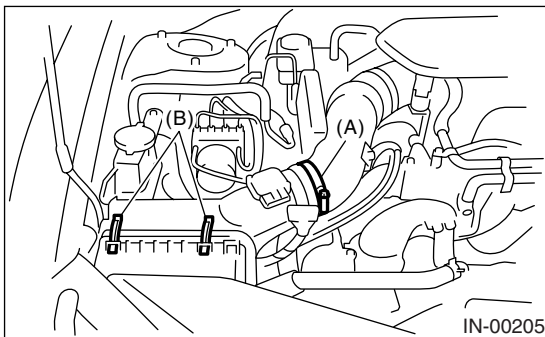
2) Remove the air intake duct. <Ref. to IN(H4SO 2.0)-9, REMOVAL, Air Intake Duct.>

3) Disconnect the connector from mass air flow and intake air temperature sensor. (2.5 L EC, EK, K4 model)

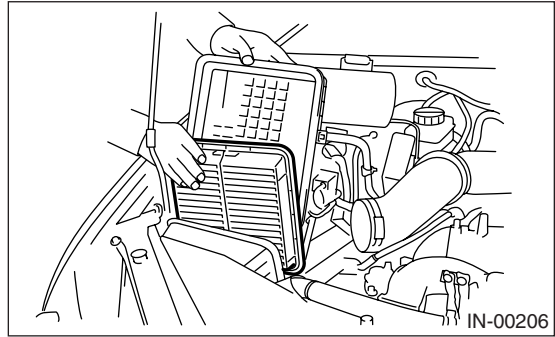


4) Loosen the clamp (A) which connects the air cleaner case to intake duct.

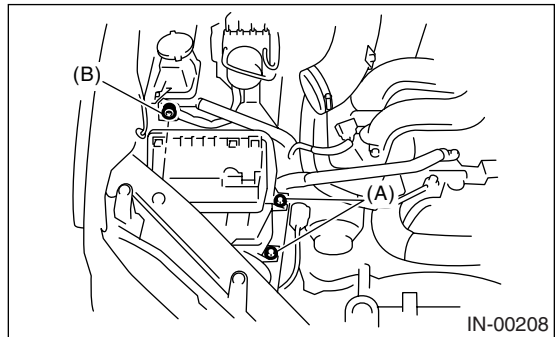
5) Remove the clip (B) from upper side of air cleaner case.



6) Remove the air cleaner case (rear) and air cleaner element.



7) Remove the bolt (A) and nut (B) which hold the air cleaner case on body.



8) Remove the air cleaner case (front).



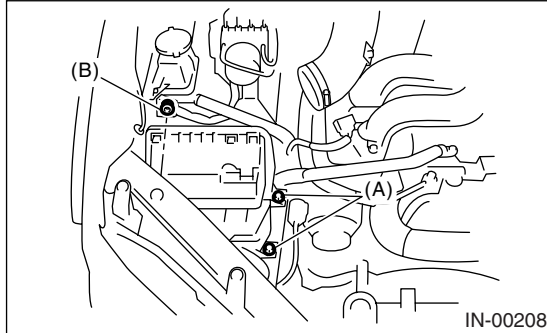
## B: INSTALLATION

Install in the reverse order of removal.

### *Tightening torque:*

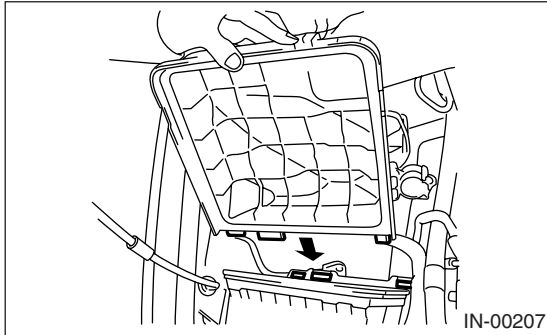
**Bolt (A): 6.0 N·m (0.6 kgf-m, 4.4 ft-lb)**

**Nut (B): 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)**



### NOTE:

Fasten with a clip after inserting the lower tab of the case.



## C: INSPECTION

Check for cracks or loose connection.

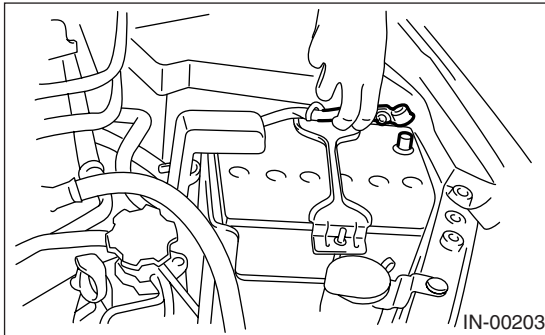
# Air Intake Chamber

INTAKE (INDUCTION)

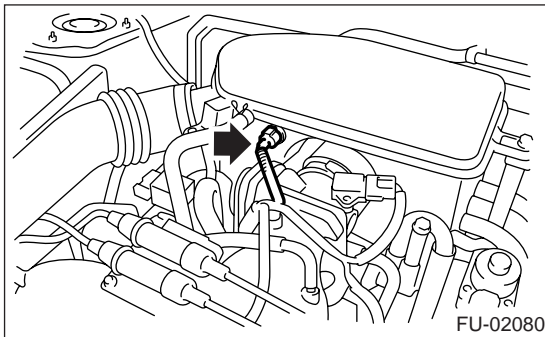
## 4. Air Intake Chamber

### A: REMOVAL

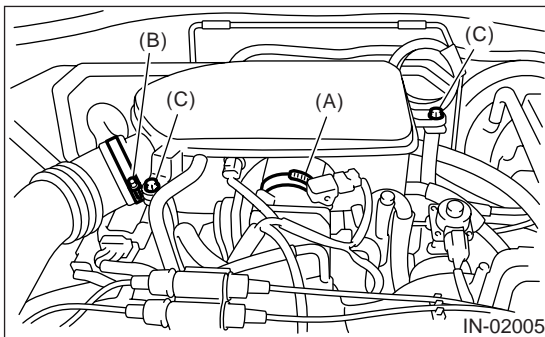
- 1) Disconnect the ground cable from battery.  
(Except for EC, EK, K4 model)



- 2) Disconnect the connector from intake air temperature sensor. (Except for EC, EK, K4 model)



- 3) Loosen the clamp (A) which connects the air intake chamber to throttle body.
- 4) Loosen the clamp (B) which connects the intake duct to air intake chamber.
- 5) Remove the bolt (C) which secures the air intake chamber to the stay.



- 6) Disconnect the three parts of blow-by hose, and remove the air intake chamber.

### B: INSTALLATION

Install in the reverse order of removal.

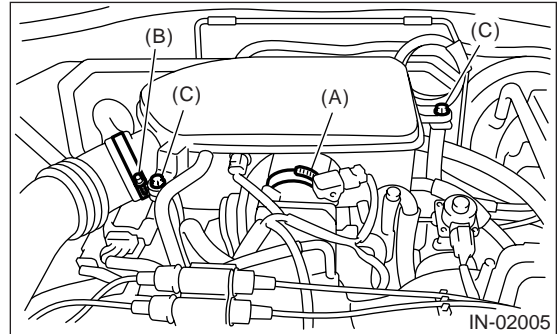
#### Tightening torque:

**Clamp (A), (B)**

**3.0 N·m (0.3 kgf-m, 2.2 ft-lb)**

**Bolt (C)**

**6.5 N·m (0.66 kgf-m, 4.8 ft-lb)**



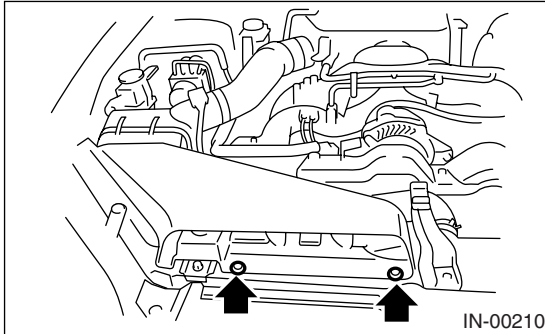
### C: INSPECTION

- 1) Check for cracks or loose connections.
- 2) Inspect that no foreign objects in the air intake chamber.

## 5. Air Intake Duct

### A: REMOVAL

- 1) Remove the clips which install the air intake duct on the front side of body.
- 2) Remove the air intake duct.



### B: INSTALLATION

Install in the reverse order of removal.

### C: INSPECTION

- 1) Check for cracks or loose connections.
- 2) Inspect that no foreign objects in the air intake duct.

### **6. Resonator Chamber**

#### **A: REMOVAL**

Refer to “Air Cleaner Case” for removal procedure because the resonator chamber forms a single unit with air cleaner case. <Ref. to IN(H4SO 2.0)-6, REMOVAL, Air Cleaner Case.>

#### **B: INSTALLATION**

Refer to “Air Cleaner Case” for installation procedure because the resonator chamber forms a single unit with air cleaner case. <Ref. to IN(H4SO 2.0)-7, INSTALLATION, Air Cleaner Case.>

#### **C: INSPECTION**

Check for cracks or loose connections.