

INTAKE (INDUCTION)

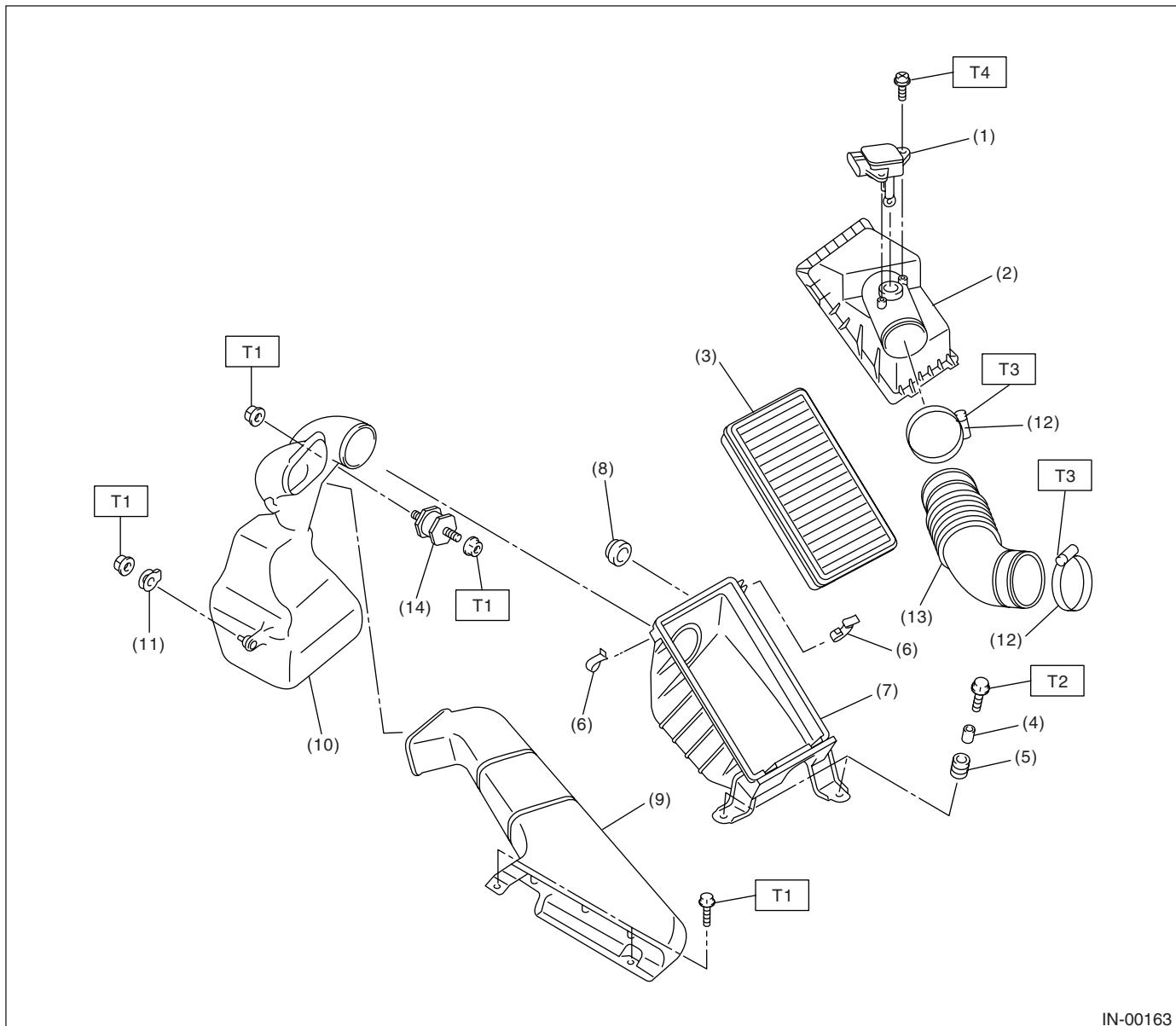
General Description

INTAKE (INDUCTION)

1. General Description

A: COMPONENT

1. AIR CLEANER



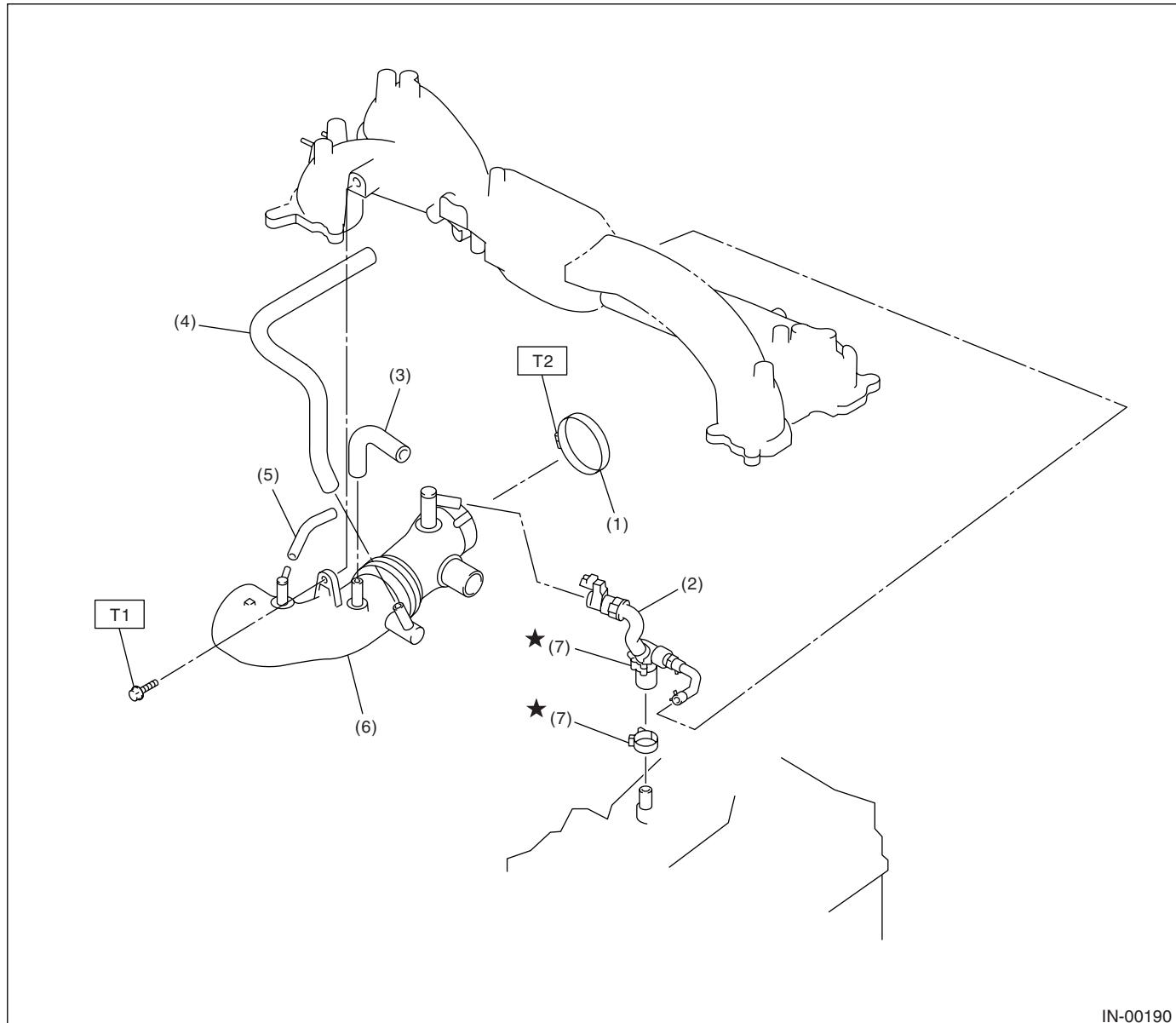
IN-00163

(1) Mass air flow and intake air temperature sensor	(7) Air cleaner lower case	(14) Cushion
(2) Air cleaner upper cover	(8) Cushion rubber	
(3) Air cleaner element	(9) Air intake duct	
(4) Spacer	(10) Resonator chamber ASSY	
(5) Bushing	(11) Cushion rubber	
(6) Clip	(12) Clamp	
	(13) Air intake boot	

Tightening torque: N·m (kgf-m, ft-lb)

T1: 7.5 (0.76, 5.5)
T2: 33 (3.4, 24.6)
T3: 2.5 (0.25, 1.8)
T4: 1.7 (0.17, 1.2)

2. INTAKE DUCT



- (1) Clamp
- (2) PCV hose ASSY
- (3) Air by-pass hose A
- (4) Air by-pass hose B

- (5) Air by-pass hose C
- (6) Intake duct
- (7) Clamp

Tightening torque: N·m (kgf·m, ft-lb)

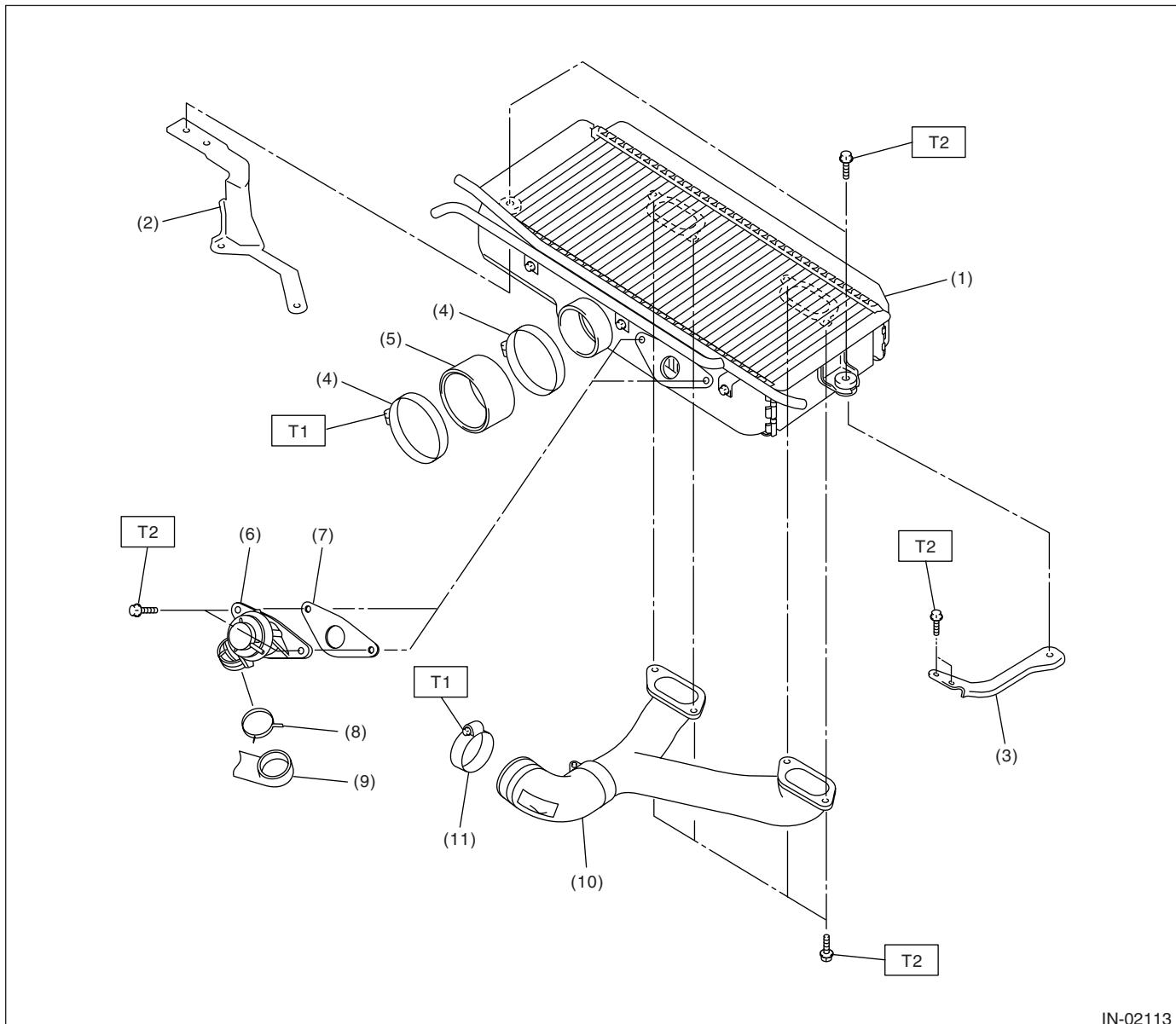
T1: 19 (1.9, 13.7)

T2: 3 (0.3, 2.2)

General Description

INTAKE (INDUCTION)

3. INTERCOOLER



IN-02113

- (1) Intercooler
- (2) Intercooler bracket RH
- (3) Intercooler bracket LH
- (4) Clamp
- (5) Air intake duct

- (6) Air by-pass valve
- (7) Gasket
- (8) Clamp
- (9) Air by-pass hose A
- (10) Intercooler duct

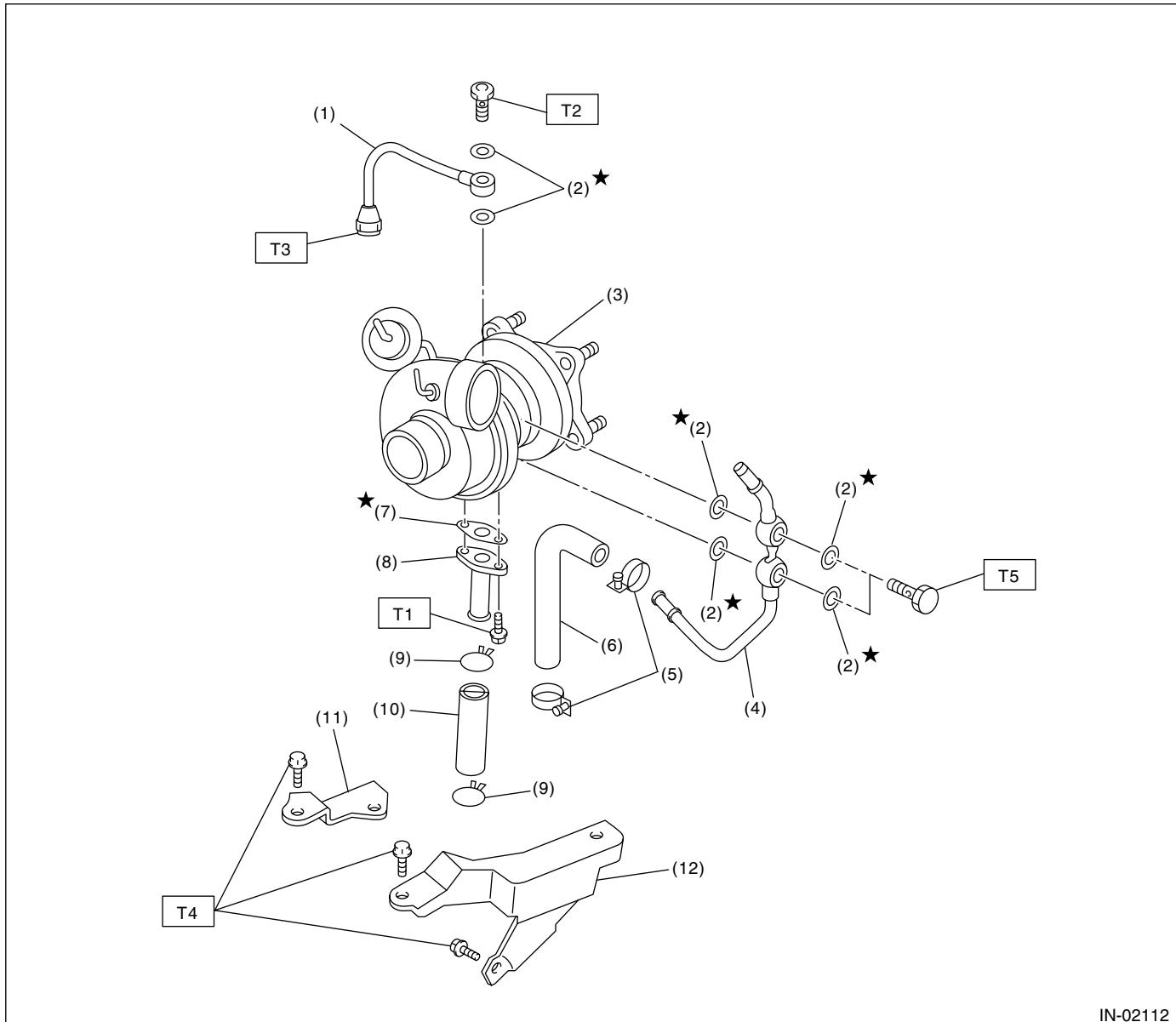
- (11) Clamp

Tightening torque: N·m (kgf-m, ft-lb)

T1: 3 (0.3, 2.2)

T2: 16 (1.6, 11.8)

4. TURBOCHARGER



IN-02112

(1) Oil inlet pipe	(7) Gasket
(2) Metal gasket	(8) Oil outlet pipe
(3) Turbocharger	(9) Clip
(4) Water pipe	(10) Oil outlet hose
(5) Clamp	(11) Turbocharger bracket RH
(6) Engine coolant hose	(12) Turbocharger bracket LH

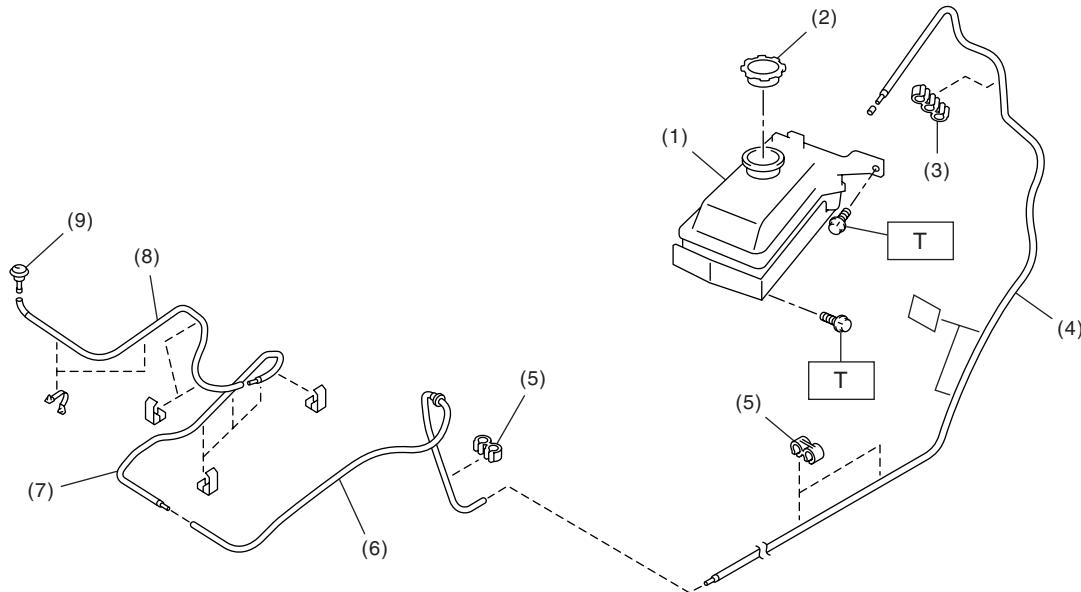
Tightening torque: N·m (kgf·m, ft·lb)

T1: 4.4 (0.45, 3.3)
T2: 16±1.5 (1.6±0.15, 11.8±1.1)
T3: 20±2.0 (2.0±0.2, 14.8±1.5)
T4: 33 (3.4, 24.6)
T5: 35 (3.6, 25.8)

General Description

INTAKE (INDUCTION)

5. INTERCOOLER WATER SPRAY



IN-00193

(1) Water tank ASSY	(5) Clamp	(9) Nozzle
(2) Water tank cap	(6) Center hose	
(3) Clamp	(7) Front hose	
(4) Rear hose	(8) Intercooler hose	

Tightening torque: N·m (kgf-m, ft-lb)

T: 6.0 (0.61, 4.4)

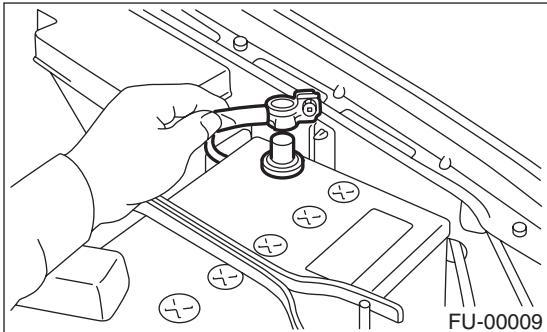
B: CAUTION

- 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 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 rigid racks at the specified points.
- Before disconnecting electrical connectors of sensor or units, be sure to disconnect the ground cable from battery.

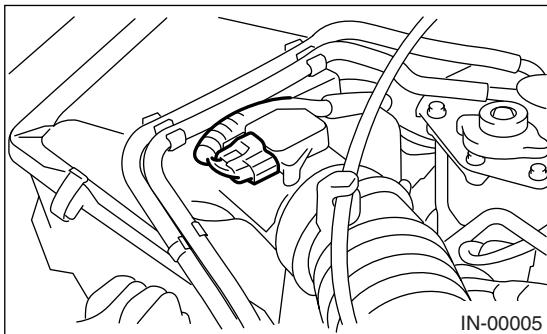
2. Air Cleaner Case

A: REMOVAL

- 1) Disconnect the ground cable from battery.

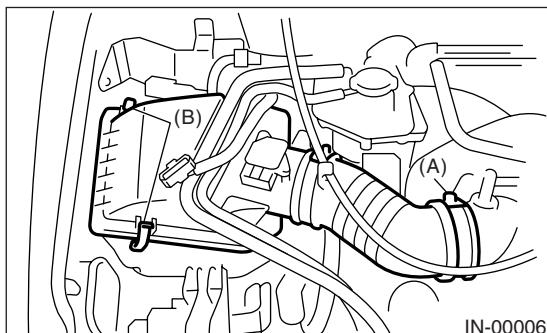


- 2) Disconnect the connector from mass air flow and intake air temperature sensor.



- 3) Loosen the clamp (A) which connects the air intake boot and intake duct.

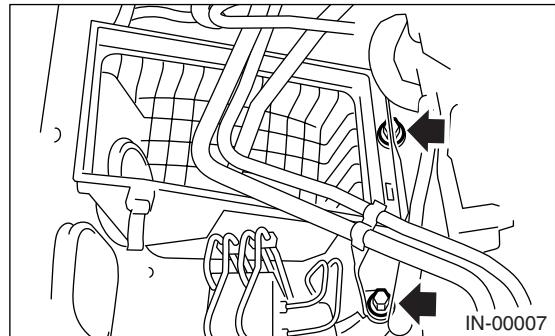
- 4) Remove the clip (B) from air cleaner upper cover.



- 5) Remove the air cleaner upper cover.

- 6) Remove the air cleaner element.

- 7) Remove the air cleaner lower case.

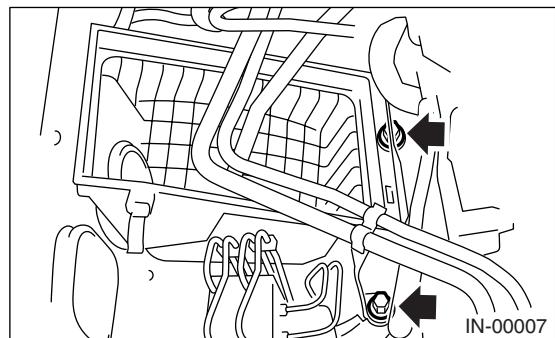


B: INSTALLATION

Install in the reverse order of removal.

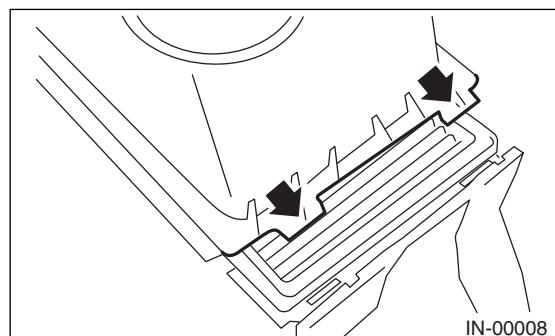
Tightening torque:

33 N·m (3.4 kgf·m, 24.6 ft·lb)



NOTE:

Before installing the air cleaner upper cover, align the holes with protruding portions of air cleaner lower case, then secure the upper cover to the lower case.



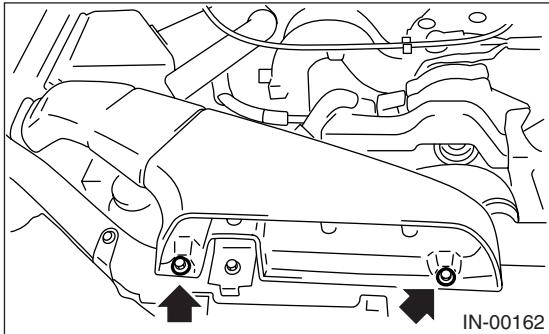
C: INSPECTION

Replace it if excessively damaged or dirty.

3. Air Intake Duct

A: REMOVAL

Remove the bolts which install the air intake duct on front side of body.

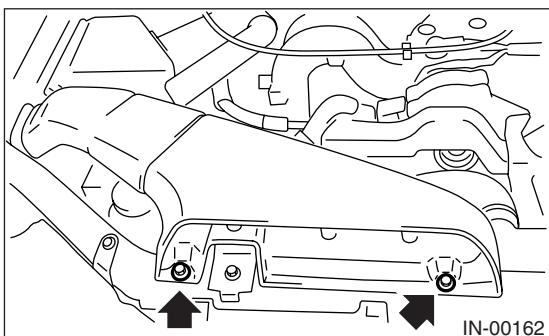


B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

7.5 N·m (0.76 kgf·m, 5.5 ft-lb)



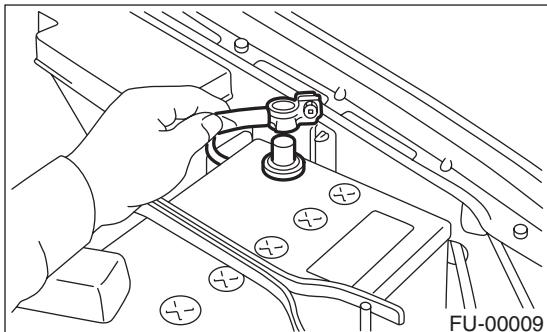
C: INSPECTION

- 1) Inspect for cracks and loose connections.
- 2) Inspect that no foreign objects are mixed in air intake duct.

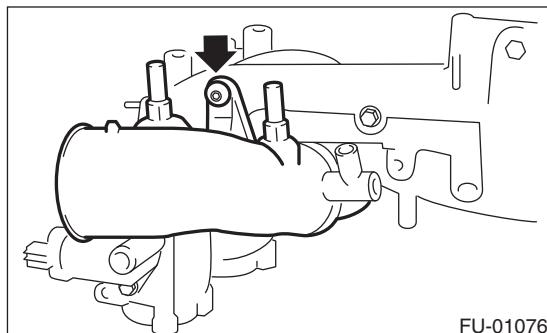
4. Intake Duct

A: REMOVAL

- 1) Disconnect the ground cable from battery.



- 2) Remove the intake manifold. <Ref. to FU(STi)-13, REMOVAL, Intake Manifold.>
- 3) Remove the sensor, engine harness and fuel pipe attached to intake manifold. <Ref. to FU(STi)-18, DISASSEMBLY, Intake Manifold.>
- 4) Remove the intake duct from intake manifold.

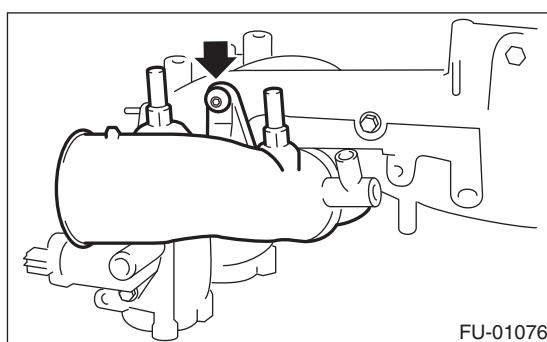


B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

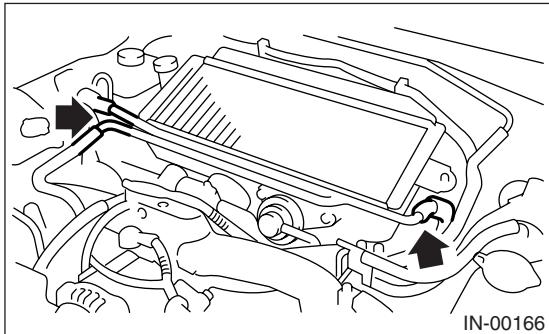
19 N·m (1.9 kgf·m, 13.7 ft-lb)



5. Intercooler

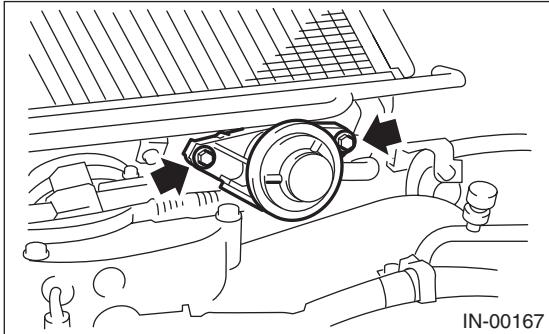
A: REMOVAL

1) Disconnect the air by-pass hoses from intercooler.



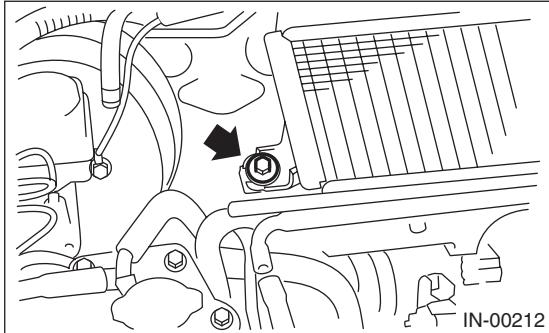
IN-00166

2) Remove the air by-pass valve from intercooler.

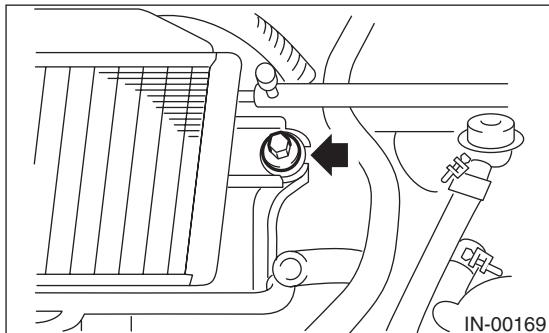


IN-00167

3) Remove the bolts which secure the intercooler to bracket.



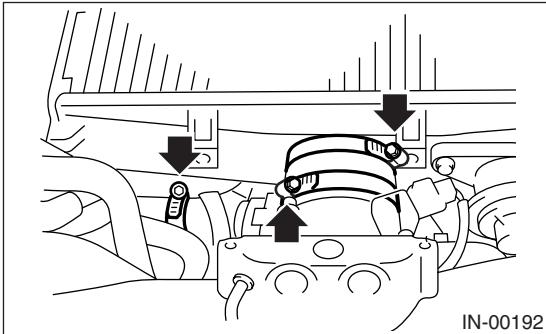
IN-00212



IN-00169

4) Remove the intercooler air duct from turbocharger.

5) Remove the intercooler from throttle body.



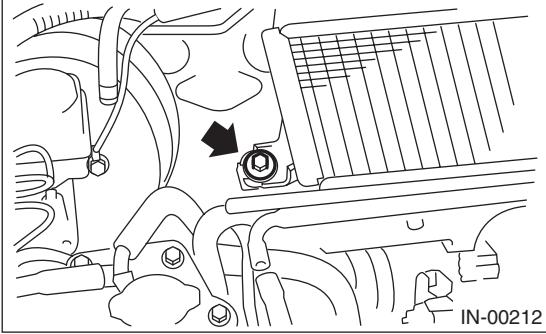
IN-00192

B: INSTALLATION

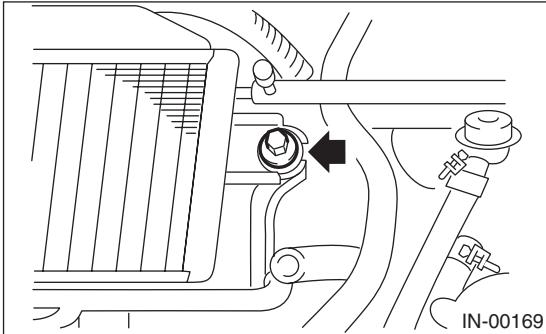
Install in the reverse order of removal.

Tightening torque:

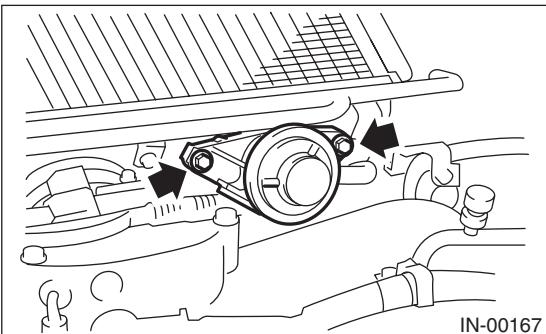
16 N·m (1.6 kgf·m, 11.6 ft-lb)



IN-00212



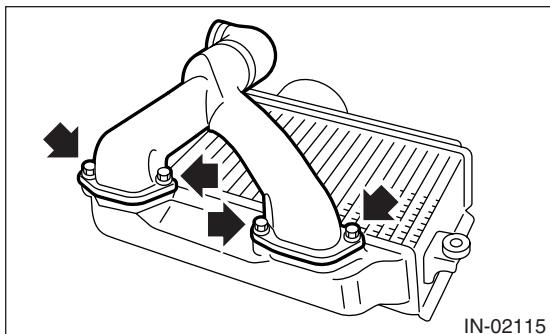
IN-00169



IN-00167

C: DISASSEMBLY

Remove the intercooler ducts from intercooler.

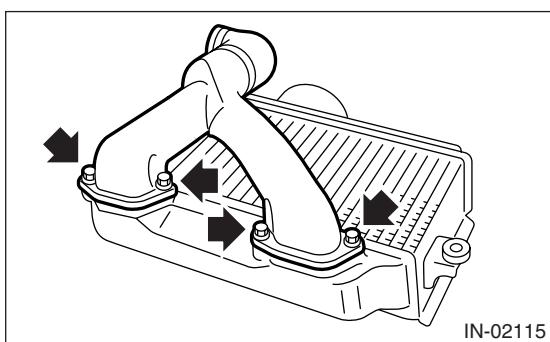


D: ASSEMBLY

Assemble in the reverse order of disassembly.

Tightening torque:

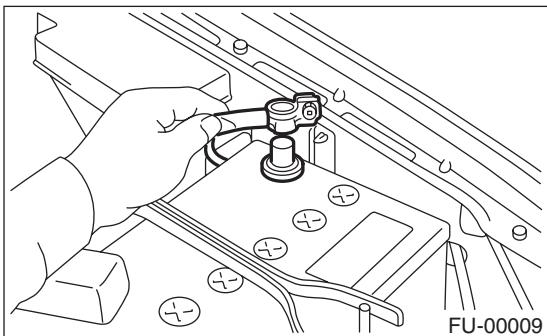
16 N·m (1.6 kgf·m, 11.6 ft-lb)



6. Turbocharger

A: REMOVAL

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

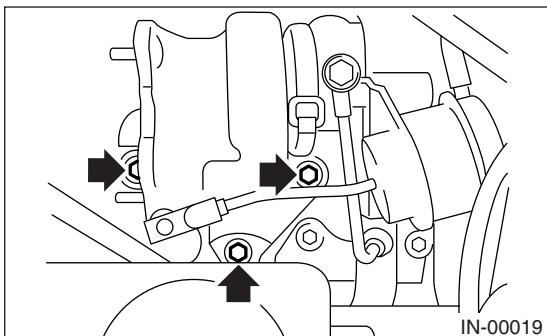


FU-00009

3) Remove the center exhaust pipe. <Ref. to EX(H4DOTC)-8, REMOVAL, Center Exhaust Pipe.>

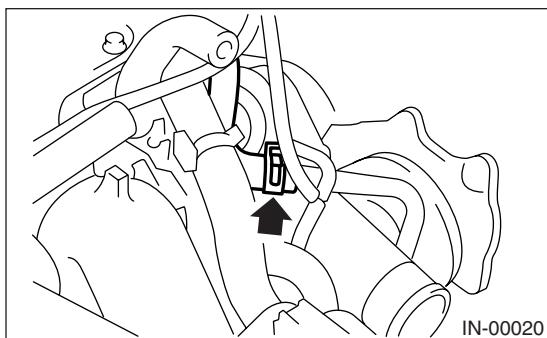
4) Lower the vehicle.

5) Disconnect the turbocharger joint pipe from turbocharger.



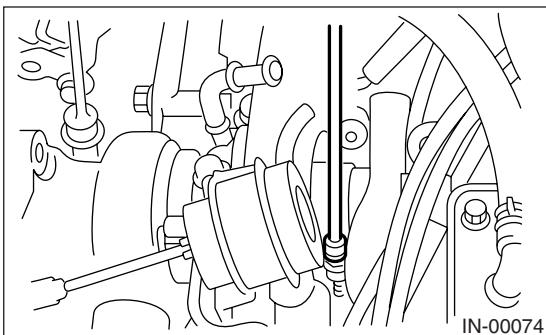
IN-00019

6) Disconnect the engine coolant hose which is connected to coolant filler tank.



IN-00020

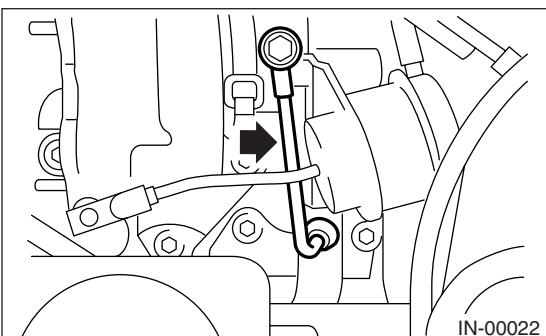
- 7) Loosen the clamp which secures the turbocharger to intake duct.



IN-00074

- 8) Loosen the flare joint of oil inlet pipe, and disconnect the flare joint.

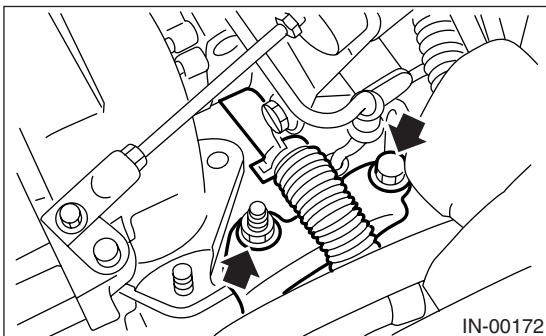
- 9) Remove the oil inlet pipe from turbocharger.



IN-00022

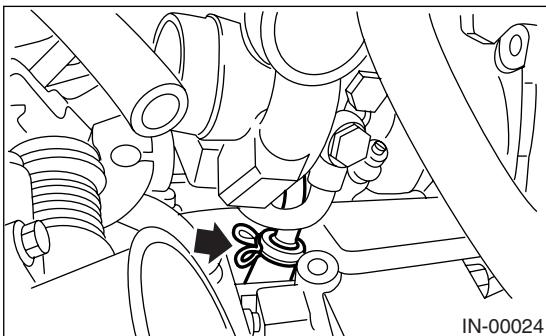
- 10) Disconnect the engine coolant hose.

- 11) Remove the turbocharger bracket.



IN-00172

- 12) Disconnect the oil outlet hose from pipe.

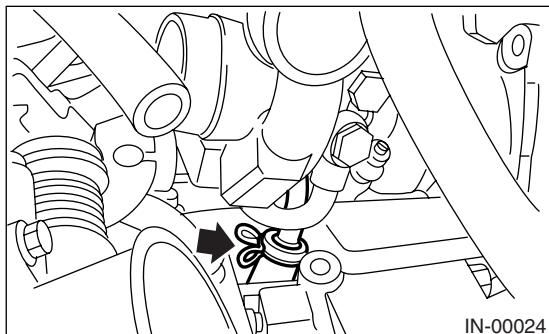


IN-00024

- 13) Take out the turbocharger from engine compartment.

B: INSTALLATION

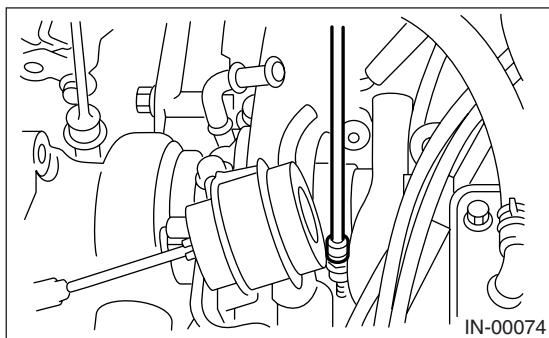
1) Connect the oil outlet hose to outlet pipe.



2) Install the turbocharger to intake duct.

Tightening torque:

$3 \text{ N}\cdot\text{m} (0.3 \text{ kgf}\cdot\text{m}, 2.2 \text{ ft-lb})$



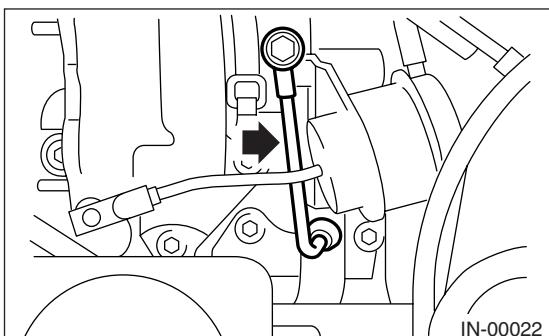
3) Install the oil inlet pipe to turbocharger, and connect the flare joint.

Tightening torque:**Union bolt**

$16 \pm 1.5 \text{ N}\cdot\text{m} (1.6 \pm 0.15 \text{ kgf}\cdot\text{m}, 11.8 \pm 1.1 \text{ ft-lb})$

Flare joint

$20 \pm 2.0 \text{ N}\cdot\text{m} (2.0 \pm 0.2 \text{ kgf}\cdot\text{m}, 14.8 \pm 1.5 \text{ ft-lb})$



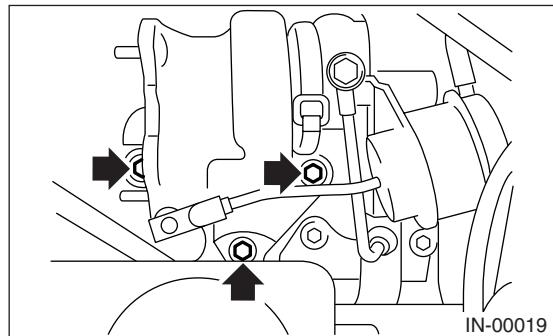
4) Install the joint pipe to turbocharger.

NOTE:

Replace the gasket with a new one.

Tightening torque:

$35 \text{ N}\cdot\text{m} (3.6 \text{ kgf}\cdot\text{m}, 25.8 \text{ ft-lb})$

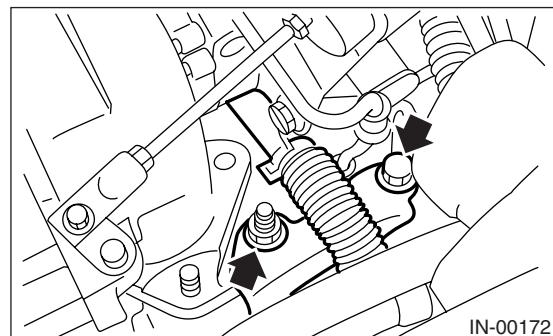


5) Connect the engine coolant hose.

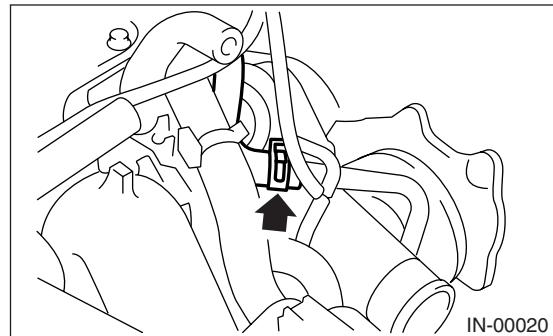
6) Install the turbocharger bracket.

Tightening torque:

$33 \text{ N}\cdot\text{m} (3.4 \text{ kgf}\cdot\text{m}, 24.6 \text{ ft-lb})$



7) Connect the engine coolant hose which is connected to coolant filler tank.



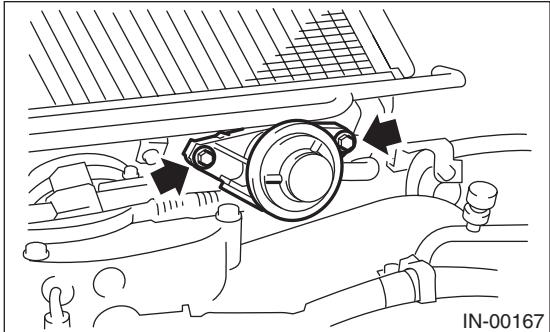
8) Lift-up the vehicle.

9) Install the center exhaust pipe. <Ref. to EX(H4DOTC)-9, INSTALLATION, Center Exhaust Pipe.>

7. Air By-pass Valve

A: REMOVAL

- 1) Remove the air by-pass valve from intercooler.



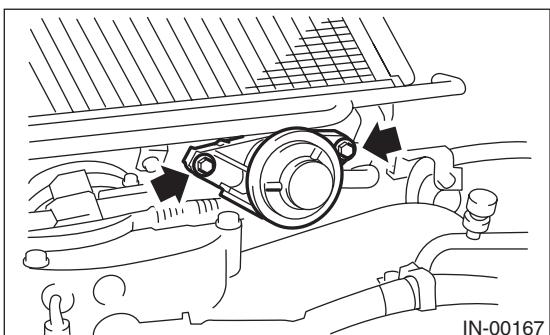
- 2) Disconnect the air by-pass hoses from air by-pass valve.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

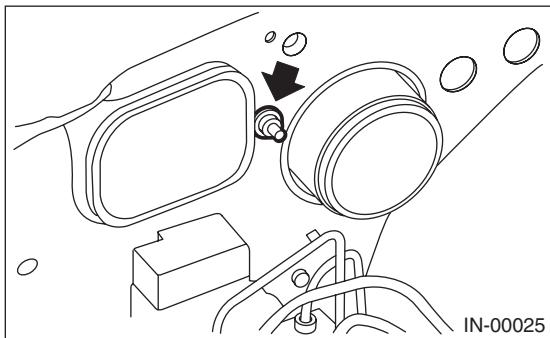
16 N·m (1.6 kgf·m, 11.6 ft-lb)



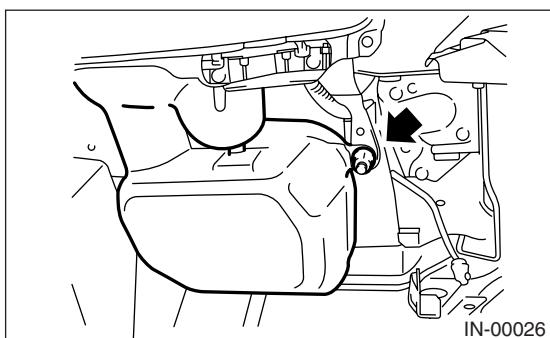
8. Resonator Chamber

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Remove the air intake duct. <Ref. to IN(STi)-8, REMOVAL, Air Intake Duct.>
- 3) Remove the air cleaner lower case. <Ref. to IN(STi)-7, REMOVAL, Air Cleaner Case.>
- 4) Remove the resonator chamber mounting bolt on right side of engine compartment.



- 5) Lift-up the vehicle, and then remove the front wheel RH.
- 6) Remove the front mud guard RH.
- 7) Remove the resonator chamber from the inside front fender.

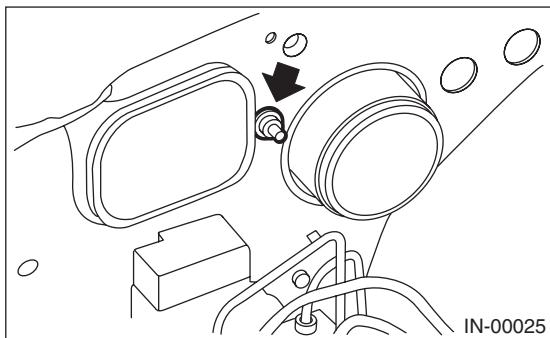
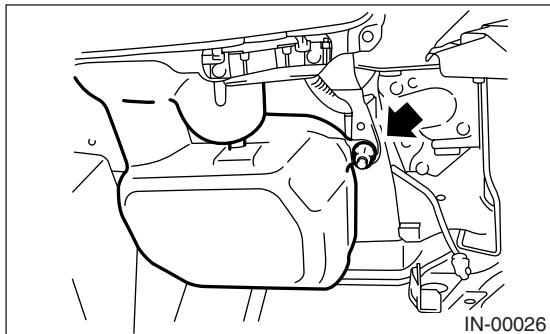


B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

7.5 N·m (0.76 kgf·m, 5.5 ft-lb)



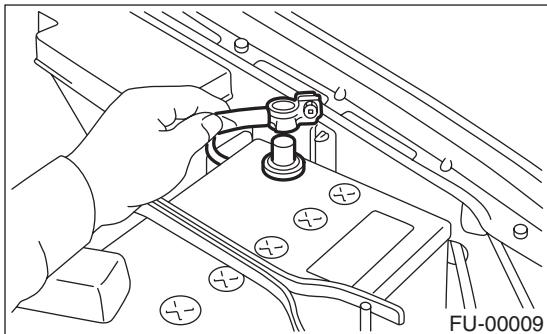
C: INSPECTION

- 1) Inspect for cracks and loose connections.
- 2) Inspect that no foreign objects are mixed in resonator chamber.

9. Intercooler Water Spray Tank

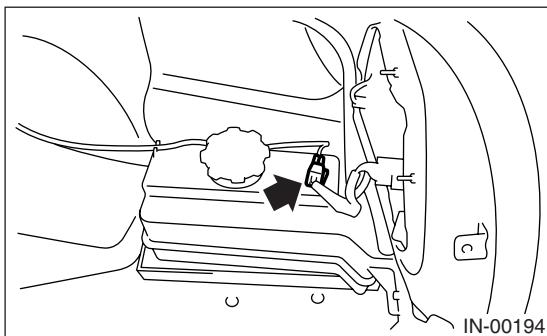
A: REMOVAL

- 1) Disconnect the ground cable from battery.

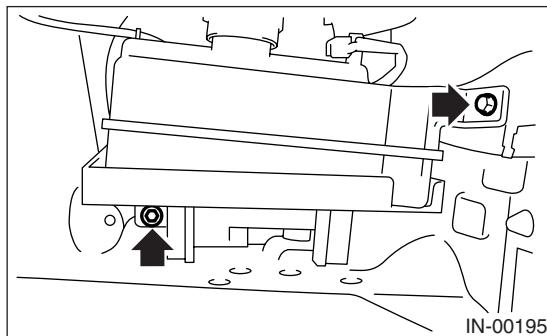


- 2) Remove the trunk room trim. <Ref. to EI-59, REMOVAL, Trunk Room Trim.>

- 3) Disconnect the water tank connector.



- 4) Remove the two water tank installation bolts.



- 5) Remove the hose between body and water tank, then remove the water tank.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

$6.0 \text{ N}\cdot\text{m}$ (0.61 kgf-m, 4.4 ft-lb)

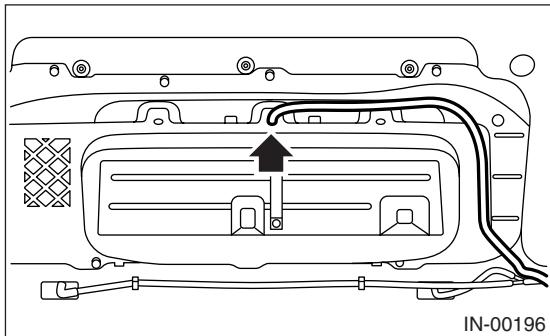
C: INSPECTION

- 1) Make sure the hose is not deformed, damaged, cracked or clogged.
- 2) Make sure the water tank is not damaged or cracked.

10. Intercooler Water Spray Nozzle

A: REMOVAL

- 1) Open the front hood.
- 2) Disconnect the connecting part of hose.
- 3) Push the clip of nozzle upward with the clip pressed by fingers from inside of front hood.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Make sure the hose and nozzle are not deformed, damaged, cracked or clogged.