

EXHAUST

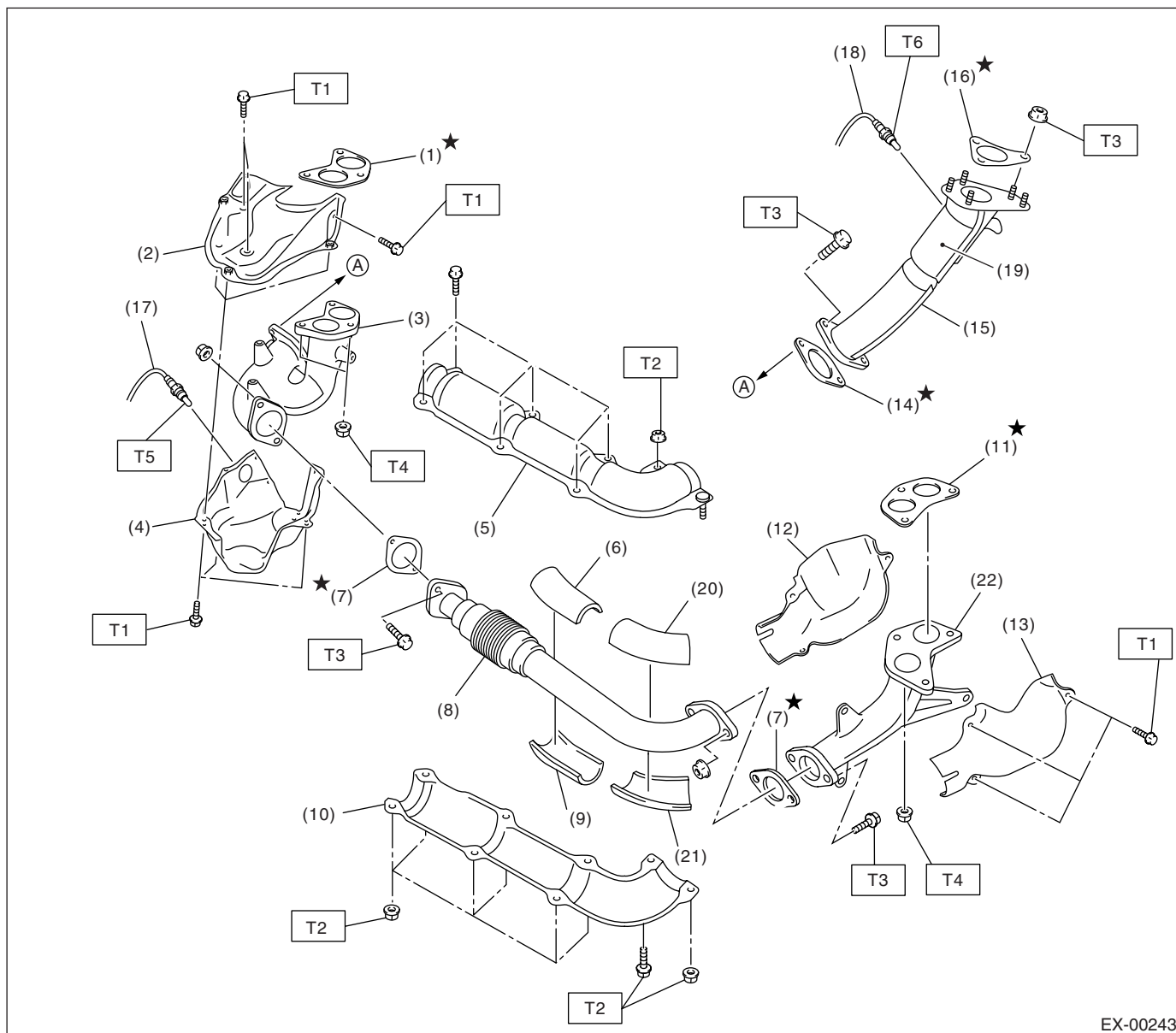
EX(H4DOTC)

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1. General Description

A: COMPONENT

1. FRONT EXHAUST PIPE



EX-00243

General Description

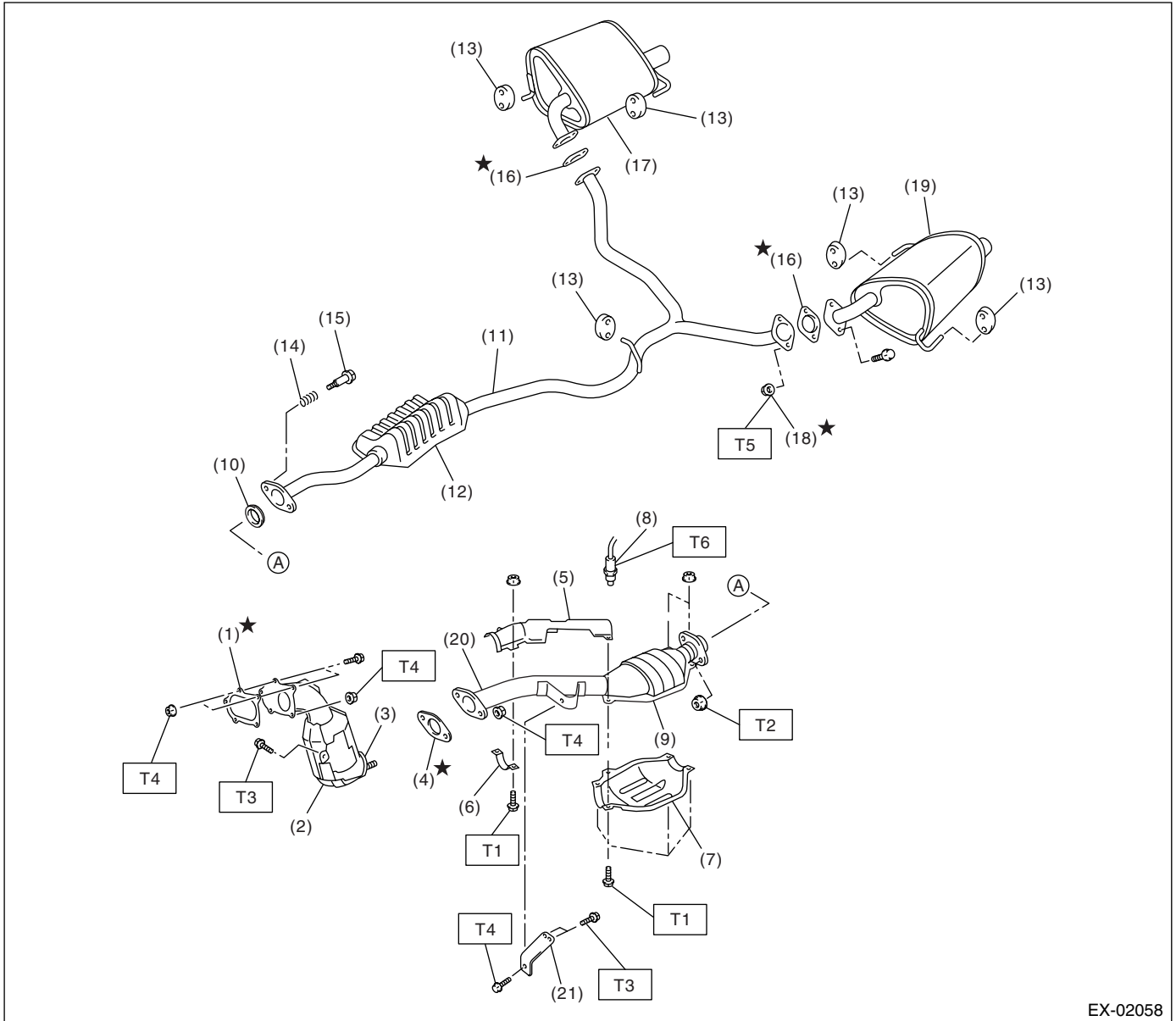
EXHAUST

(1) Gasket	(11) Gasket	(22) Exhaust manifold (LH)
(2) Exhaust manifold upper cover (RH)	(12) Exhaust manifold upper cover (LH)	
(3) Exhaust manifold (RH)	(13) Exhaust manifold lower cover (LH)	<i>Tightening torque: N·m (kgf-m, ft-lb)</i>
(4) Exhaust manifold lower cover (RH)	(14) Gasket	<i>T1: 19 (1.9, 13.7)</i>
(5) Front exhaust pipe upper cover	(15) Turbocharger joint pipe	<i>T2: 7.5 (0.8, 5.5)</i>
(6) Front exhaust pipe upper insulator (RH)	(16) Gasket	<i>T3: 35 (3.6, 26.0)</i>
(7) Gasket	(17) Front oxygen (A/F) sensor	<i>T4: 40 (4, 28.9)</i>
(8) Front exhaust pipe	(18) Exhaust temperature sensor	<i>T5: <Ref. to FU(H4DOTC)-35, INSTALLATION, Front Oxygen (A/F) Sensor.></i>
(9) Front exhaust pipe lower insulator (RH)	(19) Precatalytic converter	
(10) Front exhaust pipe lower cover	(20) Front exhaust pipe upper insulator (LH)	<i>T6: <Ref. to FU(H4DOTC)-38, INSTALLATION, Exhaust Temperature Sensor.></i>
	(21) Front exhaust pipe lower insulator (LH)	

General Description

EXHAUST

2. CENTER AND REAR EXHAUST PIPE, AND MUFFLER



- | | |
|--|---------------------------------|
| (1) Gasket | (11) Rear exhaust pipe |
| (2) Front catalytic converter | (12) Chamber |
| (3) Center exhaust pipe (Front) | (13) Cushion rubber |
| (4) Gasket | (14) Spring |
| (5) Center pipe upper cover (Rear) | (15) Bolt |
| (6) Clamp | (16) Gasket |
| (7) Rear catalytic converter lower cover | (17) Muffler (RH) |
| (8) Rear oxygen sensor | (18) Self-locking nut |
| (9) Rear catalytic converter | (19) Muffler (LH) |
| (10) Gasket | (20) Center exhaust pipe (Rear) |
| | (21) Bracket |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 13 (1.3, 9.6)

T2: 18 (1.8, 13.0)

T3: 30 (3.1, 22.4)

T4: 35 (3.6, 26.0)

T5: 48 (4.9, 35.4)

***T6: <Ref. to FU(H4DOTC)-37,
INSTALLATION, Rear Oxygen
Sensor.>***

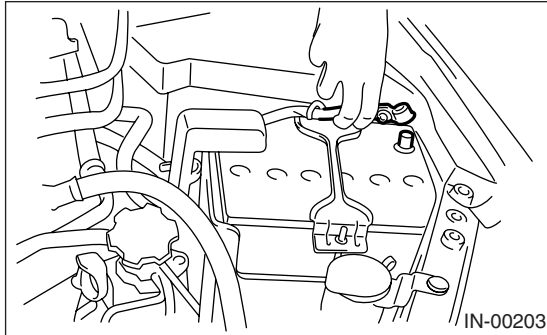
B: CAUTION

- 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. Front Exhaust Pipe

A: REMOVAL

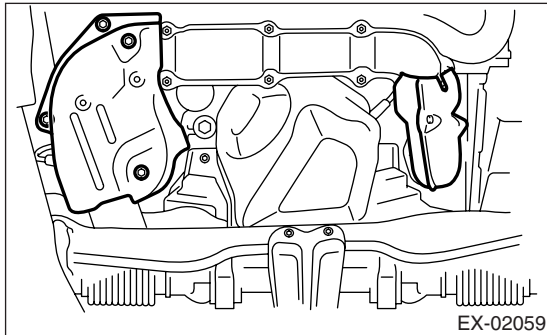
1) Disconnect the ground cable from battery.



2) Remove the front oxygen (A/F) sensor. <Ref. to FU(H4DOTC)-35, REMOVAL, Front Oxygen (A/F) Sensor.>

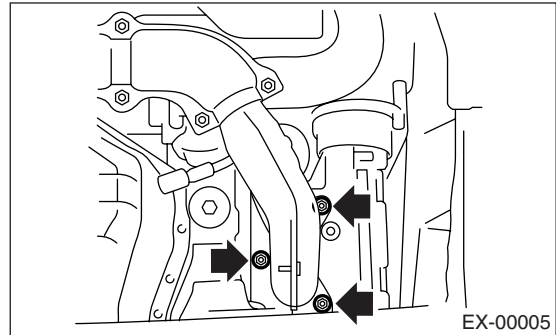
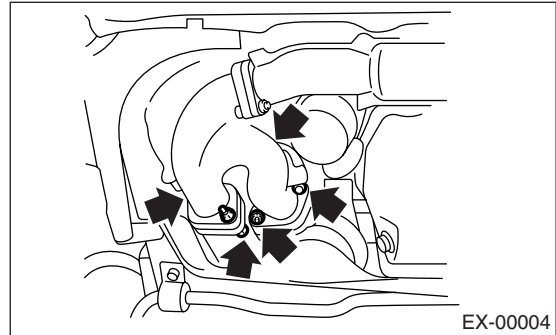
3) Remove the under cover.

4) Remove the exhaust manifold lower cover (RH) and the exhaust manifold lower cover (LH).



5) Remove the nuts which hold front exhaust pipe assembly to turbocharger joint pipe.

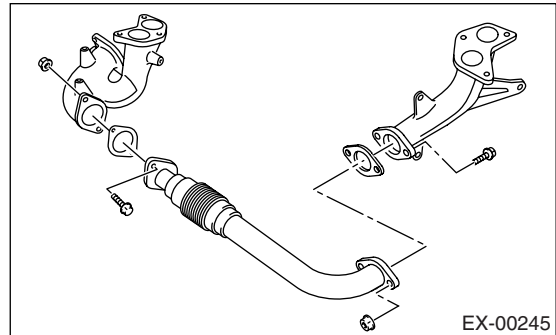
6) While holding the front exhaust pipe assembly with one hand, remove the nuts which hold front exhaust pipe assembly to cylinder head exhaust port.



7) Remove the front exhaust pipe assembly.

8) Remove the covers from exhaust manifold and front exhaust pipe.

9) Separate the front exhaust pipe from exhaust manifolds.



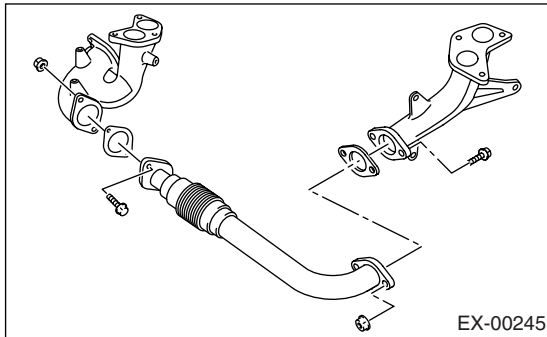
B: INSTALLATION

NOTE:

Replace the gaskets with new ones.

1) Assemble the front exhaust pipe and exhaust manifolds.

Tightening torque:
35 N·m (3.6 kgf-m, 26.0 ft-lb)



2) Install the front exhaust pipe covers.

Tightening torque:
7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

3) Install the exhaust manifold upper cover (RH).

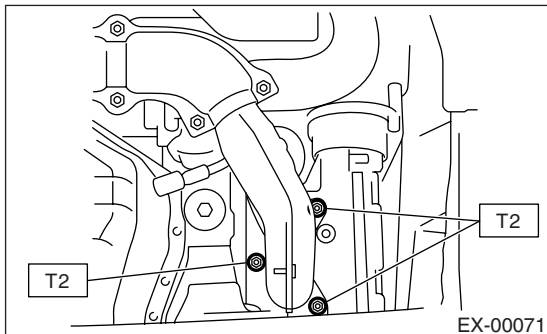
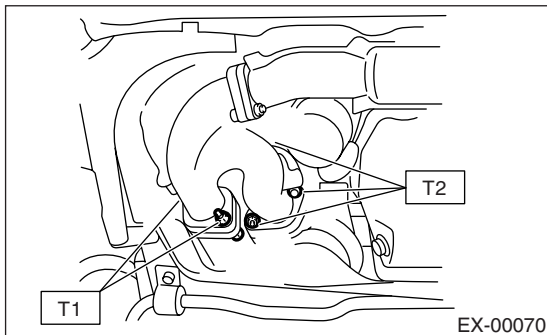
Tightening torque:
19 N·m (1.9 kgf-m, 13.7 ft-lb)

4) Install the front exhaust pipe assembly.

Tightening torque:
35 N·m (3.6 kgf-m, 26.0 ft-lb)

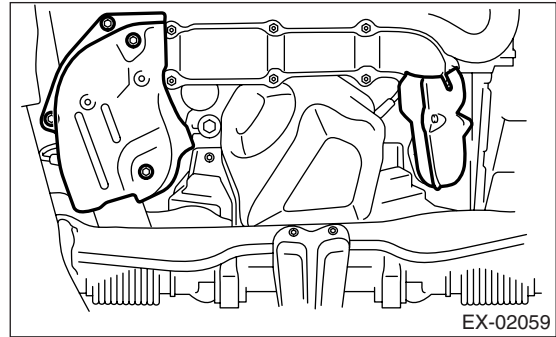
5) Connect the exhaust manifold (RH) to turbo-charger joint pipe.

Tightening torque:
T1: 35 N·m (3.6 kgf-m, 26.0 ft-lb)
T2: 40 N·m (4.0 kgf-m, 28.9 ft-lb)



6) Install the exhaust manifold lower cover (RH) and the exhaust manifold lower cover (LH).

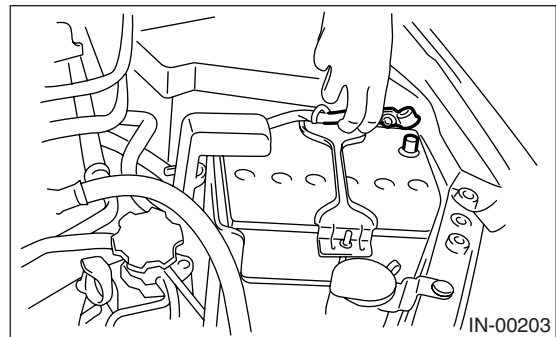
Tightening torque:
19 N·m (1.9 kgf-m, 13.7 ft-lb)



7) Install the front oxygen (A/F) sensor. <Ref. to FU(H4DOTC)-35, INSTALLATION, Front Oxygen (A/F) Sensor.>

8) Install the under cover.

9) Connect the battery ground cable to battery.



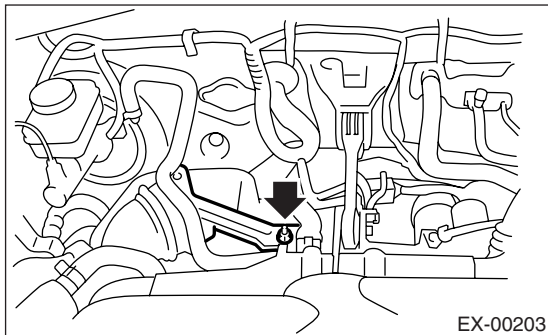
C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Check the front exhaust pipe for holes or rust.

3. Center Exhaust Pipe

A: REMOVAL

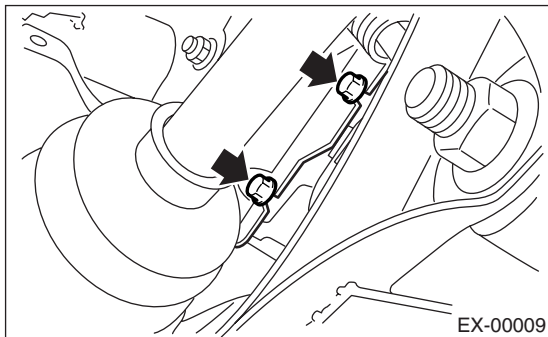
- 1) Set the vehicle on a lift.
- 2) Remove the collector cover.
- 3) Disconnect the ground cable from battery.
- 4) Remove the intercooler. <Ref. to IN(H4DOTC)-12, REMOVAL, Intercooler.>
- 5) Remove the intercooler bracket.



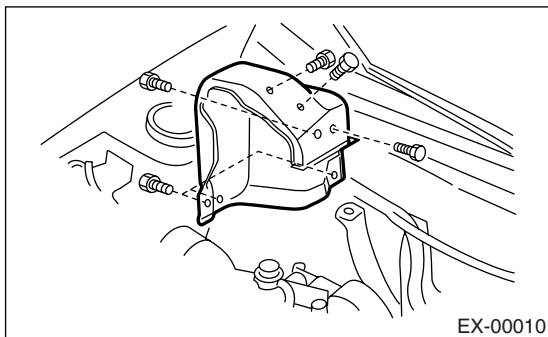
- 6) Lift-up the vehicle.
- 7) Remove the under cover.
- 8) Remove the bolts which install lower side of turbocharger upper cover.

CAUTION:

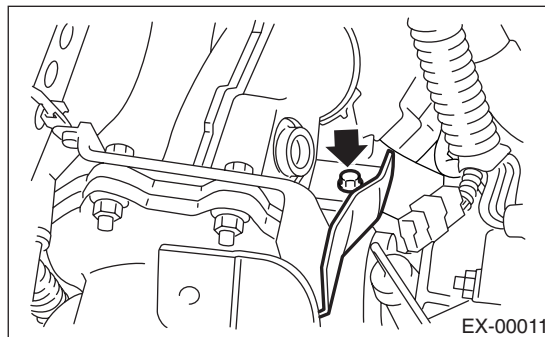
Be careful, the turbocharger and exhaust pipe are hot.



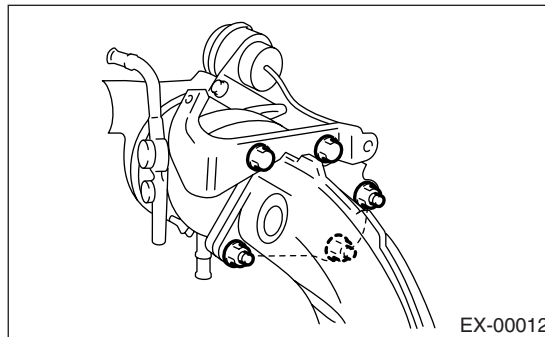
- 9) Lower the vehicle.
- 10) Remove the turbocharger upper cover.



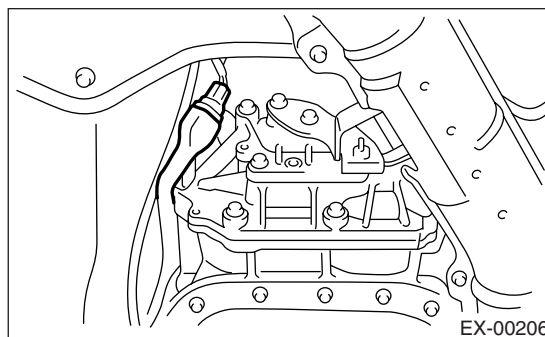
- 11) Remove the bolts which install upper side of turbocharger upper cover.



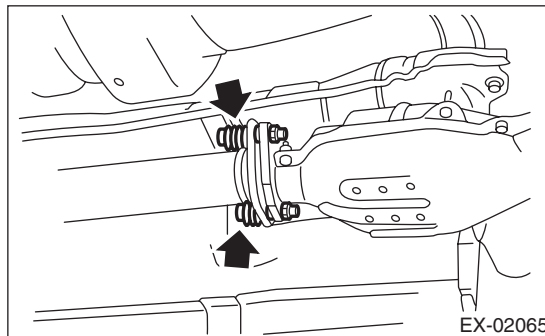
- 12) Separate the center exhaust pipe from turbocharger.



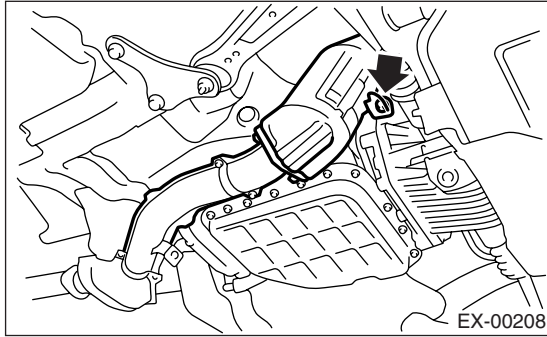
- 13) Lift-up the vehicle.
- 14) Disconnect the connector from rear oxygen sensor.



- 15) Separate the center exhaust pipe from rear exhaust pipe.



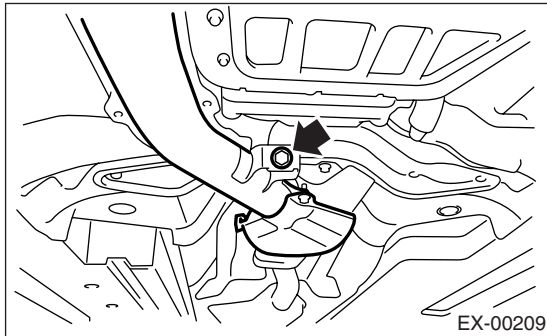
- 16) Remove the bolt which holds center exhaust pipe bracket to transmission.



- 17) Remove the intercooler bracket.
18) Remove the bolt which holds center exhaust pipe to hanger bracket.

CAUTION:

Be careful not to pull down the center exhaust pipe.



- 19) Remove the center exhaust pipe.



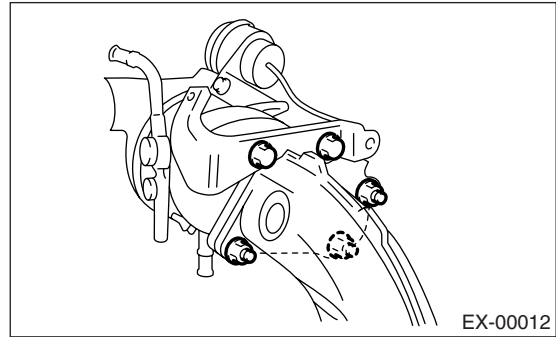
B: INSTALLATION

NOTE:

Replace the gaskets with new ones.

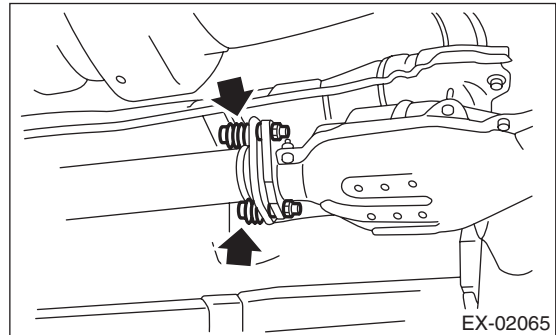
- 1) Install the center exhaust pipe and temporarily tighten the bolt which holds center exhaust pipe to hanger bracket.
- 2) Temporarily tighten the bolt which holds center pipe to transmission.
- 3) Connect the center exhaust pipe to turbocharger.

Tightening torque:
35 N·m (3.6 kgf-m, 26.0 ft-lb)

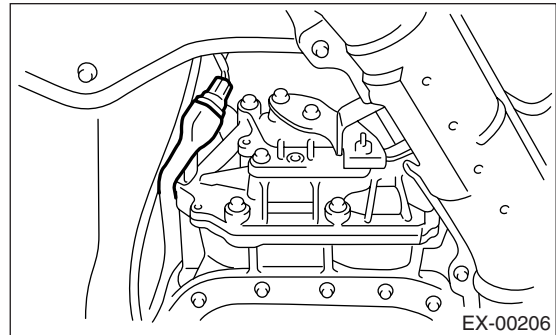


- 4) Install the center exhaust pipe to rear exhaust pipe.

Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)

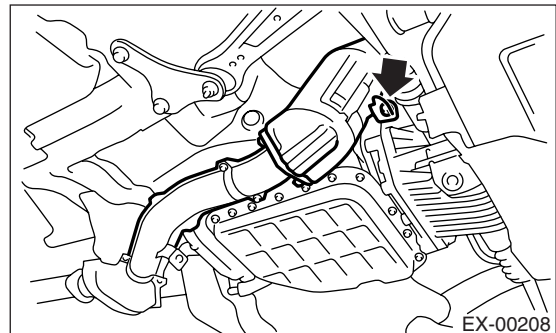


- 5) Connect the connector to rear oxygen sensor.



- 6) Tighten the bolt which holds center exhaust pipe bracket to transmission.

Tightening torque:
30 N·m (3.1 kgf-m, 22.4 ft-lb)

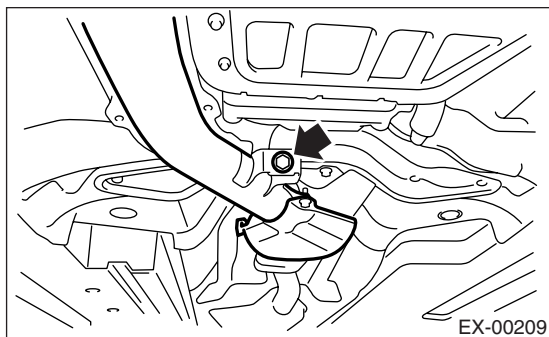


Center Exhaust Pipe

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- 7) Tighten the bolt which holds center exhaust pipe to hanger bracket.

Tightening torque:
35 N·m (3.6 kgf-m, 26.0 ft-lb)

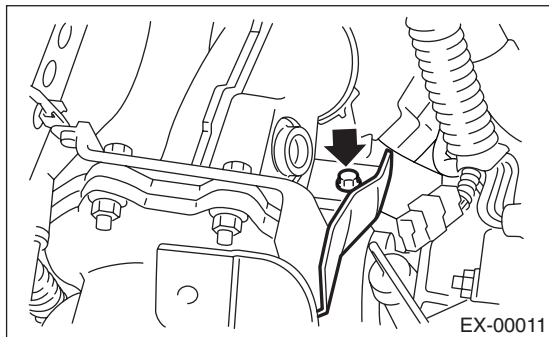


- 8) Tighten the bolts which hold intercooler bracket.

Tightening torque:
35 N·m (3.6 kgf-m, 26.0 ft-lb)

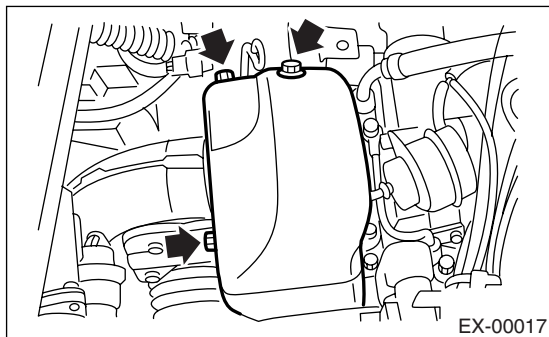
- 9) Lower the vehicle.
10) Place the turbocharger lower cover, and tighten the bolts which install upper side of lower cover.

Tightening torque:
7.4 N·m (0.75 kgf-m, 5.4 ft-lb)



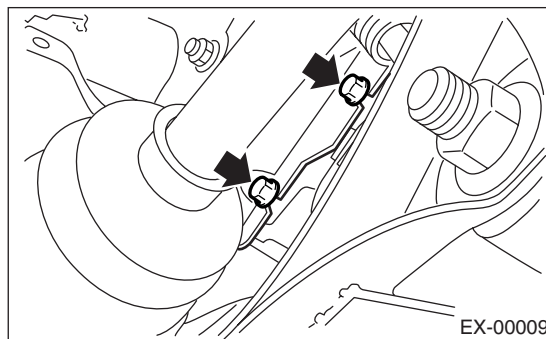
- 11) Place the turbocharger upper cover, and tighten the bolts which install upper side of upper cover.

Tightening torque:
7.4 N·m (0.75 kgf-m, 5.4 ft-lb)

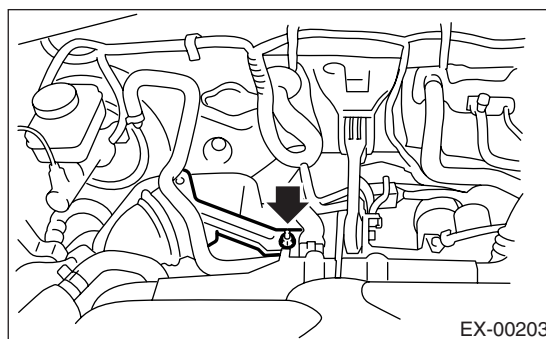


- 12) Lift-up the vehicle.
13) Tighten the bolts which install under side of turbocharger upper cover.

Tightening torque:
7.4 N·m (0.75 kgf-m, 5.4 ft-lb)



- 14) Install the under cover.
15) Lower the vehicle.
16) Install the intercooler bracket.



- 17) Install the intercooler. <Ref. to IN(H4DOTC)-12, INSTALLATION, Intercooler.>
18) Install the collector cover.

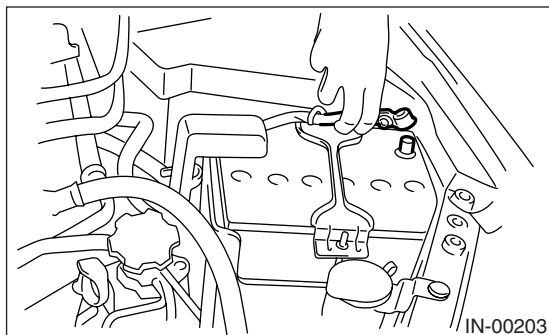
C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
2) Check the center exhaust pipe for holes or rust.

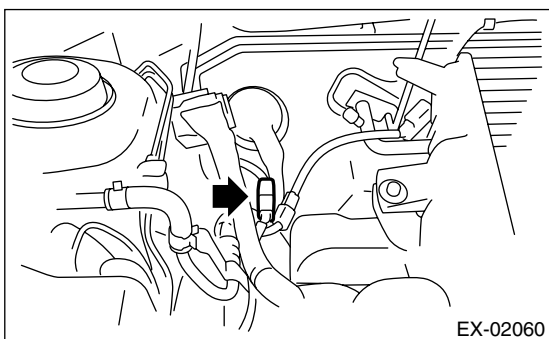
4. Joint Pipe

A: REMOVAL

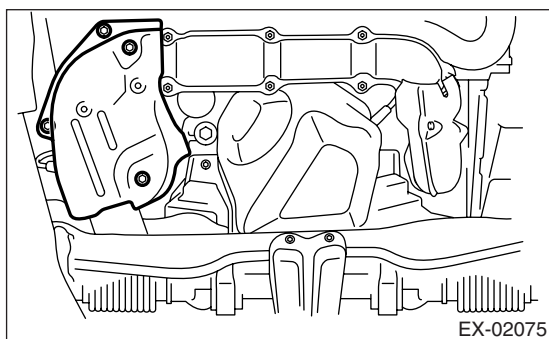
- 1) Remove the collector cover.
- 2) Disconnect the battery ground cable.



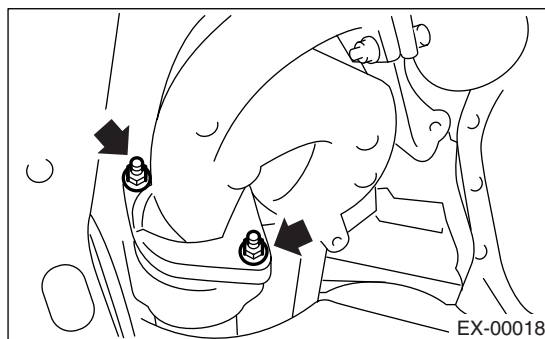
- 3) Disconnect the exhaust temperature sensor connector.



- 4) Remove the front oxygen (A/F) sensor. <Ref. to FU(H4DOTC)-35, REMOVAL, Front Oxygen (A/F) Sensor.>
- 5) Remove the under cover.
- 6) Remove the exhaust manifold lower cover (RH).



- 7) Remove the nuts which hold front exhaust manifold to joint pipe.



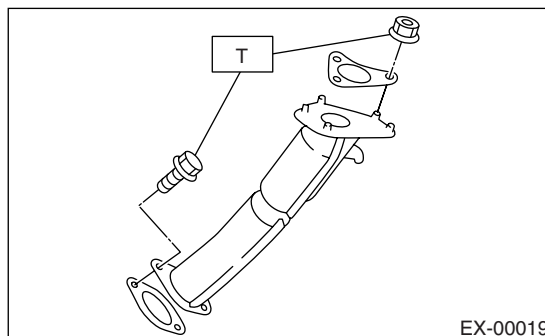
- 8) Remove the center exhaust pipe. <Ref. to EX(H4DOTC)-8, REMOVAL, Center Exhaust Pipe.>
- 9) Remove the turbocharger. <Ref. to IN(H4DOTC)-13, REMOVAL, Turbocharger.>
- 10) Take off the joint pipe in the upward direction.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

T: 35 N·m (3.6 kgf-m, 26.0 ft-lb)



C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Check the joint pipe for holes or rust.

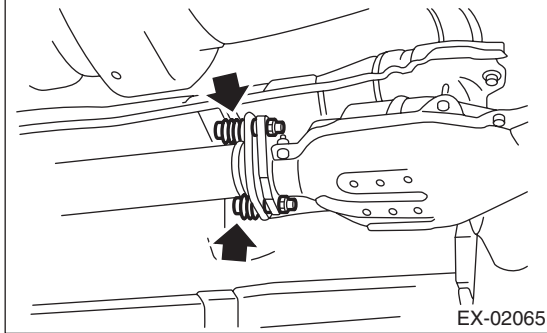
Rear Exhaust Pipe

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5. Rear Exhaust Pipe

A: REMOVAL

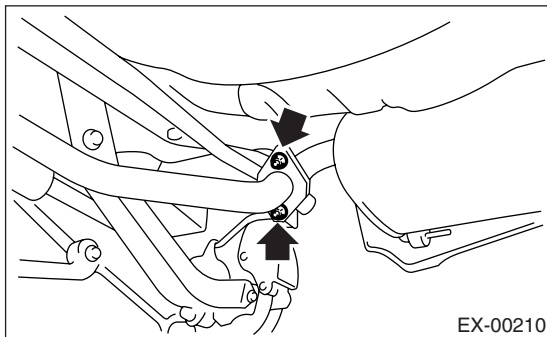
- 1) Lift-up the vehicle.
- 2) Separate the rear exhaust pipe from center exhaust pipe.



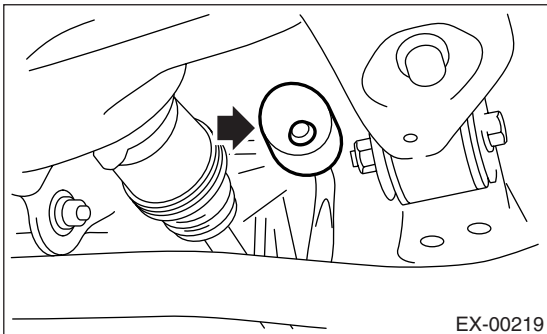
- 3) Separate the rear exhaust pipe from both mufflers.

CAUTION:

Be careful not to pull down the rear exhaust pipe.



- 4) Apply a coat of spray type lubricant to the mating area of cushion rubber.
- 5) Remove the rear exhaust pipe bracket from cushion rubber.

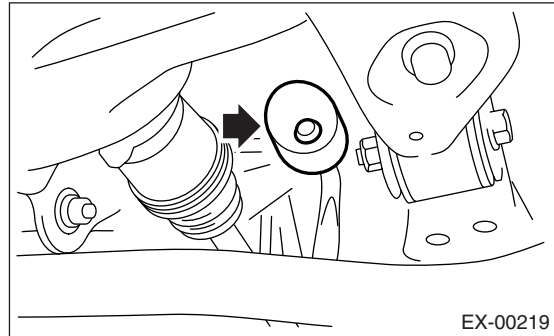


- 6) Remove the rear exhaust pipe.

B: INSTALLATION

- 1) Apply a coat of spray type lubricant to the mating area of cushion rubber.

- 2) Install the rear exhaust pipe bracket to cushion rubber.



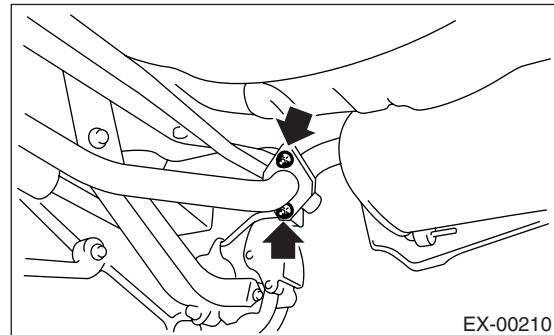
- 3) Install the rear exhaust pipe to both mufflers.

NOTE:

Use a new gasket.

Tightening torque:

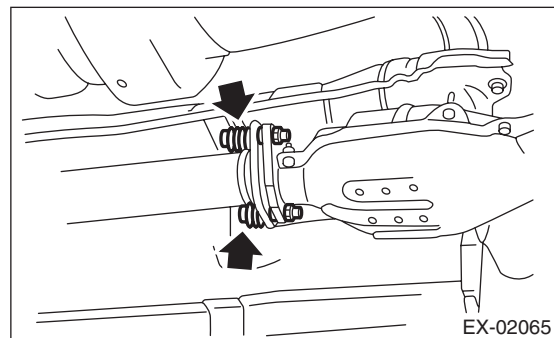
48 N·m (4.9 kgf-m, 35.4 ft-lb)



- 4) Install the rear exhaust pipe to center exhaust pipe.

Tightening torque:

35 N·m (3.6 kgf-m, 26.0 ft-lb)



- 5) Lower the vehicle.

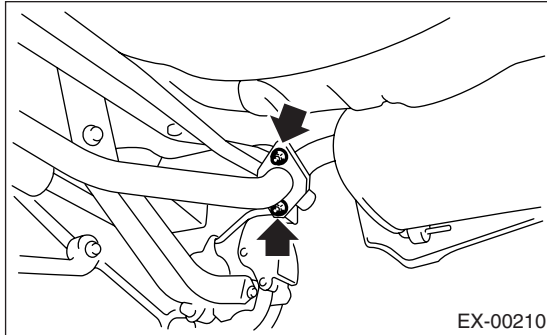
C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Check the rear exhaust pipe for holes or rust.
- 3) Check the cushion rubber for wear or crack.

6. Muffler

A: REMOVAL

- 1) Separate the muffler (RH) from rear exhaust pipe.



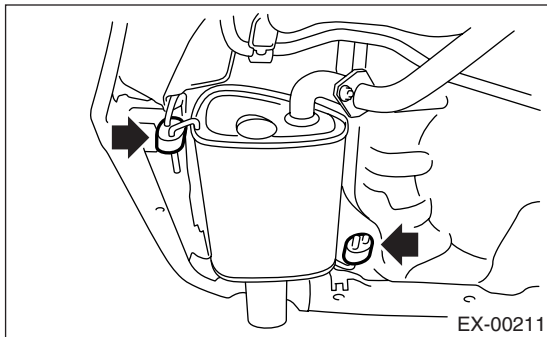
- 2) Remove the cushion rubbers, and detach the muffler.

CAUTION:

Be careful not to drop the muffler during removal.

NOTE:

To facilitate removal, apply a coat of spray type lubricant to the mating area of cushion rubbers in advance.



- 3) Perform the same procedure for muffler (LH).

B: INSTALLATION

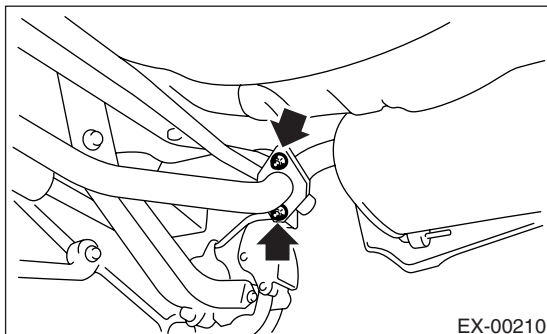
Install in the reverse order of removal.

NOTE:

Always use a new gasket and self-locking nuts.

Tightening torque:

48 N·m (4.9 kgf-m, 35.4 ft-lb)



C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Check the mufflers for holes or rust.
- 3) Check the cushion rubber for wear or crack.

Muffler

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