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EXHAUST

General Description

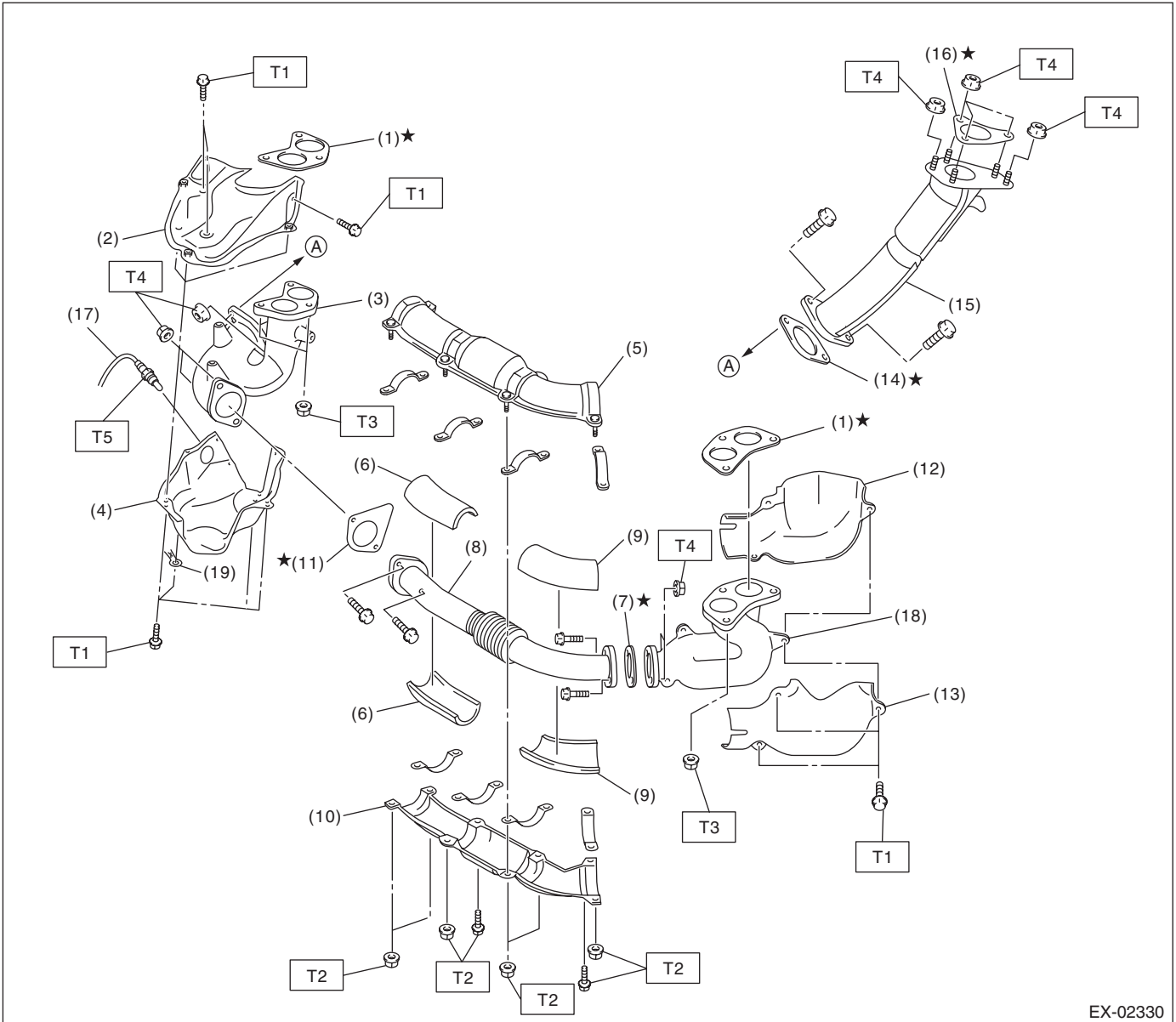
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EXHAUST

1. General Description

A: COMPONENT

1. FRONT EXHAUST PIPE



EX-02330

- | | |
|-------------------------------------|--------------------------------------|
| (1) Gasket | (11) Gasket |
| (2) Exhaust manifold upper cover RH | (12) Exhaust manifold inner cover LH |
| (3) Exhaust manifold RH | (13) Exhaust manifold outer cover LH |
| (4) Exhaust manifold lower cover RH | (14) Gasket |
| (5) Front exhaust pipe upper cover | (15) Turbocharger joint pipe |
| (6) Front exhaust pipe insulator RH | (16) Gasket |
| (7) Gasket | (17) Front oxygen (A/F) sensor |
| (8) Front exhaust pipe | (18) Exhaust manifold LH |
| (9) Front exhaust pipe insulator LH | (19) Ground cable |
| (10) Front exhaust pipe lower cover | |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 19 (1.9, 14.0)

T2: 25 (2.5, 18.4)

T3: 40 (4.1, 29.5)

T4: 42.5 (4.3, 31.3)

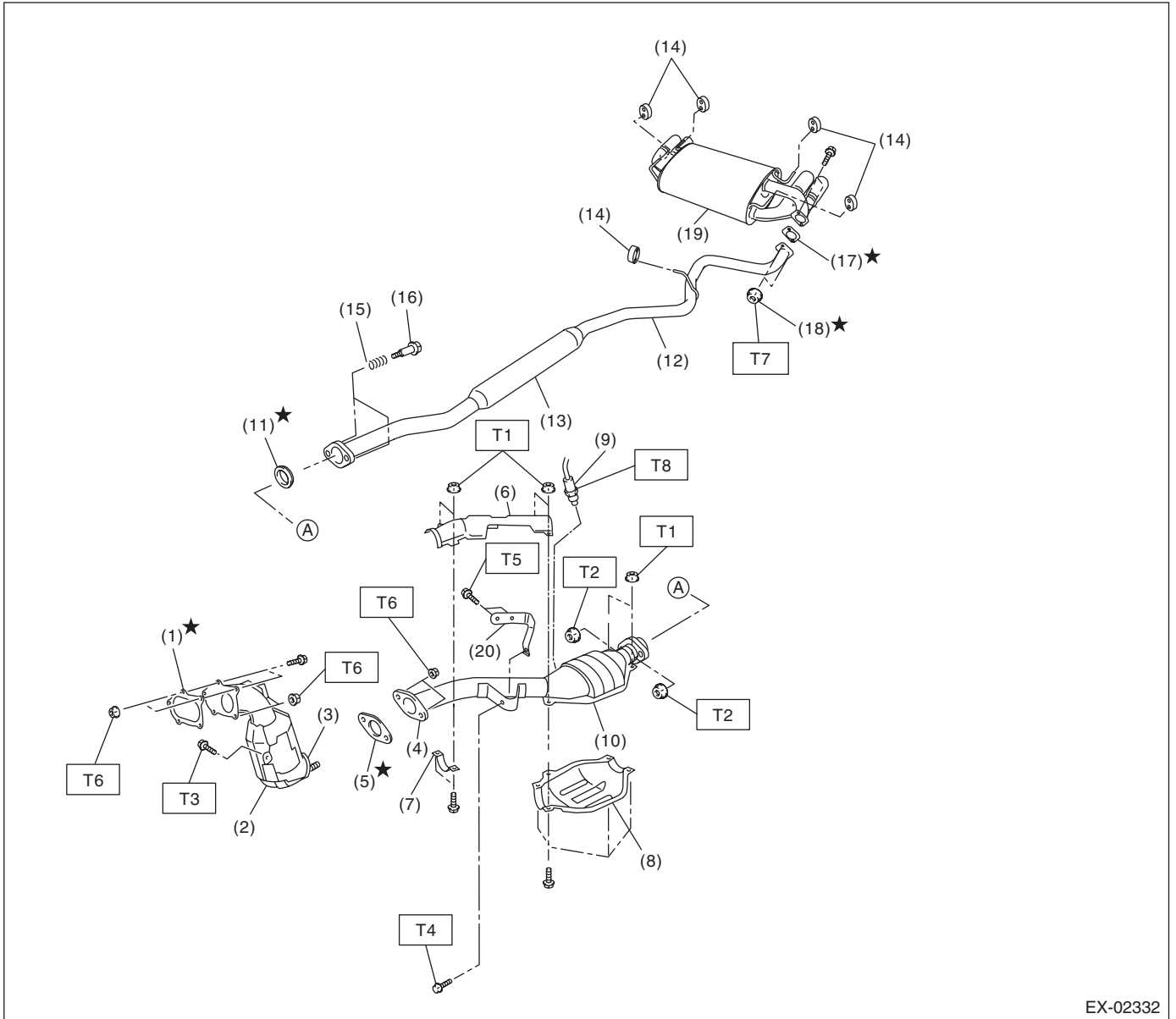
T5: <Ref. to FU(STI)-46, INSTALLATION, Front Oxygen (A/F) Sensor.>

General Description

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2. CENTER AND REAR EXHAUST PIPE, AND MUFFLER



EX-02332

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

Tightening torque:N·m (kgf·m, ft·lb)	
T1:	13 (1.3, 9.6)
T2:	18 (1.8, 13.3)
T3:	30 (3.1, 22.1)
T4:	35 (3.6, 25.8)
T5:	40 (4.1, 29.5)
T6:	42.5 (4.3, 31.3)
T7:	48 (4.9, 35.4)
T8:	<Ref. to FU(STI)-47, INSTALLATION, Rear Oxygen Sensor.>

B: 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 the battery.
- If any oil or grease is spilled on the exhaust pipe, wipe off completely to prevent fires.

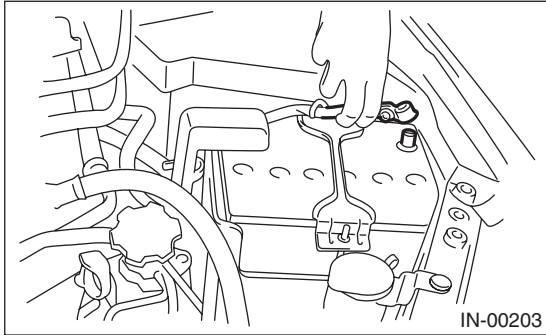
2. Front Exhaust Pipe

A: REMOVAL

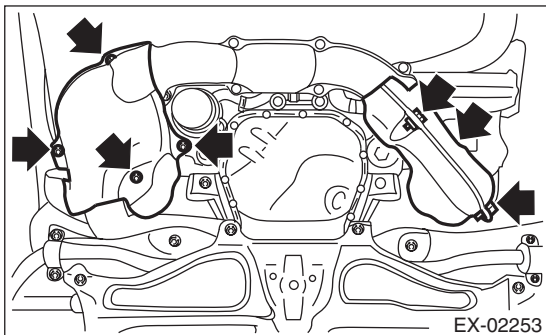
CAUTION:

Be careful not to burn yourself, because the exhaust pipe becomes extremely hot after running.

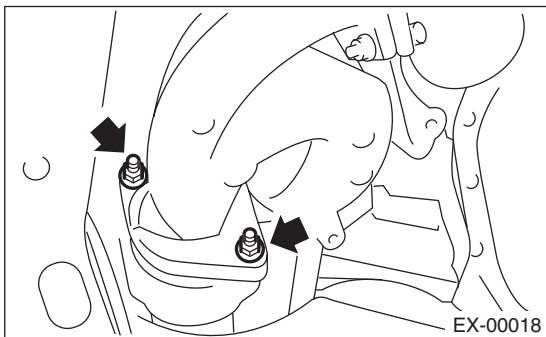
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from the battery.



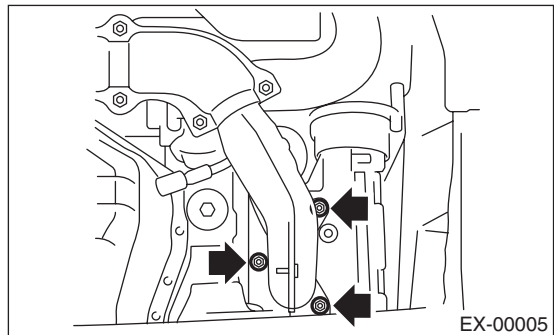
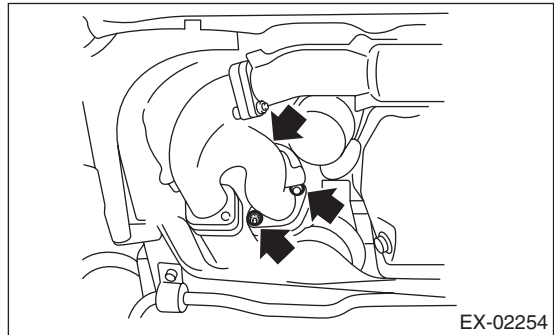
- 3) Lift up the vehicle.
- 4) Remove the under cover.
- 5) Remove the front oxygen (A/F) sensor.
<Ref. to FU(STI)-45, REMOVAL, Front Oxygen (A/F) Sensor.>
- 6) Remove the exhaust manifold lower cover RH and the exhaust manifold cover LH.



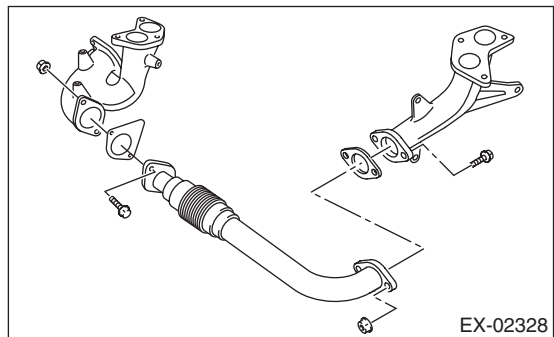
- 7) Remove the bolts and nuts which hold front exhaust pipe assembly onto turbocharger joint pipe.



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



- 9) Remove the front exhaust pipe assembly.
- 10) Remove the covers from exhaust manifold and front exhaust pipe.
- 11) Separate the front exhaust pipe from exhaust manifolds.



Front Exhaust Pipe

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B: INSTALLATION

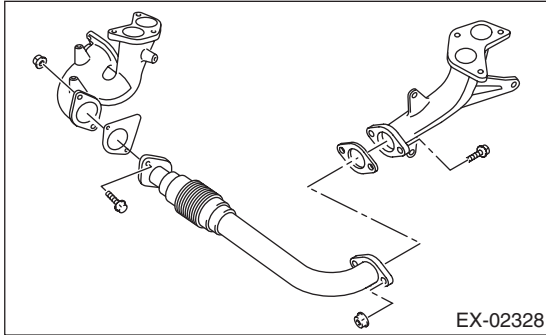
1) Install the front exhaust pipe and the exhaust manifold.

NOTE:

Use a new gasket.

Tightening torque:

42.5 N·m (4.3 kgf·m, 31.3 ft·lb)



2) Install the front exhaust pipe cover.

Tightening torque:

25 N·m (2.5 kgf·m, 18.4 ft·lb)

3) Install the exhaust manifold upper cover RH.

Tightening torque:

19 N·m (1.9 kgf·m, 14.0 ft·lb)

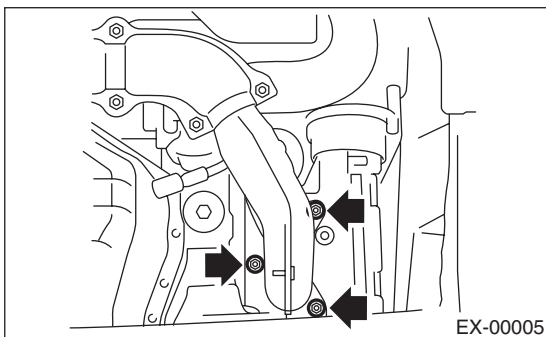
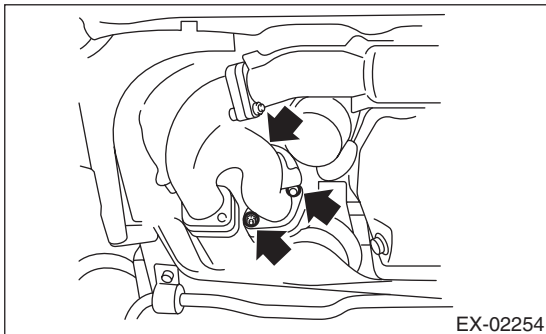
4) Install the front exhaust pipe assembly.

NOTE:

Use a new gasket.

Tightening torque:

40 N·m (4.1 kgf·m, 29.5 ft·lb)



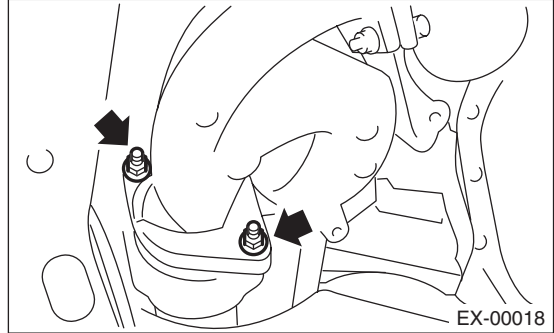
5) Connect the exhaust manifold RH to the turbo-charger joint pipe.

NOTE:

Use a new gasket.

Tightening torque:

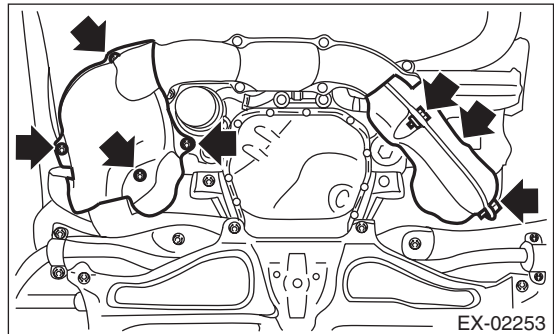
42.5 N·m (4.3 kgf·m, 31.3 ft·lb)



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

Tightening torque:

19 N·m (1.9 kgf·m, 14.0 ft·lb)



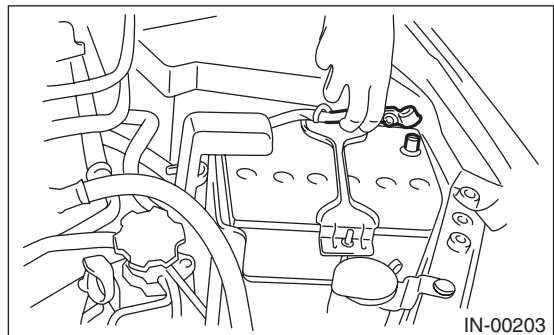
7) Install the front oxygen (A/F) sensor.

<Ref. to FU(STI)-46, INSTALLATION, Front Oxygen (A/F) Sensor.>

8) Install the under cover.

9) Lower the vehicle.

10) Connect the ground cable to the battery.



C: INSPECTION

1) Check the connections and welds for exhaust leaks.

2) Make sure there are no holes or rusting.

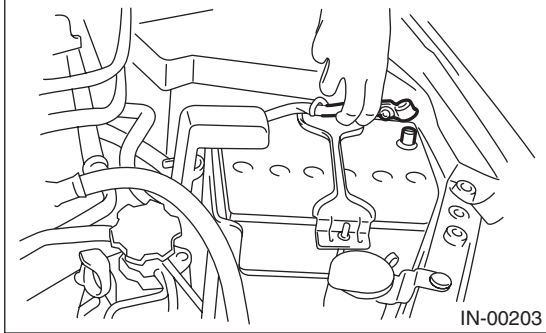
3. Center Exhaust Pipe

A: REMOVAL

CAUTION:

Be careful not to burn yourself, because the exhaust pipe becomes extremely hot after running.

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

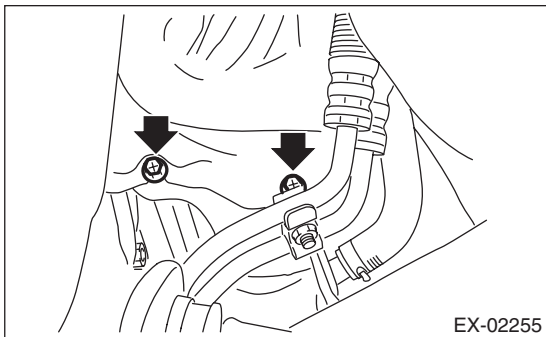


3) Remove the intercooler. <Ref. to IN(STI)-11, REMOVAL, Intercooler.>

4) Lift up the vehicle.

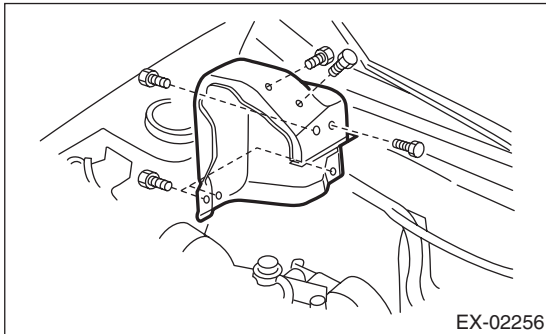
5) Remove the under cover.

6) Remove the bolts which hold the lower side of the turbocharger lower cover.

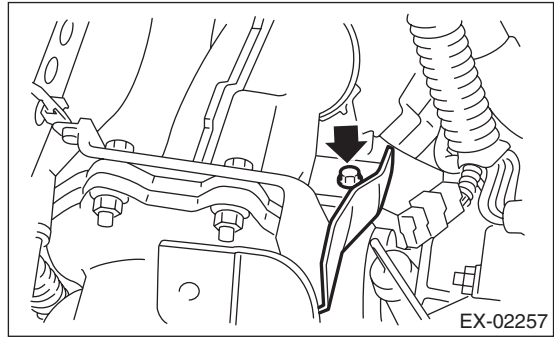


7) Lower the vehicle.

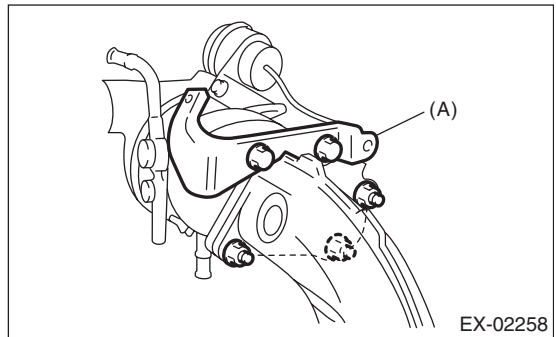
8) Remove the turbocharger upper cover.



9) Remove the bolts which hold the upper side of the turbo charger lower cover.

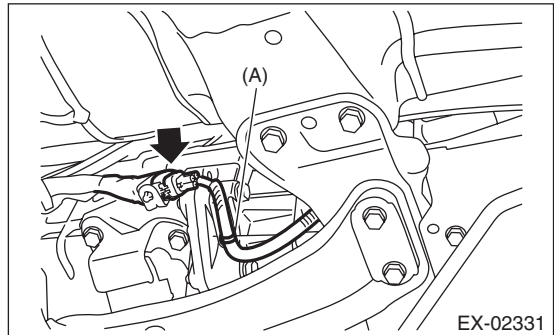


10) Separate the center exhaust pipe from the turbocharger, and remove the turbo charger cover stay (A).

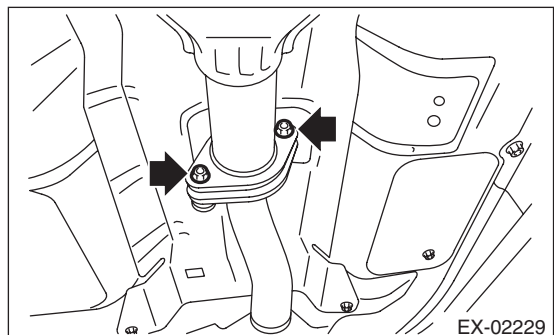


11) Lift up the vehicle.

12) Disconnect the connector from the rear oxygen sensor, and remove the clip (A) holding the rear oxygen sensor harness.



13) Separate the center exhaust pipe from rear exhaust pipe.

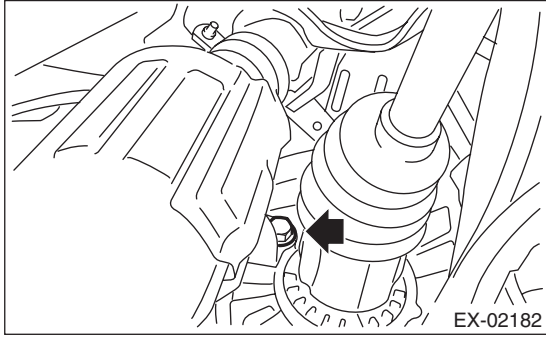


Center Exhaust Pipe

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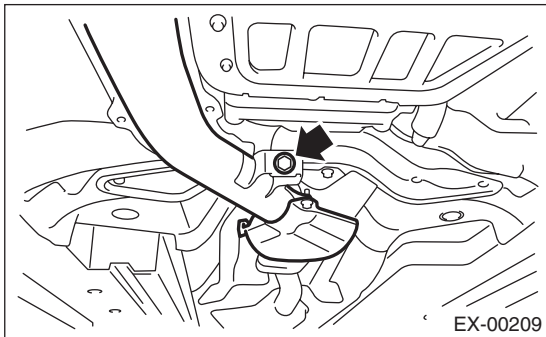
14) Remove the bolt which holds center exhaust pipe bracket to transmission.



15) Remove the bolts which hold the center exhaust pipe to the hanger bracket, and remove the center exhaust pipe.

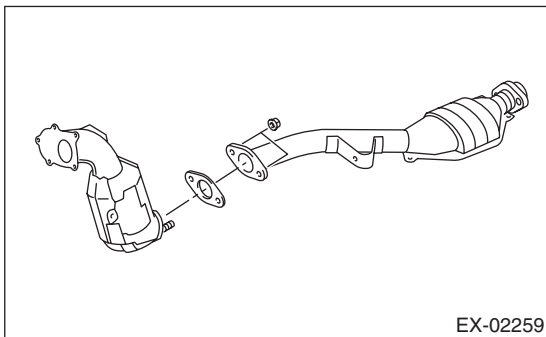
CAUTION:

Be careful not to drop the center exhaust pipe.



16) Remove the turbocharger lower cover.

17) Separate the center exhaust pipe (front) and center exhaust pipe (rear).



B: INSTALLATION

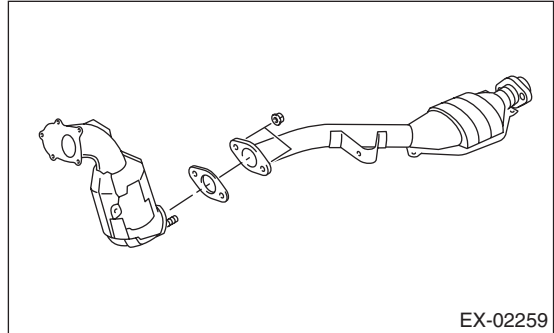
1) Assemble the center exhaust pipe (front) and center exhaust pipe (rear).

NOTE:

Use a new gasket.

Tightening torque:

42.5 N·m (4.3 kgf·m, 31.3 ft·lb)



2) Set the turbo charger lower cover, and temporarily tighten the bolt holding the lower side of the turbo charger lower cover.

3) Install the center exhaust pipe and temporarily tighten the bolt which holds center exhaust pipe to hanger bracket.

4) Temporarily tighten the bolt which holds the center exhaust pipe to the transmission.

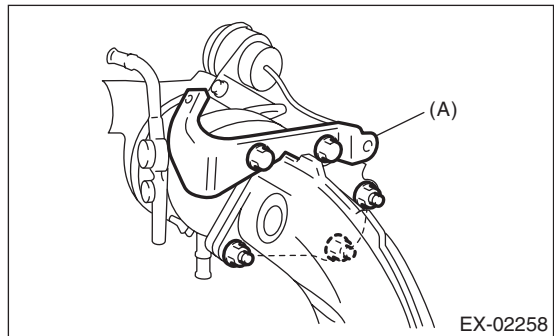
5) Connect the center exhaust pipe along with the turbo charger cover stay (A) to the turbocharger.

NOTE:

Use a new gasket.

Tightening torque:

42.5 N·m (4.3 kgf·m, 31.3 ft·lb)



Center Exhaust Pipe

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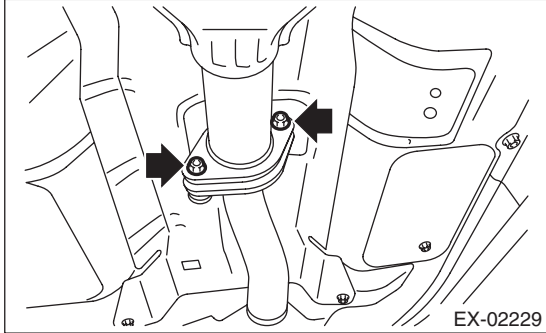
6) Install the center exhaust pipe to rear exhaust pipe.

NOTE:

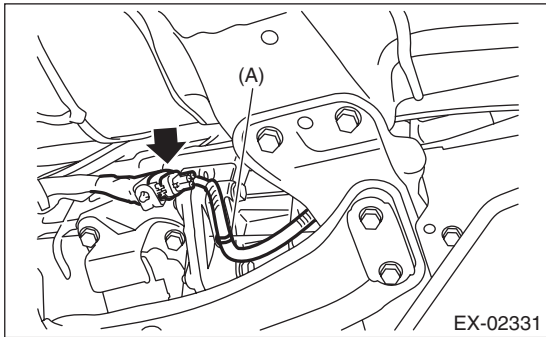
Use a new gasket.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)



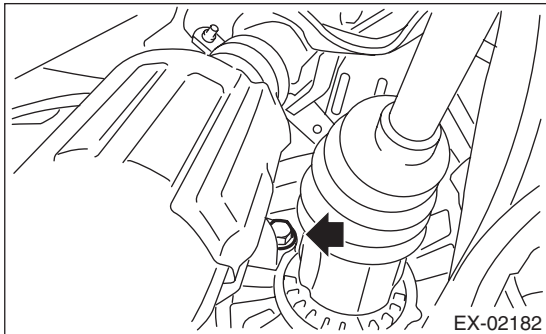
7) Connect the connector to the rear oxygen sensor, and install the clip (A) holding the rear oxygen sensor harness.



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

Tightening torque:

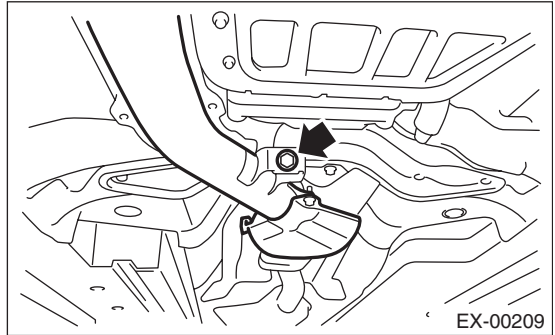
30 N·m (3.1 kgf·m, 22.1 ft·lb)



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

Tightening torque:

35 N·m (3.6 kgf·m, 25.8 ft·lb)

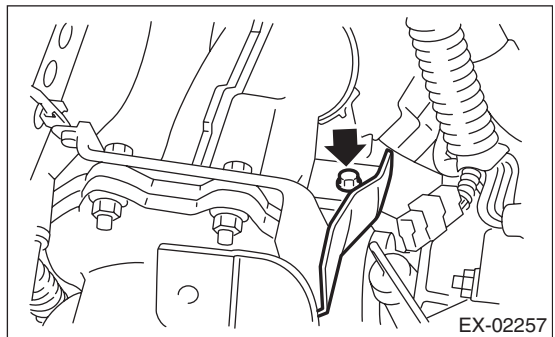


10) Lower the vehicle.

11) Attach the bolts which hold the upper side of the turbo charger lower cover.

Tightening torque:

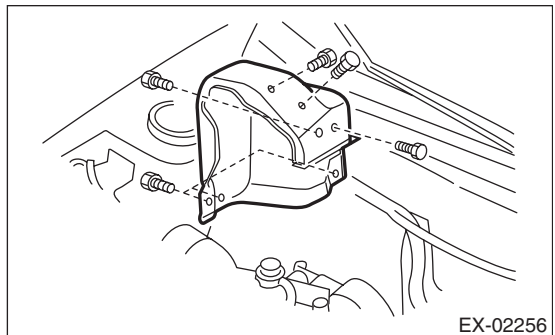
7.5 N·m (0.8 kgf·m, 5.5 ft·lb)



12) Attach the turbo charger upper cover.

Tightening torque:

7.5 N·m (0.8 kgf·m, 5.5 ft·lb)



13) Lift up the vehicle.

Center Exhaust Pipe

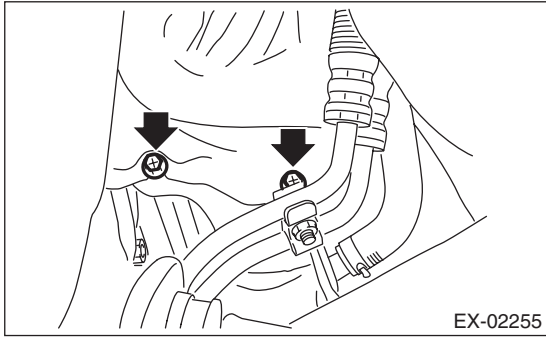
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14) Tighten the bolts which hold the lower side of the turbo charger lower cover.

Tightening torque:

7.5 N·m (0.8 kgf·m, 5.5 ft·lb)

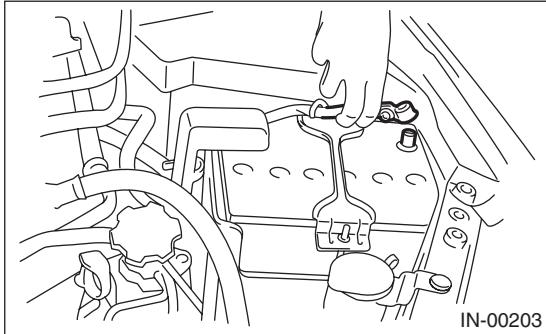


15) Install the under cover.

16) Lower the vehicle.

17) Install the intercooler. <Ref. to IN(STI)-12, INSTALLATION, Intercooler.>

18) Connect the ground cable to the battery.



C: INSPECTION

1) Check the connections and welds for exhaust leaks.

2) Make sure there are no holes or rusting.

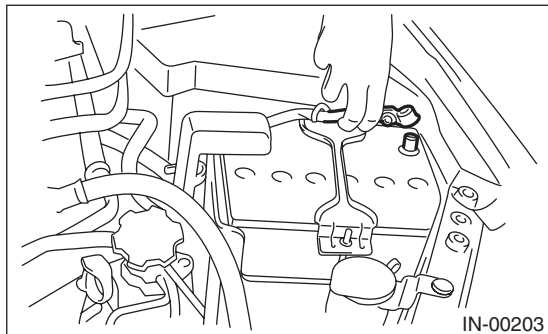
4. Joint Pipe

A: REMOVAL

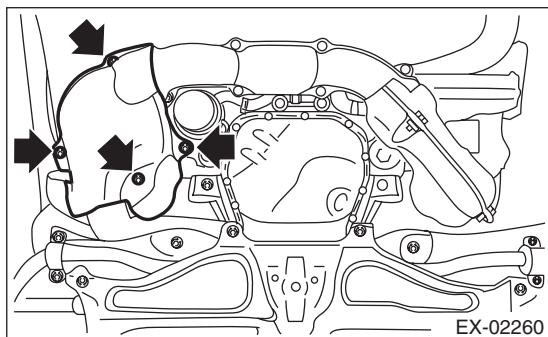
CAUTION:

Be careful not to burn yourself, because the exhaust pipe becomes extremely hot after running.

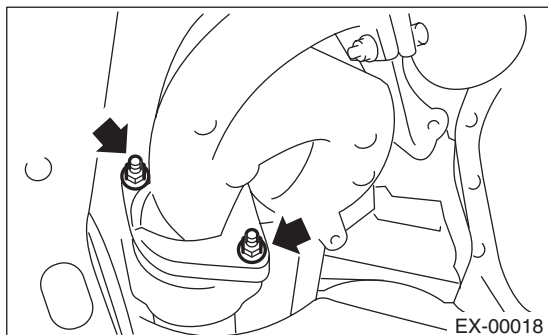
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from the battery.



- 3) Remove the under cover.
- 4) Remove the front oxygen (A/F) sensor.
<Ref. to FU(STI)-45, REMOVAL, Front Oxygen (A/F) Sensor.>
- 5) Remove the exhaust manifold lower cover RH.



- 6) Remove the bolts and nuts which hold the front exhaust manifold to joint pipe.



- 7) Remove the center exhaust pipe.
<Ref. to EX(STI)-7, REMOVAL, Center Exhaust Pipe.>
- 8) Remove the turbocharger. <Ref. to IN(STI)-14, REMOVAL, Turbocharger.>
- 9) Take off the joint pipe in the upward direction.

B: INSTALLATION

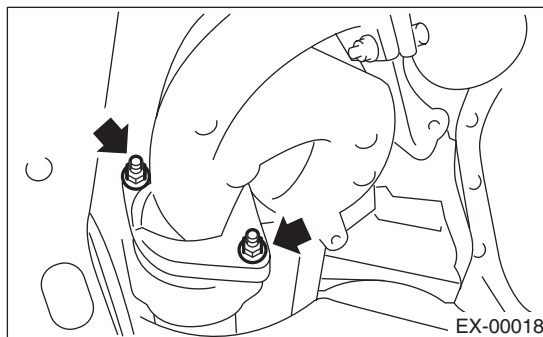
Install in the reverse order of removal.

NOTE:

Use a new gasket.

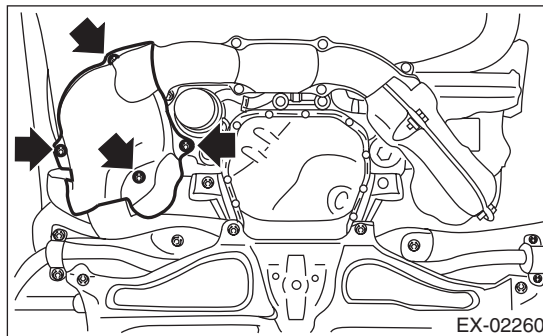
Tightening torque:

T: 42.5 N·m (4.3 kgf·m, 31.3 ft·lb)



Tightening torque:

19 N·m (1.9 kgf·m, 14.0 ft·lb)



C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Make sure there are no holes or rusting.

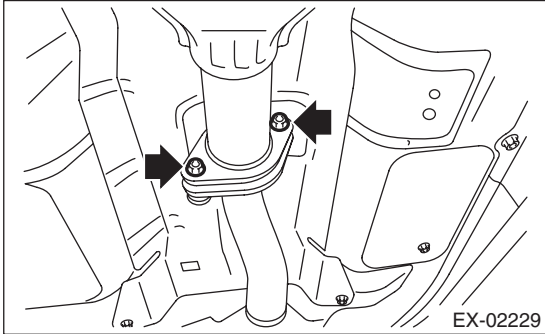
5. Rear Exhaust Pipe

A: REMOVAL

CAUTION:

Be careful not to burn yourself, because the exhaust pipe becomes extremely hot after running.

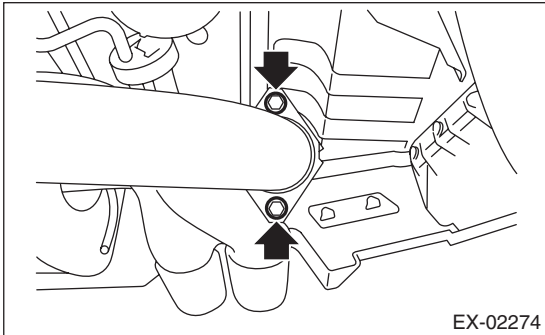
- 1) Set the vehicle on a lift.
- 2) Lift up the vehicle.
- 3) Separate the rear exhaust pipe from center exhaust pipe.



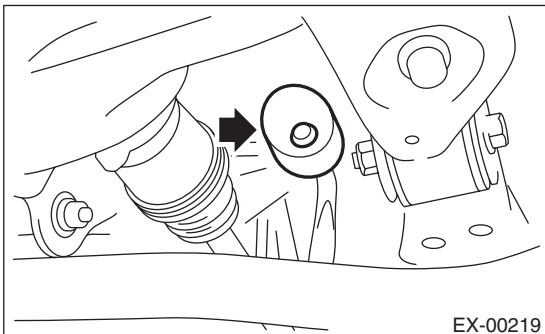
- 4) Separate the rear exhaust pipe from muffler.

CAUTION:

Be careful not to drop the rear exhaust pipe.



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



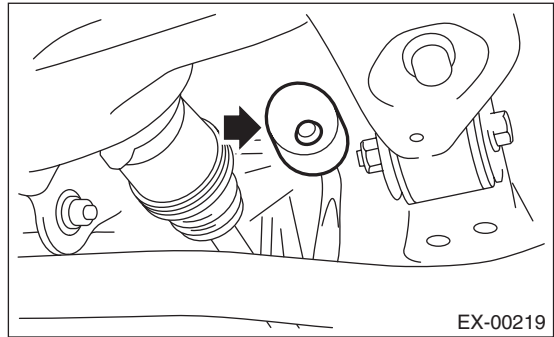
- 7) Remove the rear exhaust pipe.

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.

NOTE:

After assembling, degrease the lubricant which was applied to the cushion rubber while removing/installing.



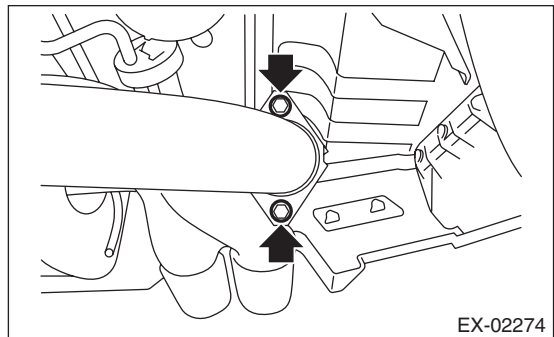
- 3) Install the rear exhaust pipe to muffler.

NOTE:

Use a new gasket and self-locking nut.

Tightening torque:

48 N·m (4.9 kgf·m, 35.4 ft·lb)



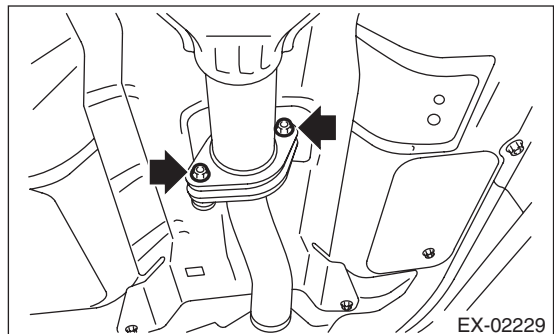
- 4) Install the rear exhaust pipe to center exhaust pipe.

NOTE:

Use a new gasket.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)



- 5) Lower the vehicle.

C: INSPECTION

- 1) Check the connections and welds for exhaust leaks.
- 2) Make sure there are no holes or rusting.
- 3) Check the cushion rubber for wear or crack.

EXHAUST

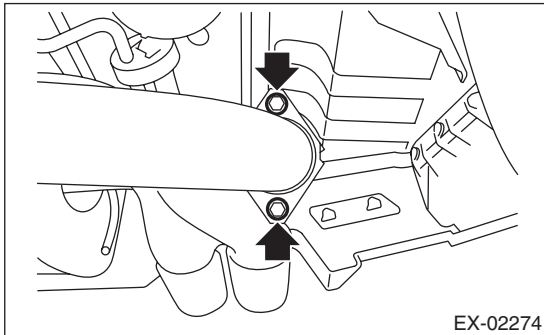
6. Muffler

A: REMOVAL

CAUTION:

Be careful not to burn yourself, because the exhaust pipe becomes extremely hot after running.

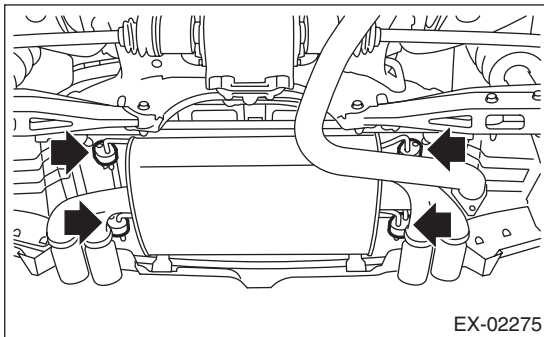
- 1) Set the vehicle on a lift.
- 2) Lift up the vehicle.
- 3) Separate the muffler from rear exhaust pipe.



- 4) Apply a coat of spray type lubricant to the mating area of cushion rubber.
- 5) Remove the cushion rubber, and remove the muffler.

CAUTION:

Be careful not to drop the muffler during removal.



B: INSTALLATION

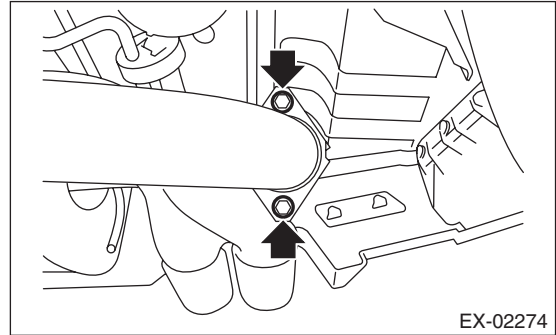
Install in the reverse order of removal.

NOTE:

- Use a new gasket and self-locking nut.
- After assembling, degrease the lubricant which was applied to the cushion rubber while removing/installing.

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) Make sure there are no holes or rusting.
- 3) Check the cushion rubber for wear or crack.