

EXHAUST SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

id0115z7800200

Warning

- A hot engine and exhaust system can cause severe burns. Turn off the engine and wait until they are cool before removing the exhaust system.

Caution

- Perform exhaust gas temperature sensor removal/installation only when inspection or replacement is required, such as when DTCs for the sensor are displayed, because it may cause exhaust gas leakage. If the exhaust gas temperature sensor is removed/installed once, always verify that there is no exhaust gas leakage after reinstallation.

Note

- If the catalytic converter is replaced, perform the DPF data reset procedure.

Operation After Replacing Catalytic Converter

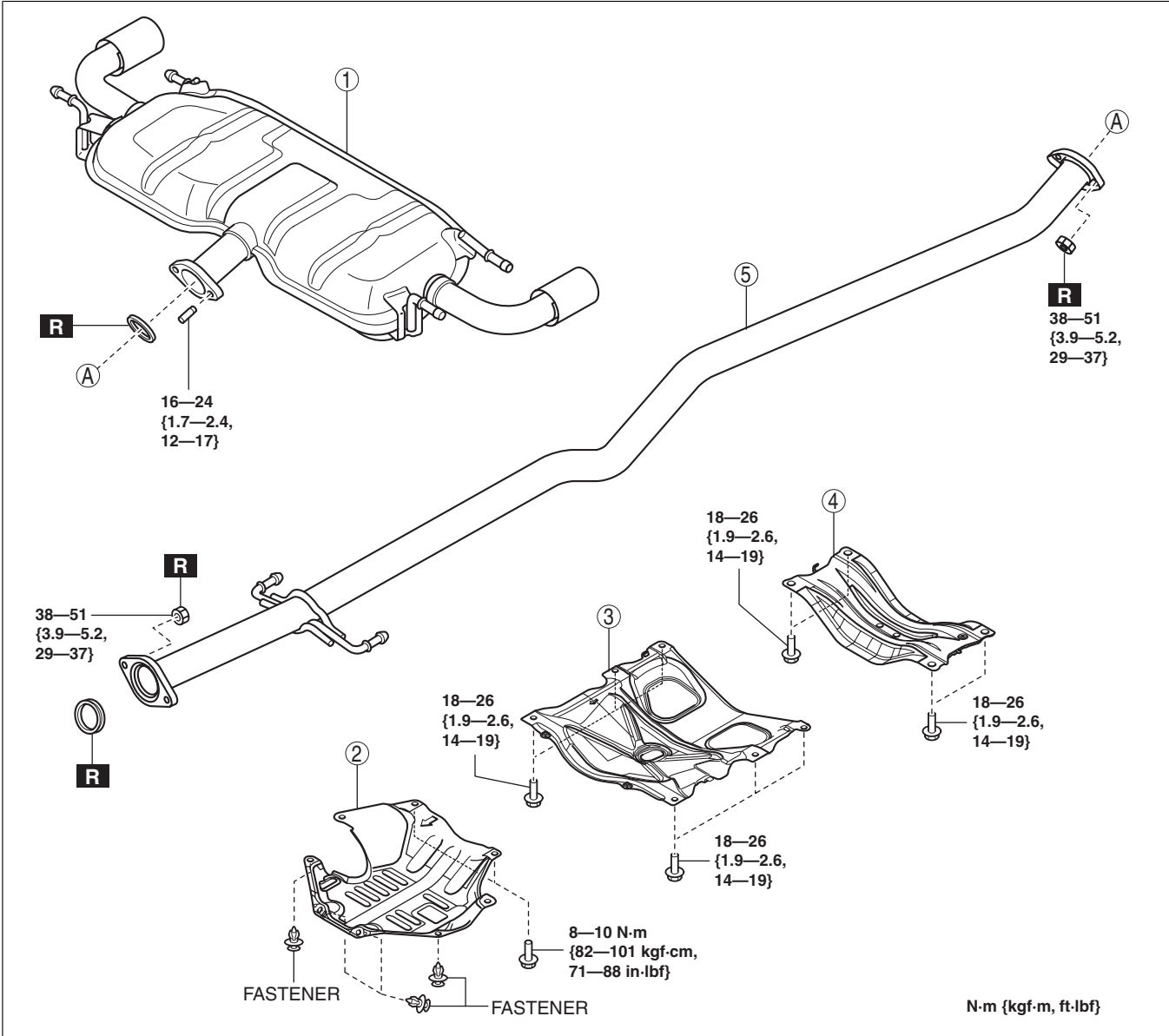
1. If the catalytic converter is replaced, perform the following procedure.

STEP	ACTION	PAGE/CONDITION
1	Perform DPF data reset procedure.	(See DIESEL PARTICULATE FILTER DATA RESET [SKYACTIV-D 2.2].)
2	Switch the ignition off.	—
3	Wait for 20 s.	—
4	Switch the ignition ON (engine off).	—
5	Perform KOEO self-test procedure.	(See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)
6	Start the engine.	—
7	Verify that the check engine light does not illuminate.	—
8	Perform KOER self-test procedure.	(See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)
9	Perform fuel injector injection amount correction.	(See FUEL INJECTOR INJECTION AMOUNT CORRECTION [SKYACTIV-D 2.2].)
10	Perform compulsory diesel particulate filter regeneration.	(See COMPULSORY DIESEL PARTICULATE FILTER REGENERATION [SKYACTIV-D 2.2].)
11	Clear the DTCs.	(See OBD READ/CLEAR DIAGNOSTIC TEST RESULTS [SKYACTIV-D 2.2].)
12	Switch the ignition off.	—

Exhaust System Removal/Installation (2WD)

1. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
2. Remove in the order shown in the figure.
3. Remove the exhaust system insulator. (See Exhaust system insulator removal/installation.)
4. Install in the reverse order of removal.

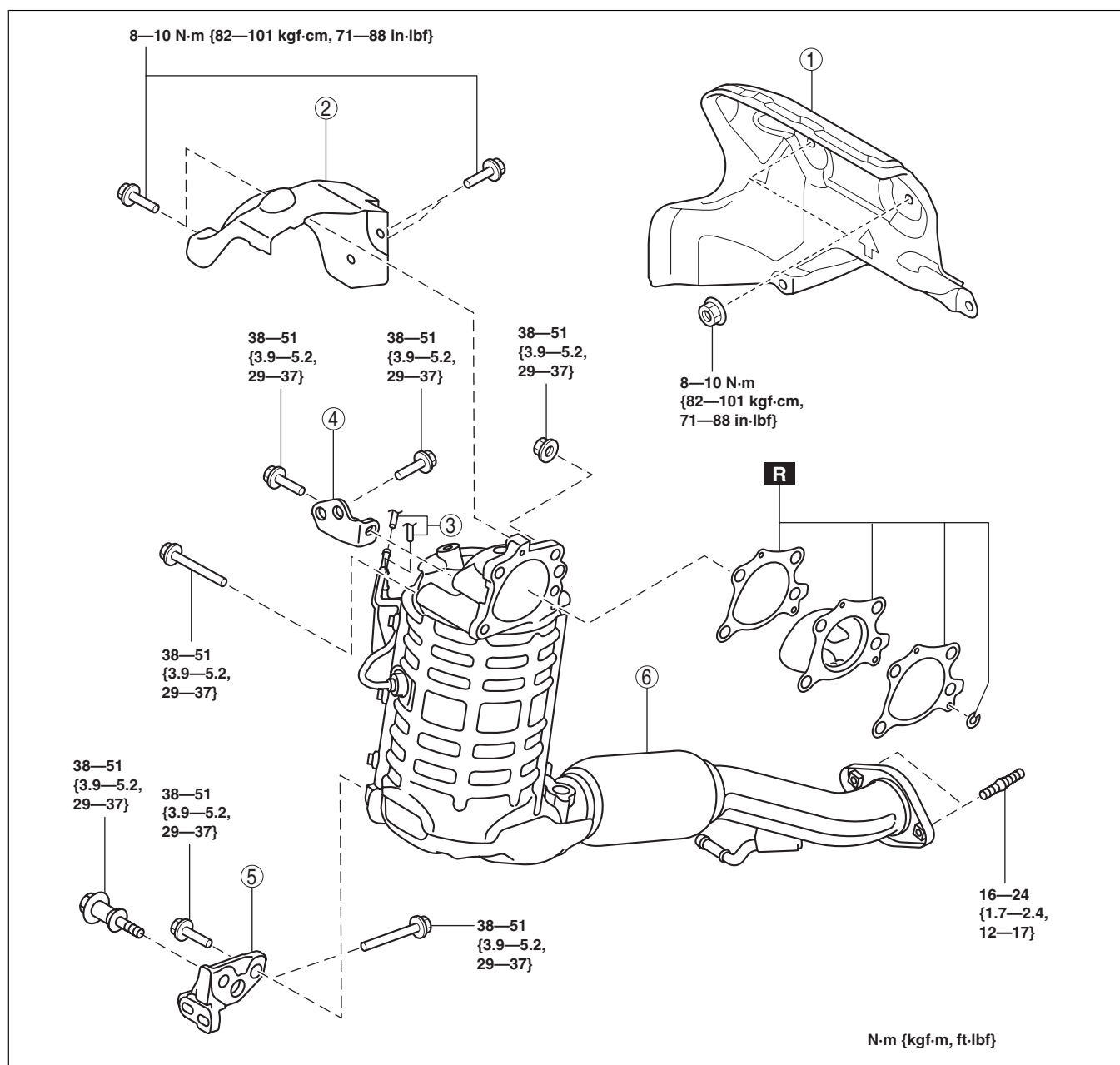
Step 1



1	Main silencer
2	Plate
3	Brace bar (See Brace bar removal note.)

4	Tunnel member
5	Middle pipe

Step 2

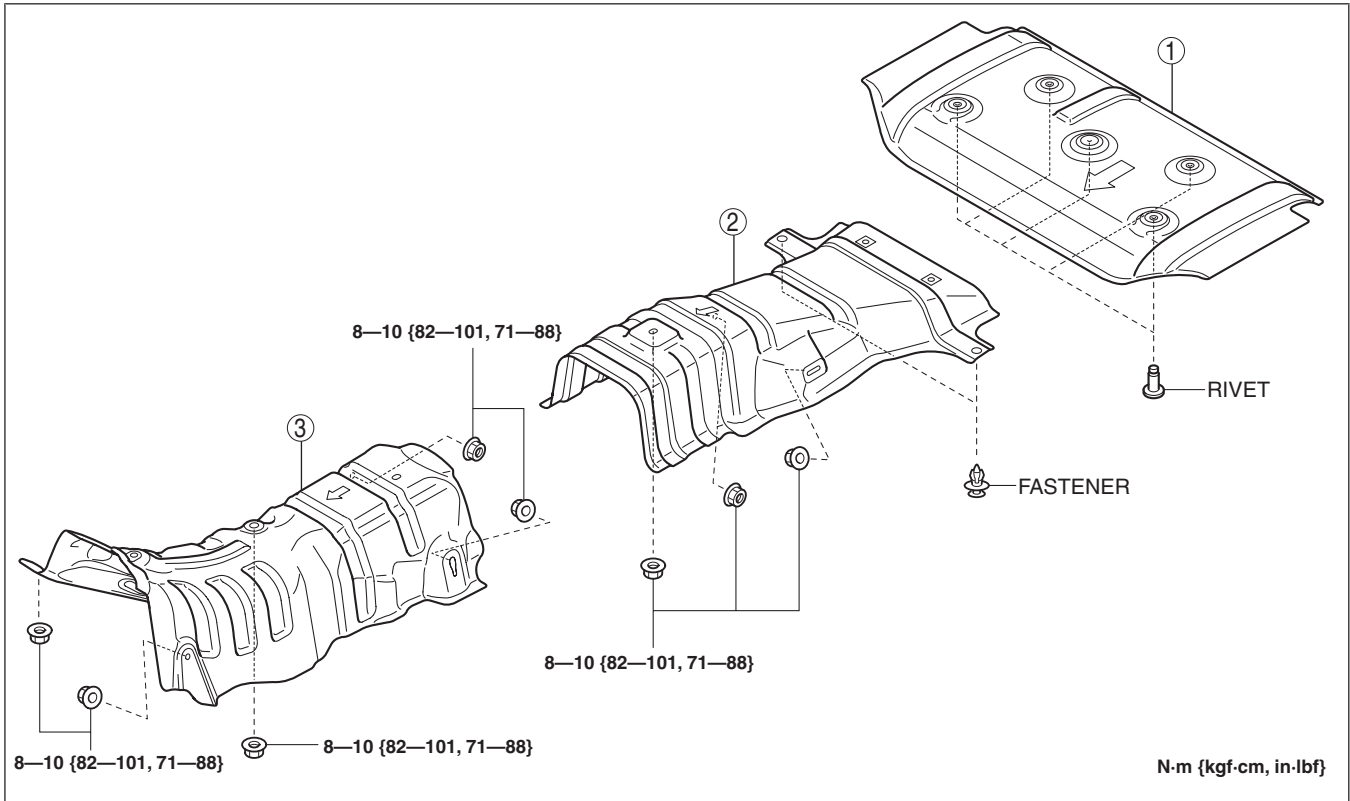


1	Insulator (See Insulator removal note.)
2	Catalytic converter insulator (See Catalytic converter insulator installation note.)
3	Exhaust hose
4	Catalytic converter upper bracket
5	Catalytic converter lower bracket (See Catalytic converter lower bracket removal note.) (See Catalytic converter bracket installation note.)

6	Catalytic converter (See Catalytic converter removal note.) (See Catalytic converter installation note.) (See Operation After Replacing Catalytic Converter.)
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Exhaust system insulator removal/installation

1. Remove in the order shown in the figure.
2. Install in the reverse order of removal.



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1	Insulator (rear) (See Insulator (rear) removal note.)
2	Insulator (middle)
3	Insulator (front)

Brace bar removal note

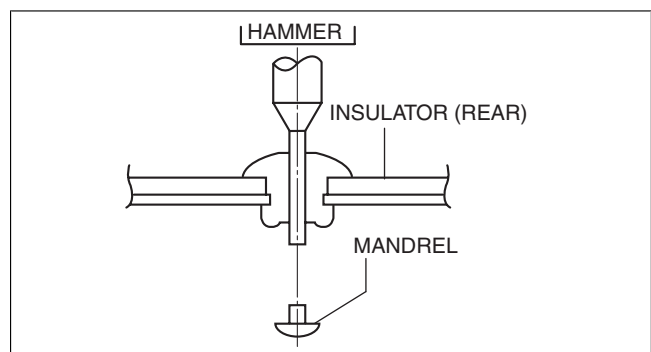
1. Remove the floor and cover. (See FLOOR UNDER COVER REMOVAL/INSTALLATION.)
2. Remove the brace bar.

Insulator (rear) removal note

Note

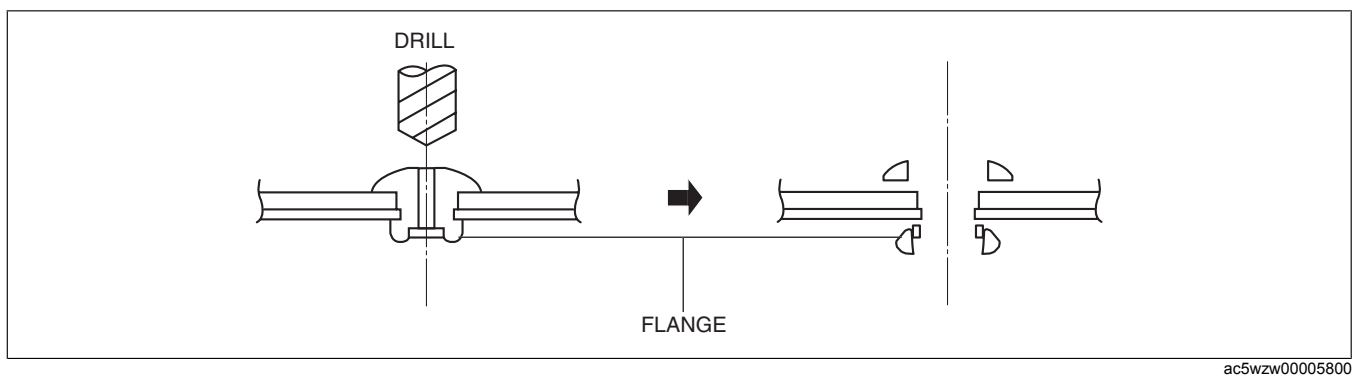
- If re-installed, use the same rivets.

1. Using a hammer and punch (diam. **2—2.8 mm {0.08—0.11 in}**), punch out the mandrel.



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2. Pull out and remove the flange using a drill (diam. **5 mm {0.2 in}**).



Insulator removal note

1. Remove the windshield wiper arm and blade. (See WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION.)
2. Remove the cowl grille. (See COWL GRILLE REMOVAL/INSTALLATION.)
3. Remove the windshield wiper motor and link. (See WINDSHIELD WIPER MOTOR AND LINK REMOVAL/INSTALLATION.)
4. Remove the cowl panel. (See COWL PANEL REMOVAL/INSTALLATION.)
5. Remove the insulator.

Catalytic converter lower bracket removal note

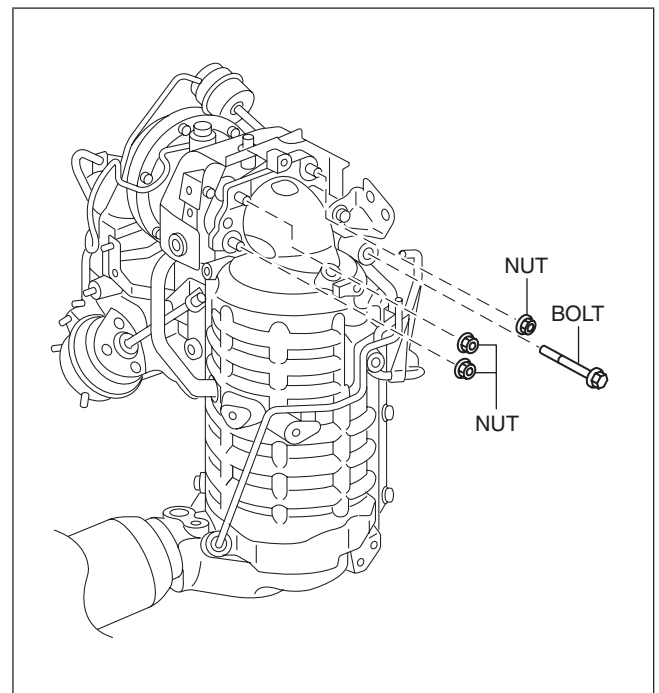
1. Remove the front crossmember. (See FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
2. Remove the catalytic converter lower bracket.

Catalytic converter removal note

1. Disconnect the exhaust gas temperature sensor No.2 connector.
2. Disconnect the exhaust gas sensor No.3 connector.
3. Remove the exhaust gas sensor No.3 wiring harness installation nuts. (See EXHAUST GAS TEMPERATURE SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
4. Disconnect the A/F sensor connector.
5. Remove the catalytic converter.

Catalytic converter installation note

1. Temporarily tighten bolt and nuts shown in the figure.

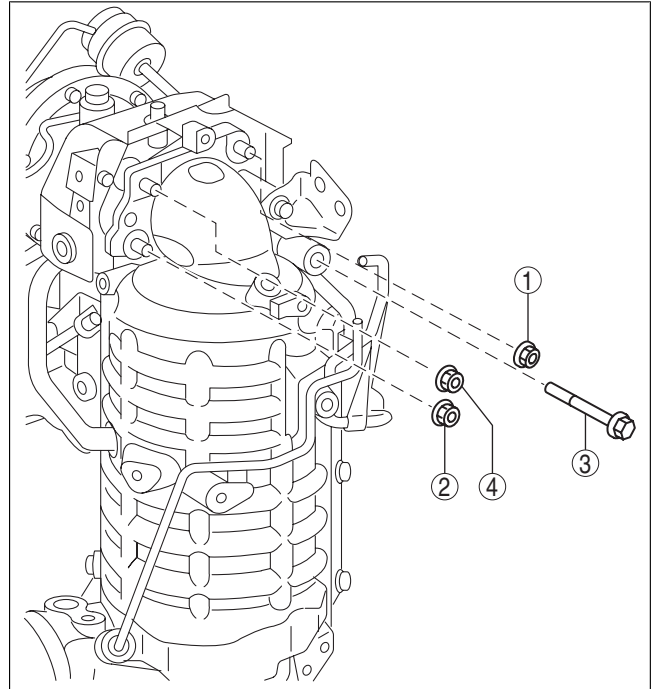


2. Tighten the bolt and nuts in the other shown in the figure.

Catalytic converter installation bolt and nuts tightening torque

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

3. All the conclusions check after attachment whether it is the right torque.



Catalytic converter bracket installation note

1. Temporarily tighten bolts 1 and bolt 2 shown in the figure.
2. Tighten bolts 1 shown in the figure.

Catalytic converter upper bracket installation bolt (engine side) tightening torque

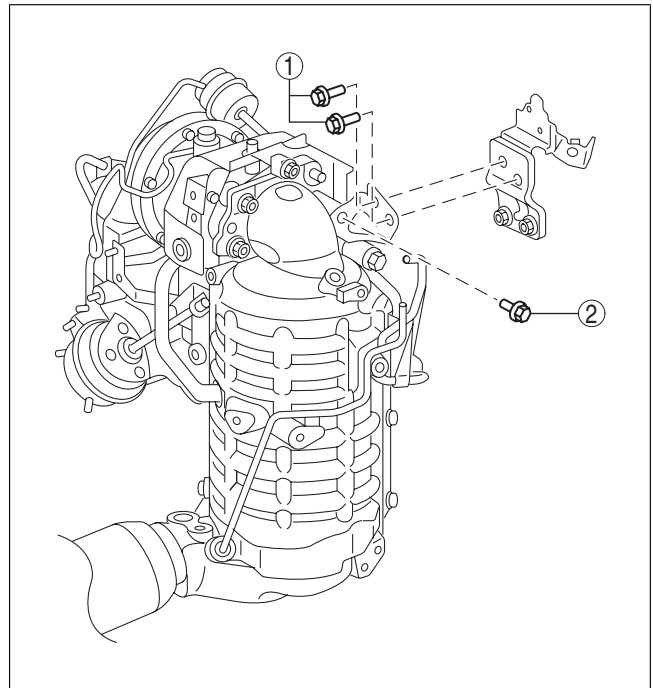
38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

3. Tighten bolts 2 shown in the figure.

Catalytic converter upper bracket installation bolt (catalytic converter side) tightening torque

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

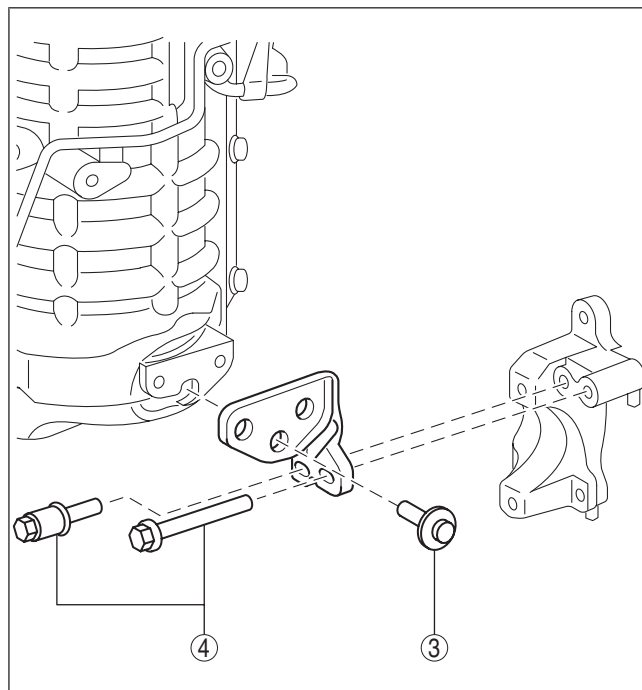
4. All the conclusions check after attachment whether it is the right torque.



5. Temporarily tighten bolts 3 and bolt 4 shown in the figure.
6. Tighten the bolts in the order shown in the figure.

**Catalytic converter lower bracket installation
bolt tightening torque**

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}



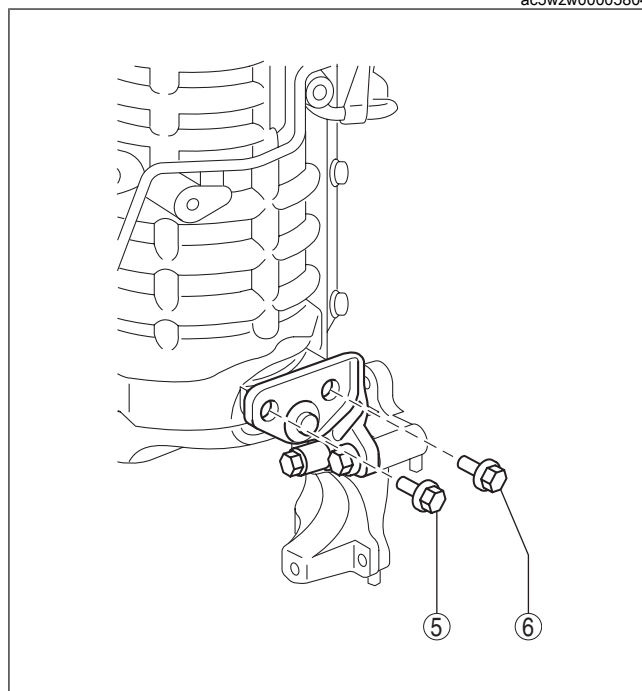
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7. Temporarily tighten bolts 5 and bolt 6 shown in the figure.
8. Tighten the bolts in the order shown in the figure.

**Catalytic converter lower bracket installation
bolt tightening torque**

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

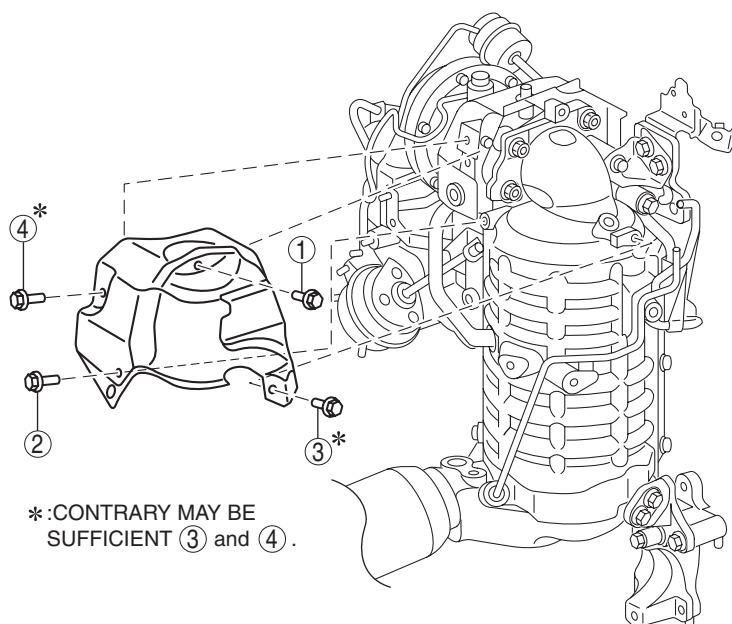
9. All the conclusions check after attachment whether it is the right torque.



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Catalytic converter insulator installation note

1. Temporarily tighten the catalytic converter insulator installation bolts.
2. Tighten the bolts in the order shown in the figure.



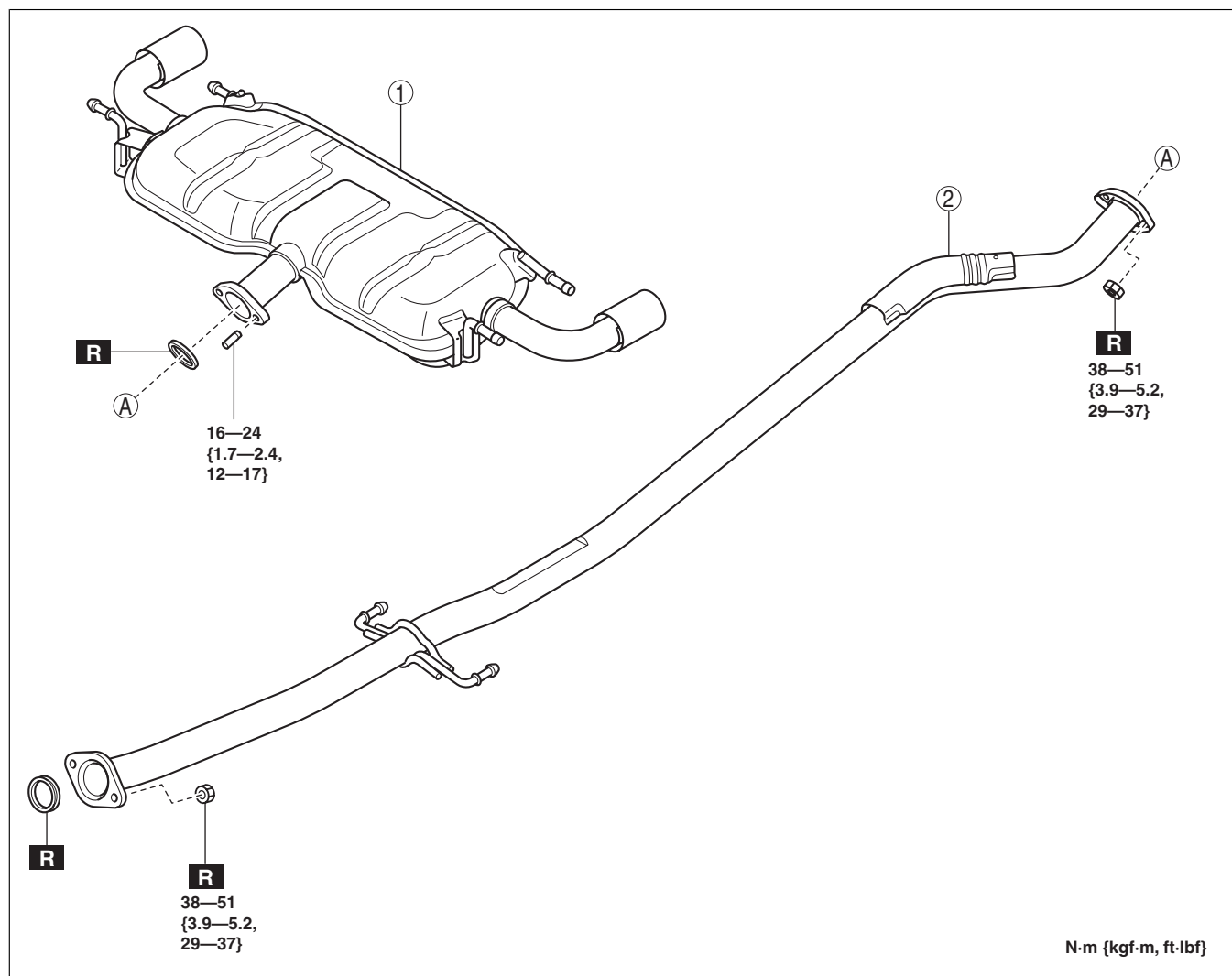
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Catalytic converter insulator installation bolt tightening torque
8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}

Exhaust System Removal/Installation (4WD)

1. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
2. Remove in the order shown in the figure.
3. Remove the exhaust system insulator. (See Exhaust system insulator removal/installation.)
4. Install in the reverse order of removal.

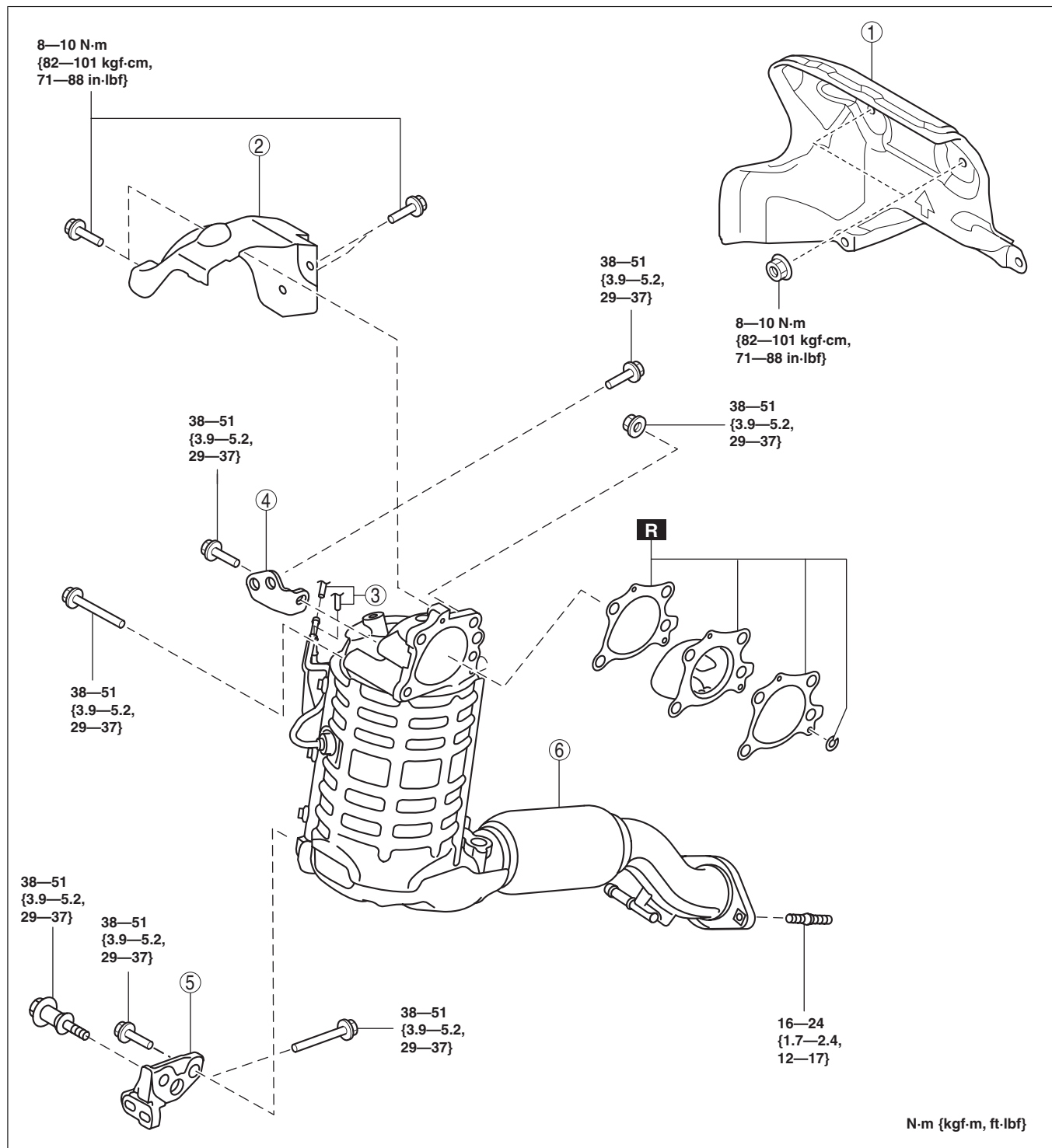
Step 1



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1	Main silencer
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2	Middle pipe
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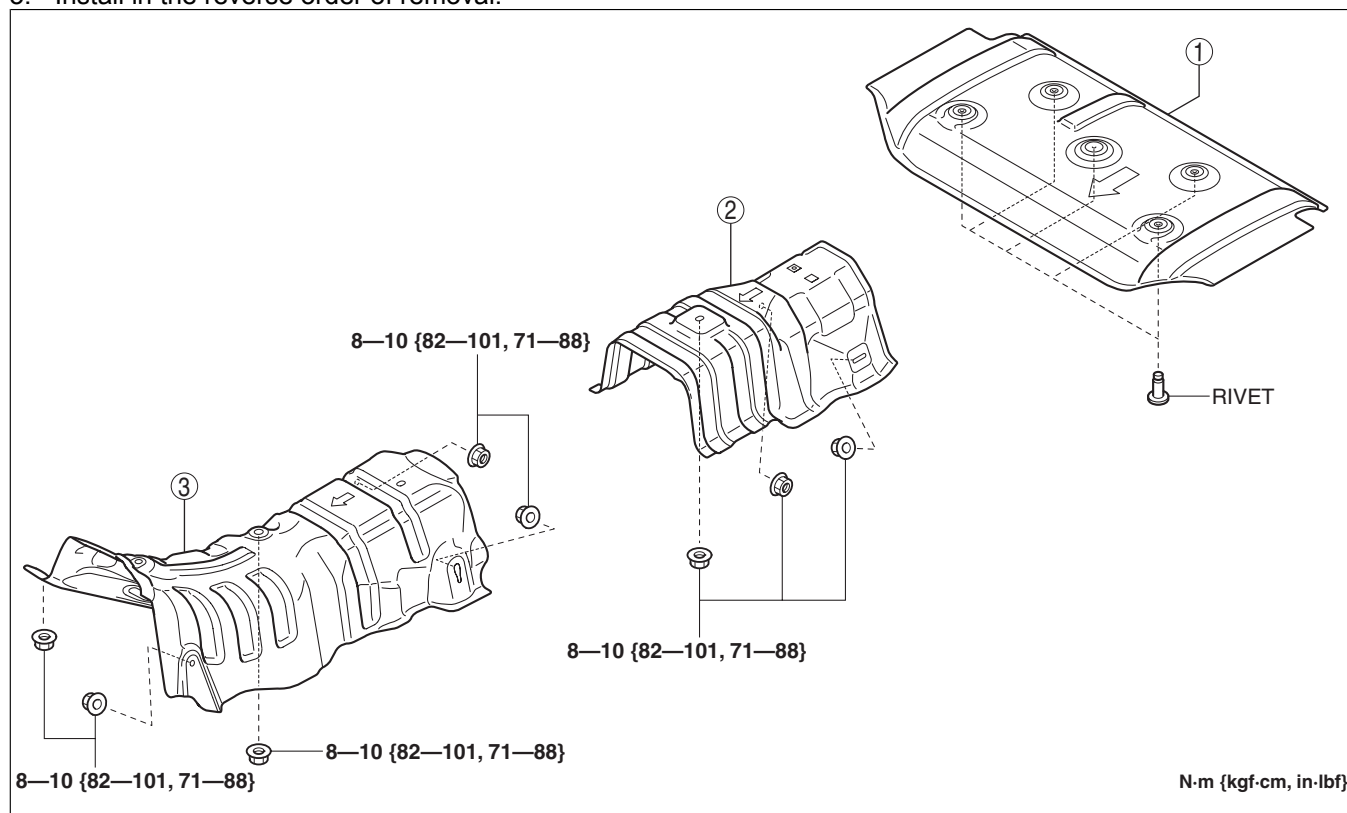
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1	Insulator (See Insulator removal note.)
2	Catalytic converter insulator (See Catalytic converter insulator installation note.)
3	Exhaust hose
4	Catalytic converter upper bracket
5	Catalytic converter lower bracket (See Catalytic converter lower bracket removal note.) (See Catalytic converter bracket installation note.)

6	Catalytic converter (See Catalytic converter removal note.) (See Catalytic converter installation note.) (See Operation After Replacing Catalytic Converter.)
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Exhaust system insulator removal/installation

1. Remove the propeller shaft. (See PROPELLER SHAFT REMOVAL/INSTALLATION.)
2. Remove in the order shown in the figure.
3. Install in the reverse order of removal.



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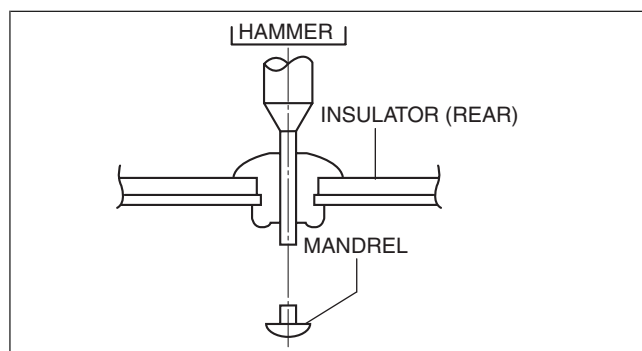
1	Insulator (rear) (See Insulator (rear) removal note.)
2	Insulator (middle)
3	Insulator (front)

Insulator (rear) removal note

Note

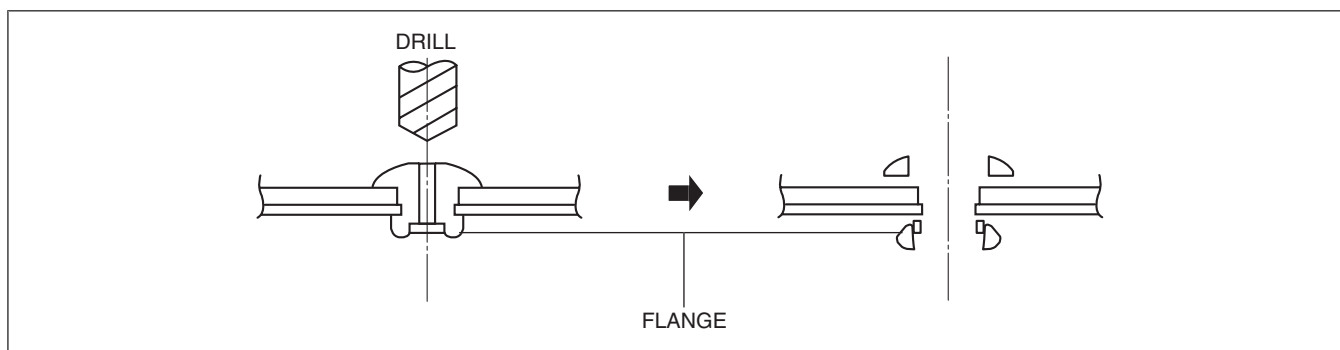
- If re-installed, use the same rivets.

1. Using a hammer and punch (diam. **2—2.8 mm {0.08—0.11}**), punch out the mandrel.



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2. Pull out and remove the flange using a drill (diam. **5 mm {0.2 in}**)



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Insulator removal note

1. Remove the windshield wiper arm and blade. (See WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION.)
2. Remove the cowl grille (See COWL GRILLE REMOVAL/INSTALLATION.).
3. Remove the windshield wiper motor and link. (See WINDSHIELD WIPER MOTOR AND LINK REMOVAL/INSTALLATION.)
4. Remove the cowl panel. (See COWL PANEL REMOVAL/INSTALLATION.)
5. Remove the insulator.

Catalytic converter lower bracket removal note

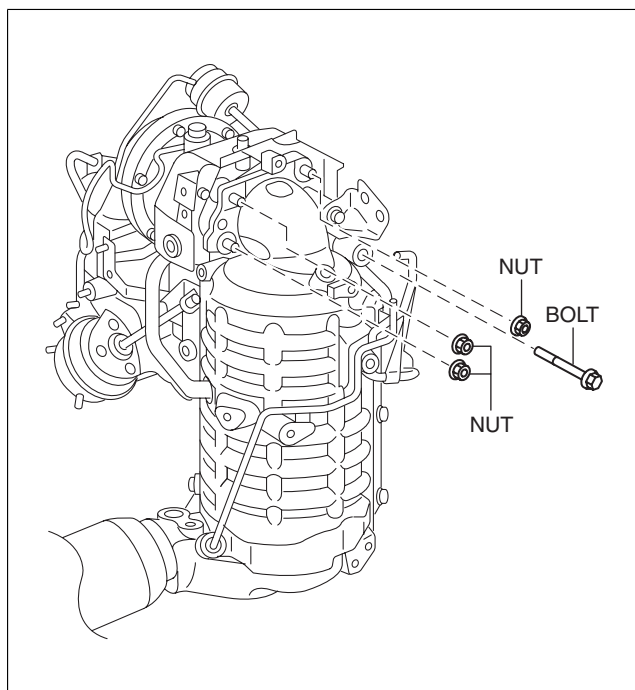
1. Remove the front crossmember. (See FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
2. Remove the catalytic converter lower bracket.

Catalytic converter removal note

1. Disconnect the exhaust temperature sensor No.2 connector.
2. Disconnect the exhaust temperature sensor No.3 connector.
3. Remove the exhaust temperature sensor No.3 wiring harness bracket installation nuts. (See EXHAUST GAS TEMPERATURE SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
4. Disconnect the A/F sensor connector.
5. Remove the catalytic converter.

Catalytic converter installation note

1. Temporarily tighten bolt and nuts shown in the figure.



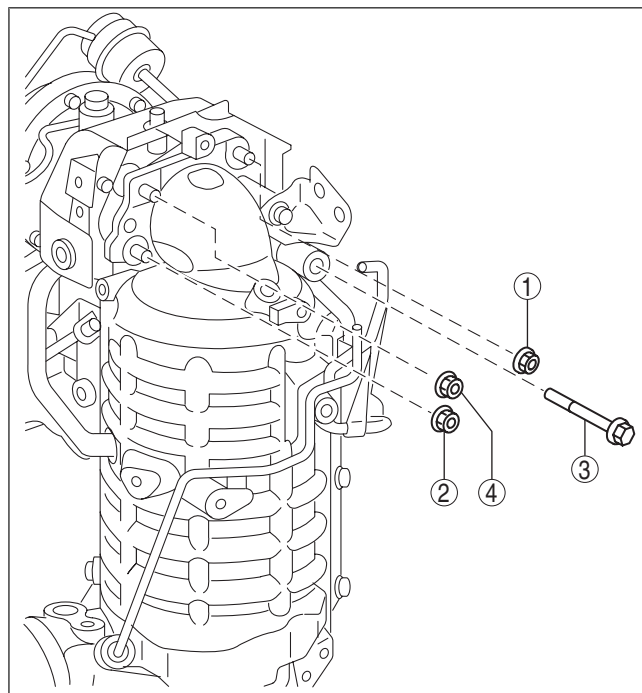
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2. Tighten the bolt and nuts in the other shown in the figure.

Catalytic converter installation bolt and nuts tightening torque

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

3. All the conclusions check after attachment whether it is the right torque.



Catalytic converter bracket installation note

1. Temporarily tighten bolts 1 and bolt 2 shown in the figure.
2. Tighten bolts 1 shown in the figure.

Catalytic converter upper bracket installation bolt (engine side) tightening torque

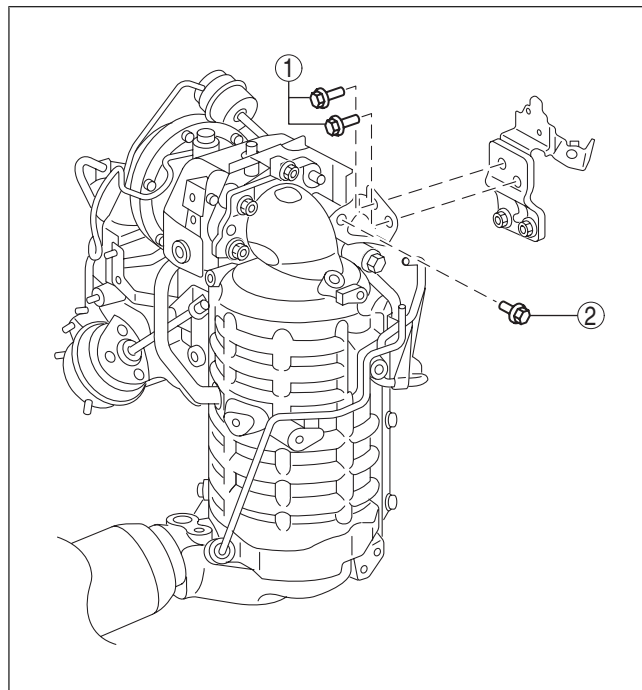
38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

3. Tighten bolts 2 shown in the figure.

Catalytic converter upper bracket installation bolt (catalytic converter side) tightening torque

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

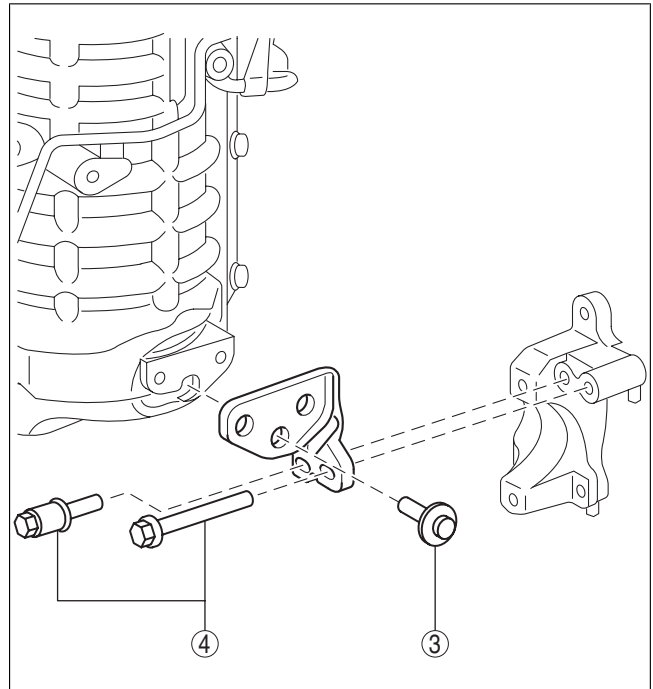
4. All the conclusions check after attachment whether it is the right torque.



5. Temporarily tighten bolts 3 and bolt 4 shown in the figure.
6. Tighten the bolts in the order shown in the figure.

**Catalytic converter lower bracket installation
bolt tightening torque**

38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

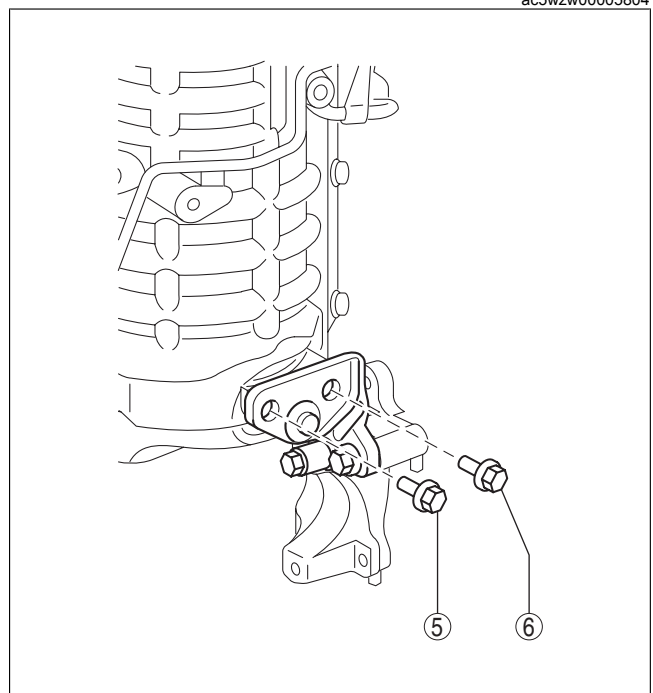


7. Temporarily tighten bolts 5 and bolt 6 shown in the figure.
8. Tighten the bolts in the order shown in the figure.

**Catalytic converter lower bracket installation
bolt tightening torque**

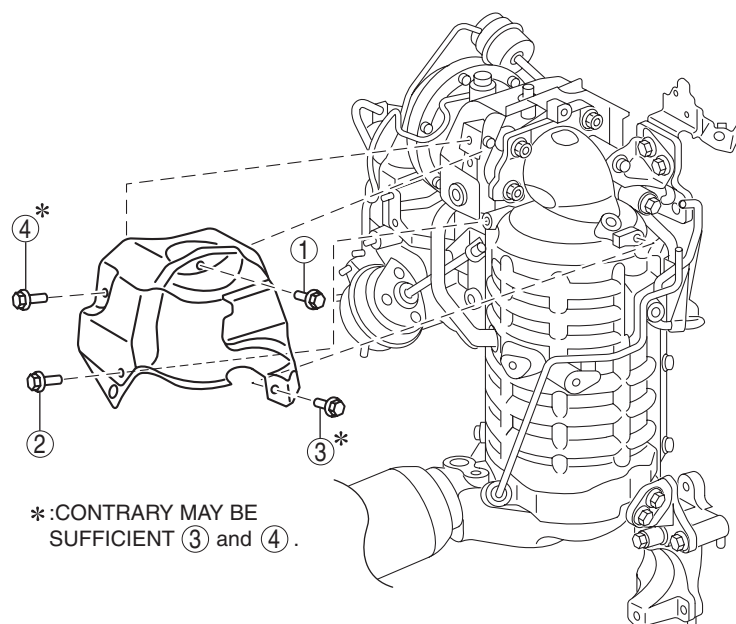
38—51 N·m {3.9—5.2 kgf·m, 29—37 ft·lbf}

9. All the conclusions check after attachment whether it is the right torque.



Catalytic converter insulator installation note

1. Temporarily tighten the catalytic converter insulator installation bolts.
2. Tighten the bolts in the order shown in the figure.



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Catalytic converter insulator installation bolt tightening torque
8—10 N·m {82—101 kgf·cm, 71—88 in·lbf}