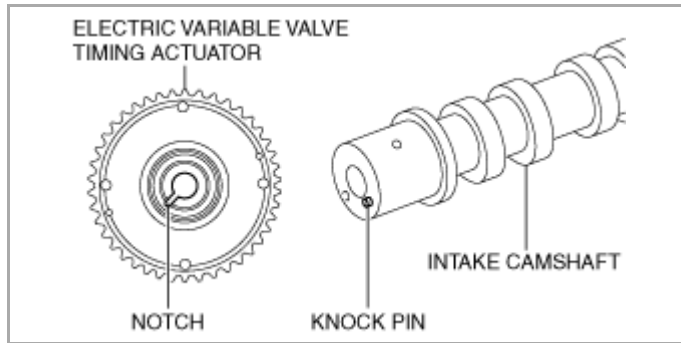


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2004 MAZDA RX-8 OEM Service and Repair Workshop Manual

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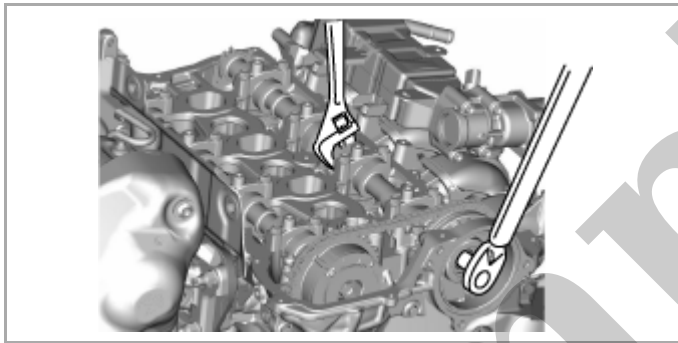


am3uuw00009045

Note

- Adjust the knock pin with the notch while adjusting the knock pin position by rotating the camshaft.

6. Hold the intake camshaft using a wrench on the cast hexagon, and tighten the electric variable valve timing actuator installation bolt.



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Tightening torque

102–114 N·m {10.5–11.6 kgf·m, 76–84 ft·lbf}

Timing Chain Installation Note

1. Install the chain guide (No.1).

Tightening torque

8–11 N·m {82–112 kgf·cm, 71–97 in·lbf}

2. Remove the bolt securing the tensioner arm and apply tension to the timing chain.

3. Rotate the crankshaft clockwise two turns and verify that the valve timing is correct.

Note

- The timing mark of SKYACTIV-G 2.5T is not completely parallel with the upper surface of the cylinder head.

HYDRAULIC LASH ADJUSTER (HLA) INSPECTION [SKYACTIV-G 2.5T]

SM2897198

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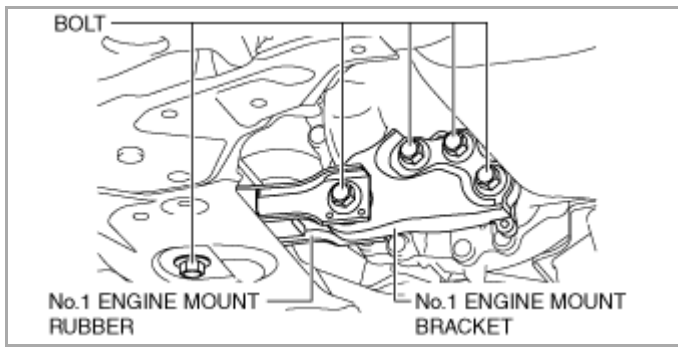
HLA Troubleshooting

Item	Occurrence	Possible cause	Action
1	After replacing oil, sound occurs when starting engine	Oil shortage in oil passage	• Maintain the engine speed between 2,000 to 3,000 rpm for approx. 2 s and 10 min *, and verify that the sound disappears.
2	Sound occurs at instant when engine is started on vehicle left for 1 day		
3	Starter cranked for 3 s or more and sound occurs directly after engine is started	HLA oil shortage	— If the sound disappears, the HLA is normal. — If the sound does not disappear, go to item 5.
4	Sound occurs directly after engine is started with newly replaced HLA		
5	Sound occurs continuously for 10 min or more	Insufficient oil pressure	• Inspect the oil pressure. (See OIL PRESSURE INSPECTION [SKYACTIV-G 2.5T].) — If less than the specification, inspect each part of the engine.
		HLA malfunction	• Inspect the HLA. (See HLA Inspection.)
6	Sound occurs during idling after high-speed driving	Incorrect engine oil level	• Inspect the engine oil level. (See ENGINE OIL LEVEL INSPECTION [SKYACTIV-G 2.5T].)
		Engine oil deterioration	• Replace the engine oil. (See ENGINE OIL REPLACEMENT [SKYACTIV-G 2.5T].)

*: Period of time engine oil flows to the HLA, this value includes tolerance caused by the ambient temperature and the oil used.

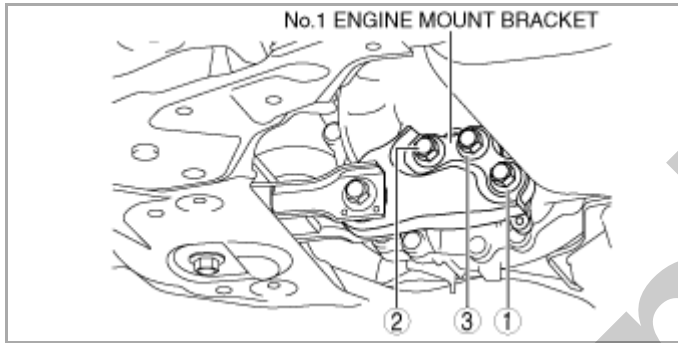
HLA Inspection

1. Disconnect the negative battery terminal. (See **NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.**)
2. Remove the plug hole plate. (See **PLUG HOLE PLATE REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].**)
3. Remove the ignition coil/ion sensors. (See **IGNITION COIL/ION SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].**)
4. Remove the cylinder head cover. (See **TIMING CHAIN REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].**)
5. Press the rocker arm from above and verify that the HLA does not drop.



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2.Tighten the No.1 engine mount bracket installation bolts in the order shown in the figure.

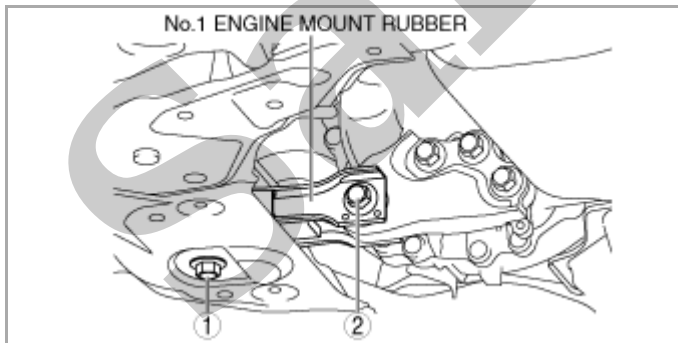


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Tightening torque

84–98 N·m {8.6–9.9 kgf·m, 62–72 ft·lbf}

3.Tighten the No.1 engine mount rubber installation bolts in the order shown in the figure.

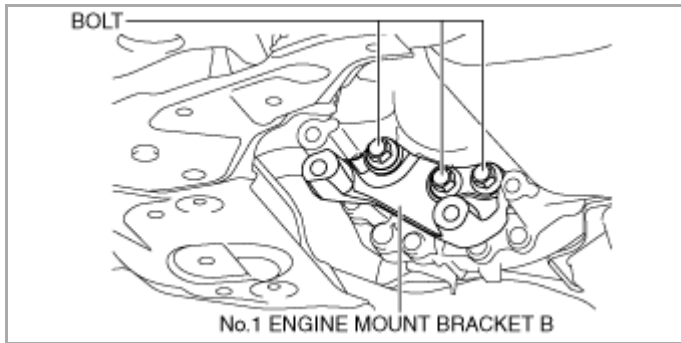


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Tightening torque

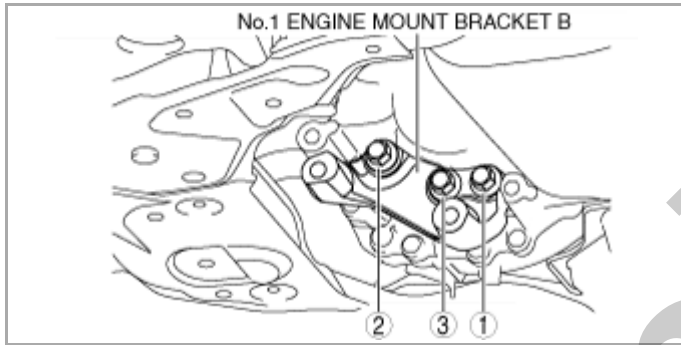
Installation position	Tightening torque
1	141–172 N·m {15–17 kgf·m, 104–126 ft·lbf}
2	130–164 N·m {14–16 kgf·m, 96–120 ft·lbf}

No.1 Engine Mount (AWD)



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2. Tighten the No.1 engine mount bracket B installation bolts in the order shown in the figure.



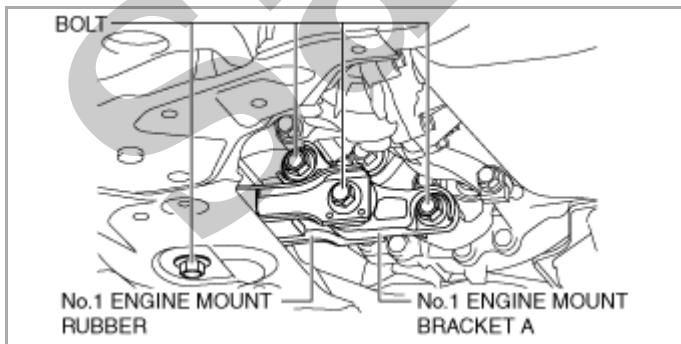
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Tightening torque

131–153 N·m {14–15 kgf·m, 97–112 ft·lbf}

3. Install the transfer. (See [TRANSFER REMOVAL/INSTALLATION \[GW6AX-EL \(SKYACTIV-G 2.5T\)\]](#).)

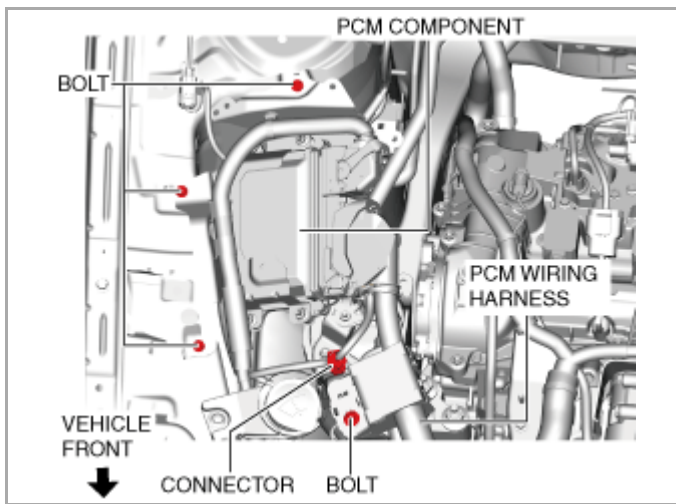
4. Install the No.1 engine mount bracket A and No.1 engine mount rubber, and temporarily tighten the bolts shown in the figure.



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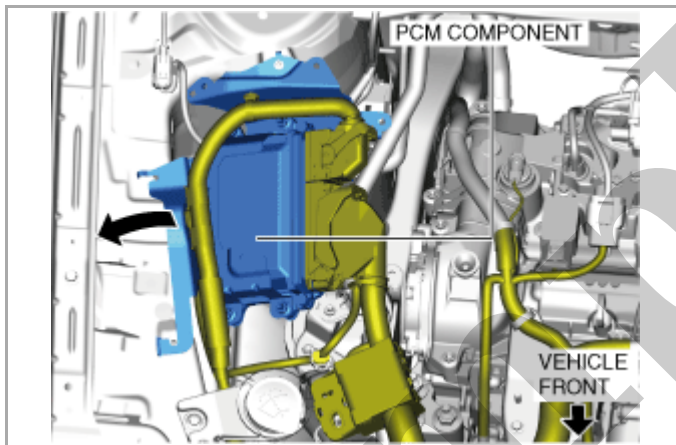
5. Tighten the No.1 engine mount bracket A installation bolts to the specified tightening torque.

(1) Remove the bolts and connector shown in the figure.



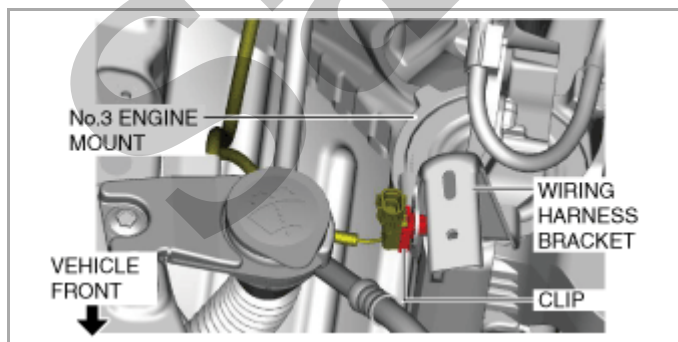
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(2) Move the PCM component in the direction of the arrow shown in the figure and set it aside with the PCM connectors connected.



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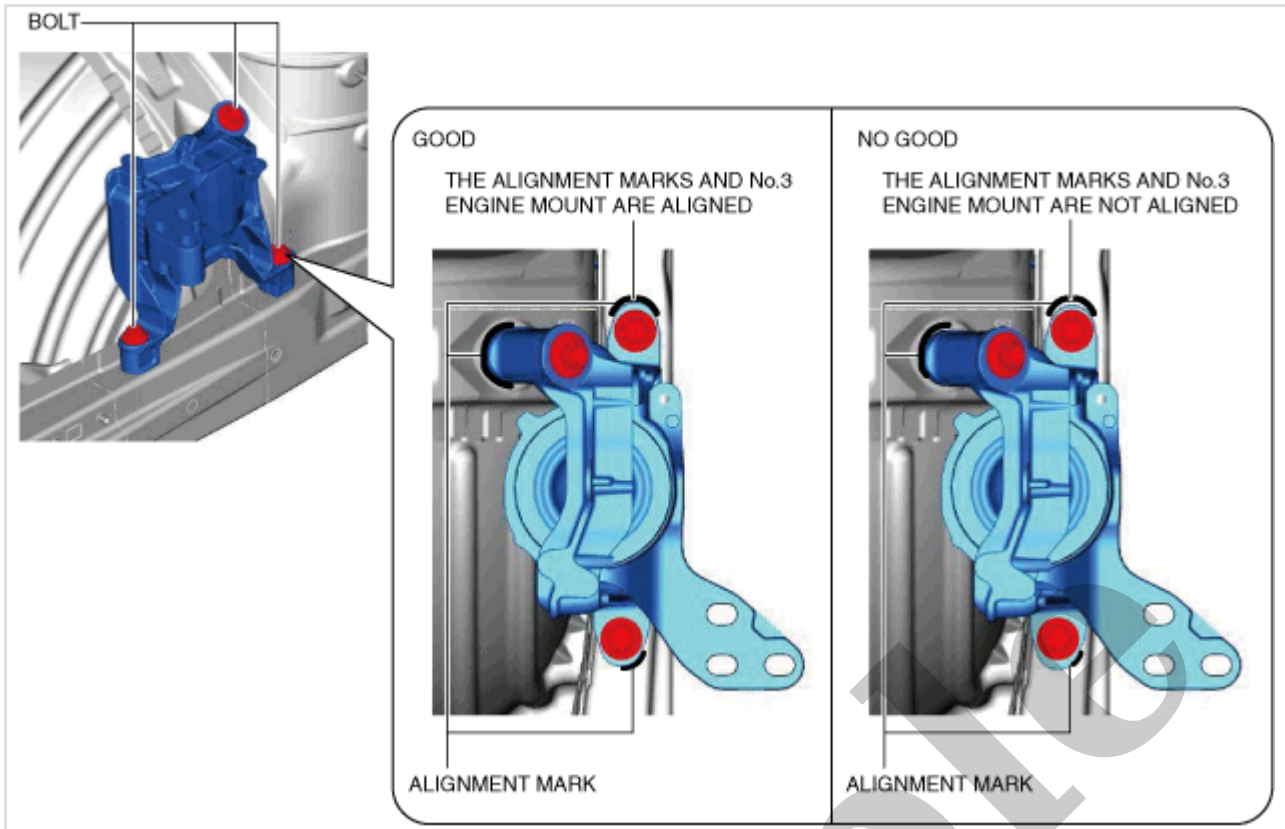
3. Disconnect the clip shown in the figure.



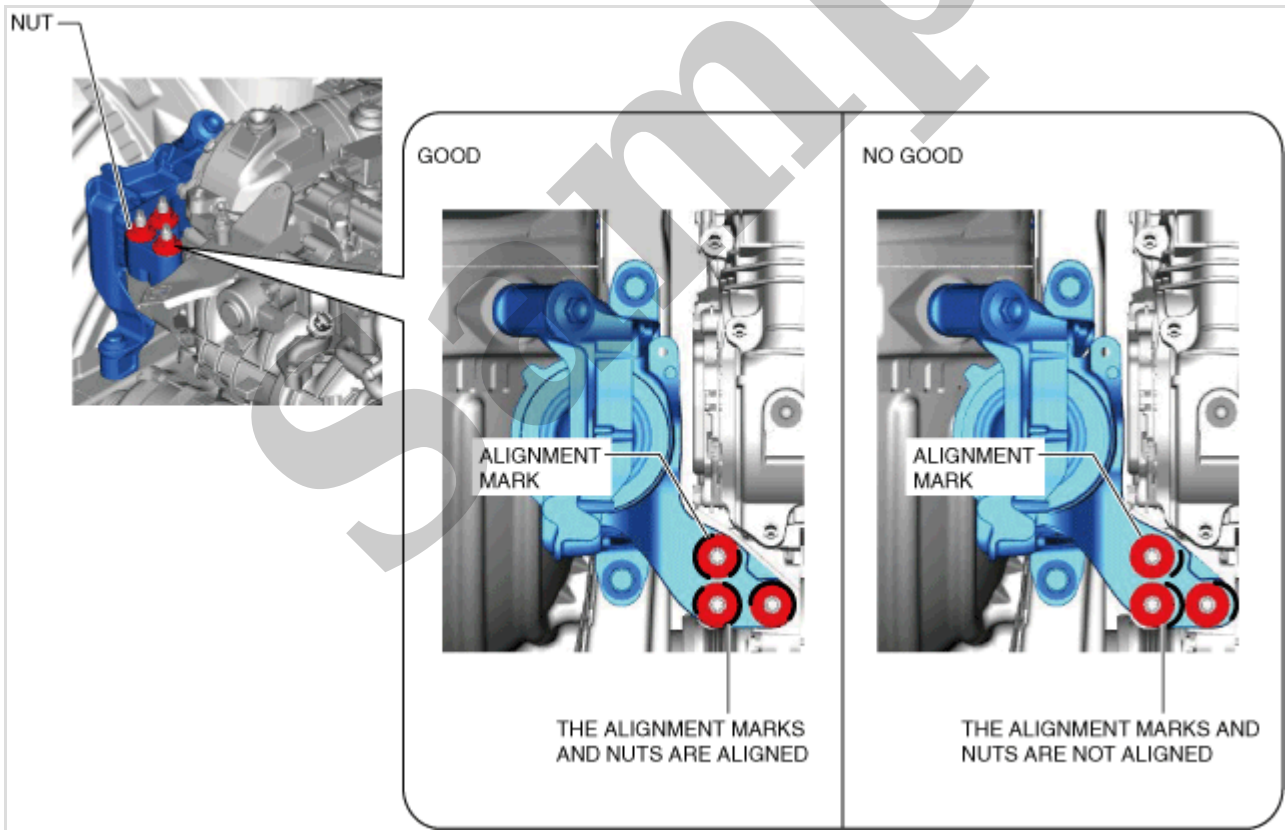
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4. Remove the bolts and nut shown in the figure and remove the wiring harness bracket.

(1)Align the alignment marks on the body side and No.3 engine mount, and temporarily tighten the bolts shown in the figure.



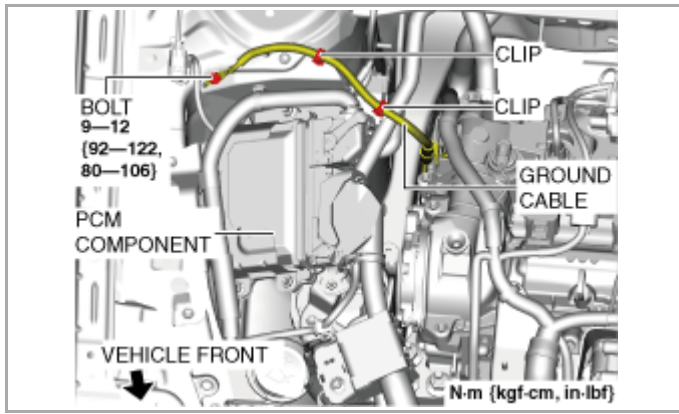
(2)Temporarily tighten the nuts shown in the figure while aligning the alignment marks of the No.3 engine mount and nuts.



Note

- If the alignment marks are not aligned, align the alignment marks while slightly moving the engine and temporarily tighten the nuts.

3.Tighten the No.3 engine mount installation bolts and nuts in the order shown in the figure.



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No.4 Engine Mount

Caution

• Slots have been adopted for the No.4 engine mount bracket installation holes. If the No.4 engine mount bracket is deviated from the original position when installing the No.4 engine mount bracket, engine noise or vibration could increase. Before removing the No.4 engine mount bracket, place alignment marks on the No.4 engine mount bracket so that they can be assembled to the same positions as before removal.

1. Disconnect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))

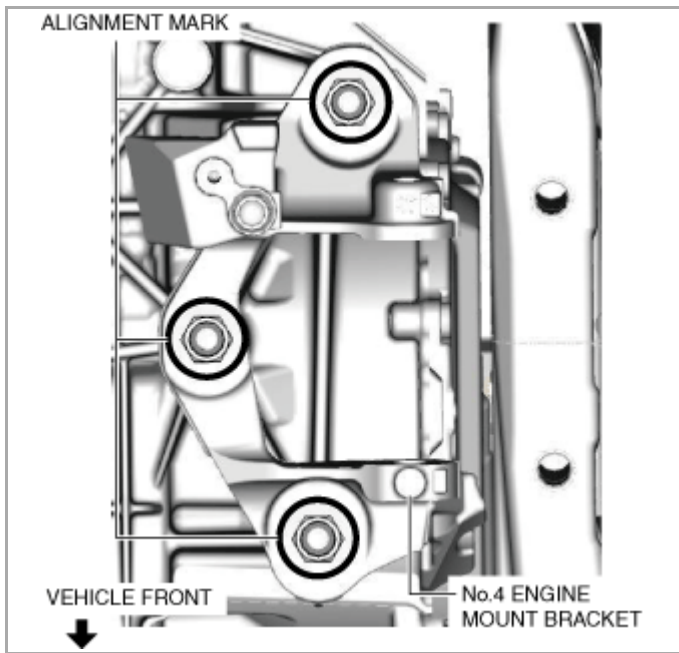
2. Remove the following parts as a single unit: (See [INTAKE-AIR SYSTEM REMOVAL/INSTALLATION \[SKYACTIV-G 2.5T\].](#))

- Air hose
- Air cleaner cover
- Air cleaner element
- Air cleaner case
- Fresh-air duct

3. Remove the battery and battery tray. (See [BATTERY REMOVAL/INSTALLATION \[SKYACTIV-G 2.5T\].](#))

4. Remove in the order indicated in the table.

5. Install in the reverse order of removal.



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Note

- Paint so that the outline of the nut is framed on the bracket side.

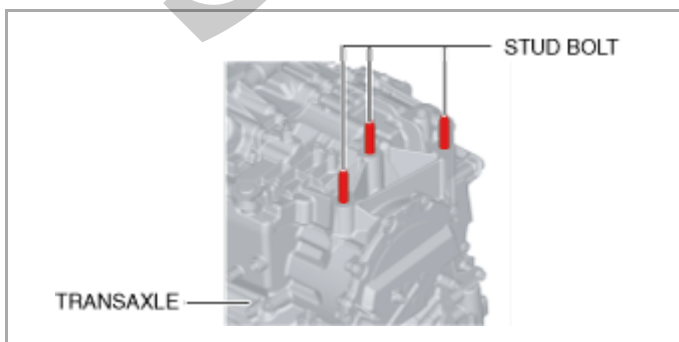
3.Remove the No.4 engine mount bracket.

No.4 engine mount bracket installation note

Note

- If the No.4 engine mount bracket is newly replaced, place alignment marks in the same locations as the part before the replacement.
- When loosening the nuts of the No.4 engine mount bracket, the transaxle stud bolts could also become loose.

1.Tighten the transaxle stud bolts.



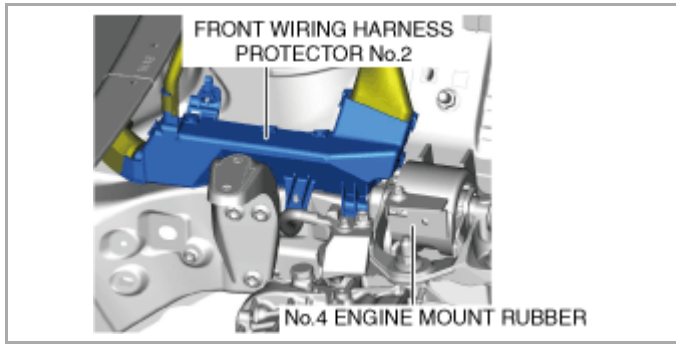
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Tightening torque

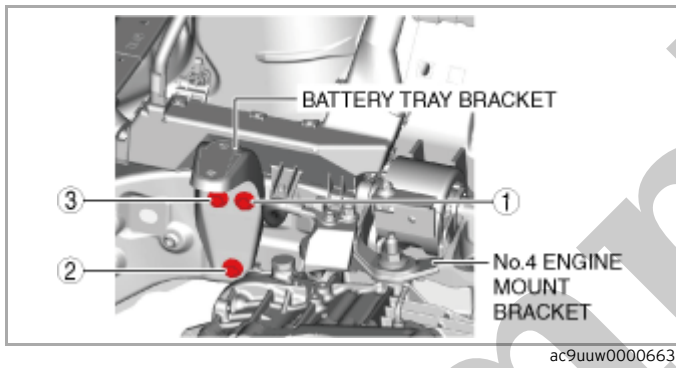
15–25 N·m {1.6–2.5 kgf·m, 12–18 ft·lbf}

2.Align the alignment marks on the No.4 engine mount bracket and nuts, and temporarily tighten the nuts shown in the figure.

5. Install the front wiring harness protector No.2. (See [RELAY AND FUSE BLOCK REMOVAL/INSTALLATION.](#))



6. Tighten the battery tray bracket installation bolts in the order shown in the figure.



Tightening torque

22–30 N·m {2.3–3.0 kgf·m, 17–22 ft·lbf}