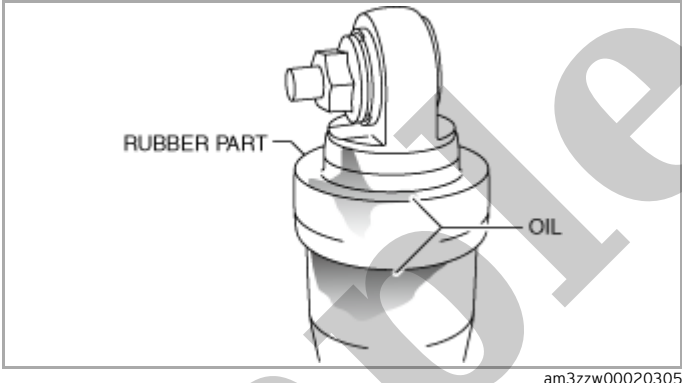


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FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

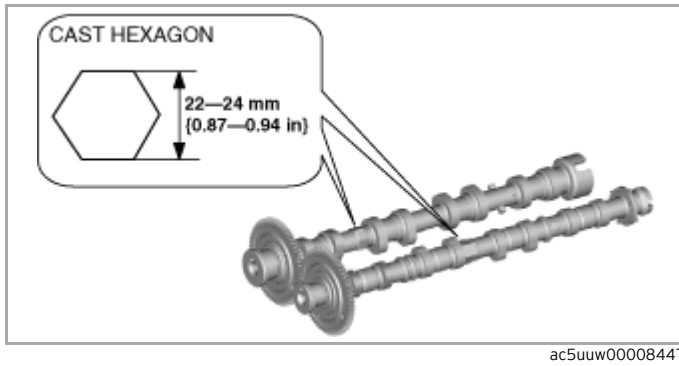
2005 MAZDA 6/Atenza Hatchback OEM Service and Repair Workshop Manual

[Go to manual page](#)

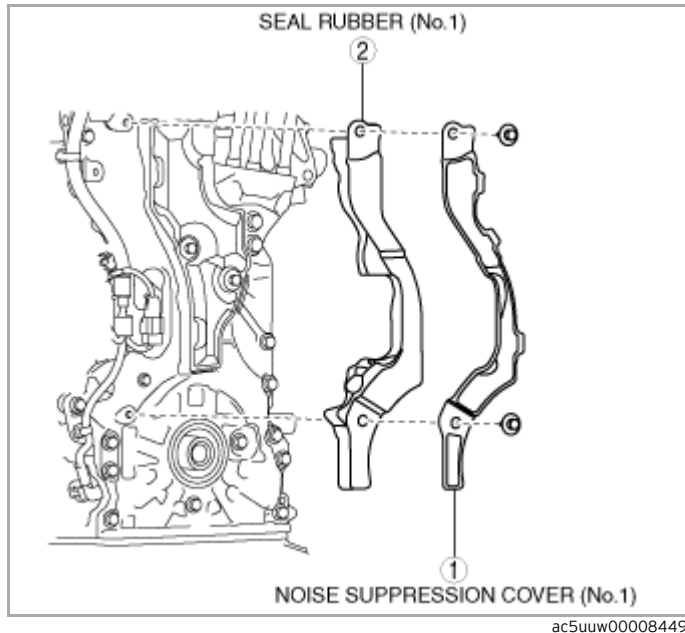
STEP	INSPECTION		ACTION
4	<p>PURPOSE: INSPECT CONDITION OF RUBBER PART OF DRIVE BELT AUTO TENSIONER</p> <ul style="list-style-type: none"> Is oil seeping out from the upper or lower side of the rubber part? 	<div>Yes</div> <div>No</div>	<p>Oil is leaking from upper area of rubber part.</p> <ul style="list-style-type: none"> The hydraulic pressure unit is normal therefore the inspection is complete. <p>Oil is leaking from lower area of rubber part.</p> <ul style="list-style-type: none"> Replace the drive belt auto tensioner due to a poor seal of the rubber part. (See DRIVE BELT AUTO TENSIONER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) <p>The hydraulic pressure unit is normal therefore the inspection is complete.</p>

Pulley Inspection

- Remove the generator drive belt. (See [DRIVE BELT REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
- Rotate the drive belt auto tensioner pulley by hand and verify that it rotates smoothly.
 - If it does not rotate smoothly, replace the drive belt auto tensioner. (See [DRIVE BELT AUTO TENSIONER REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
- Inspect the contact surface of the drive belt auto tensioner pulley belt and verify that the height difference is less than the maximum specification.
 - If it is maximum specification or more, replace the drive belt auto tensioner. (See [DRIVE BELT AUTO TENSIONER REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))



1. Disconnect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))
2. Remove the engine cover. (See [ENGINE COVER REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
3. Remove the fuel injectors. (See [FUEL INJECTOR REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
4. Remove the lower case. (See [LOWER CASE REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
5. Remove the vacuum pump. (See [VACUUM PUMP REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
6. Remove the supply pump. (See [SUPPLY PUMP REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
7. Remove the cylinder head cover. (See [TIMING CHAIN REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
8. Remove the CMP sensor. (See [CAMSHAFT POSITION \(CMP\) SENSOR REMOVAL/INSTALLATION \[SKYACTIV-D 2.2\].](#))
9. Remove the front splash shield (RH). (See [SPLASH SHIELD REMOVAL/INSTALLATION.](#))
10. Remove in the order indicated in the table.
11. Install in the reverse order of removal.
12. Start the engine and inspect the following:
 - Idle speed (See [ENGINE TUNE-UP \[SKYACTIV-D 2.2\].](#))



Timing Chain Removal Note

Caution

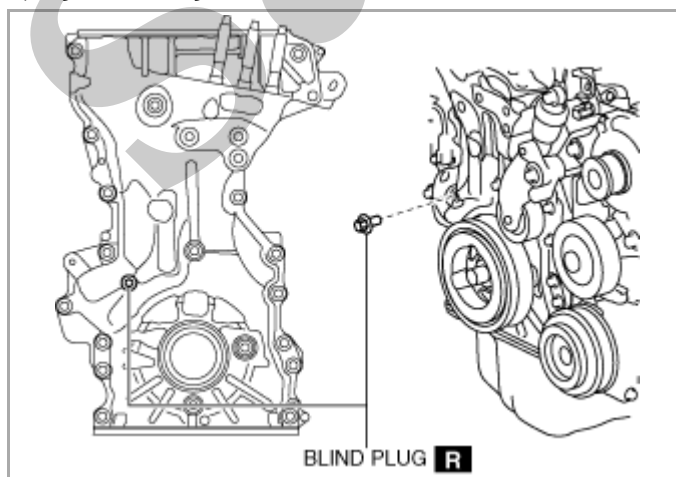
- Keep the timing chain and camshaft sprocket pulled up during and after the work in which it has been set aside from the exhaust camshaft. If the chain falls down, it may disengage from the sprocket on the crankshaft side and deviate, leading to valve timing deviation.
- After servicing, always verify the valve timing.

1. Release the tension on the timing chain using the following procedure:

Note

- Release the tension on the timing chain by securing the plunger of the timing chain tensioner through the service hole on the engine front cover.

(1) Remove the blind plug on the engine front cover service hole.

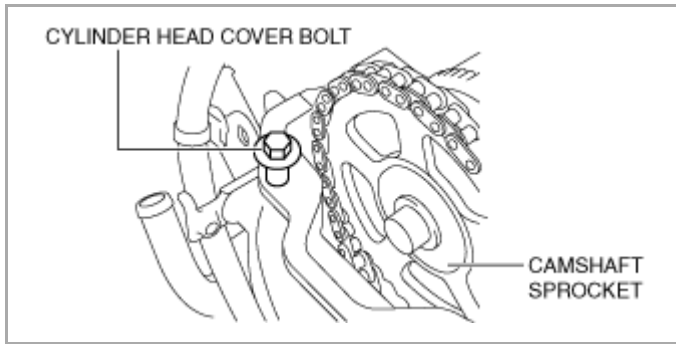


(2) Insert a wire with an approx. diameter of 1.4 mm {0.055 in} or a paper clip into the body hole of the timing chain tensioner through the service hole.

Note

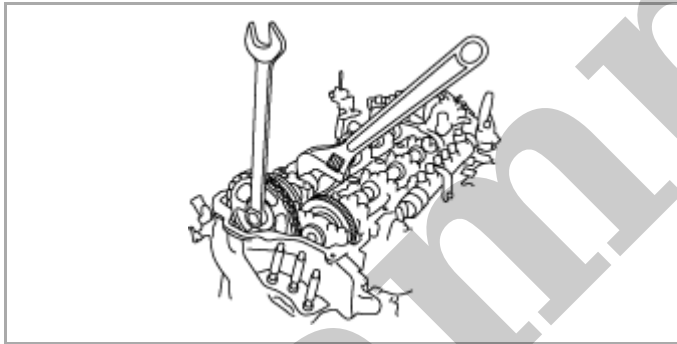
- The position in while the paint mark is placed is not restricted. The marked position is fine as long as visual verification is possible after assembly.

4. Temporarily install the cylinder head cover bolt to the position shown in the figure to use it for suspending the timing chain and camshaft sprocket.



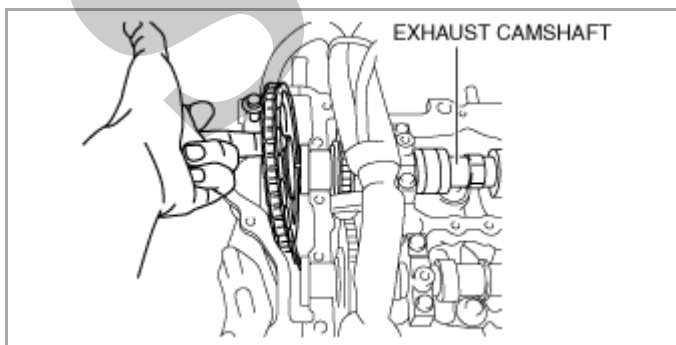
ac5wzw00005868

5. Hold the exhaust camshaft using a wrench on the cast hexagon and remove the camshaft sprocket installation bolt.



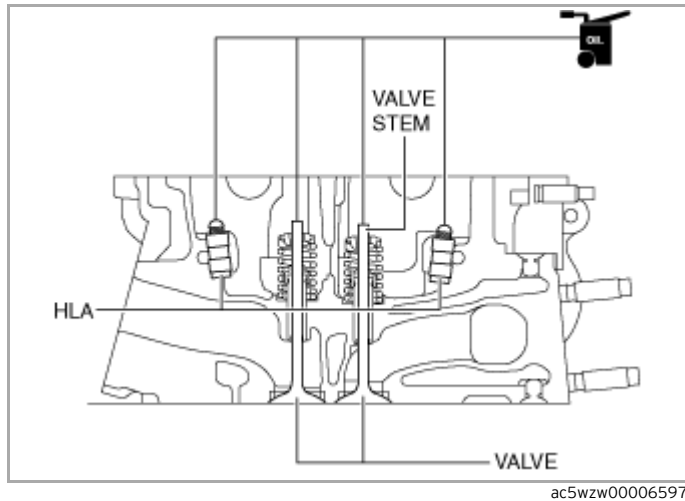
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6. Separate the camshaft sprocket and the exhaust camshaft while the timing chain is hung on the camshaft sprocket.



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7. Pull up the camshaft sprocket using a rope while the timing chain is hung on the camshaft sprocket and pulled it up as shown in the figure.

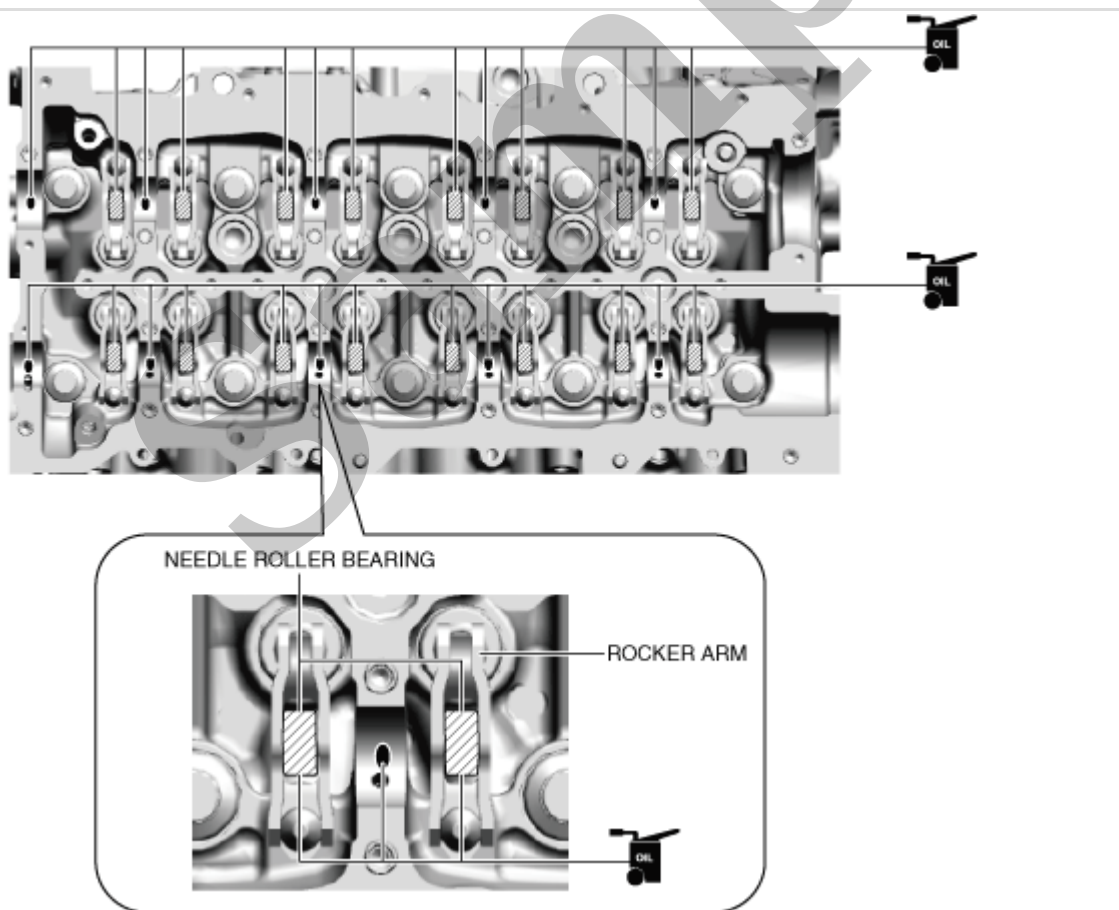


2. Install the rocker arms to the same positions as before removal.

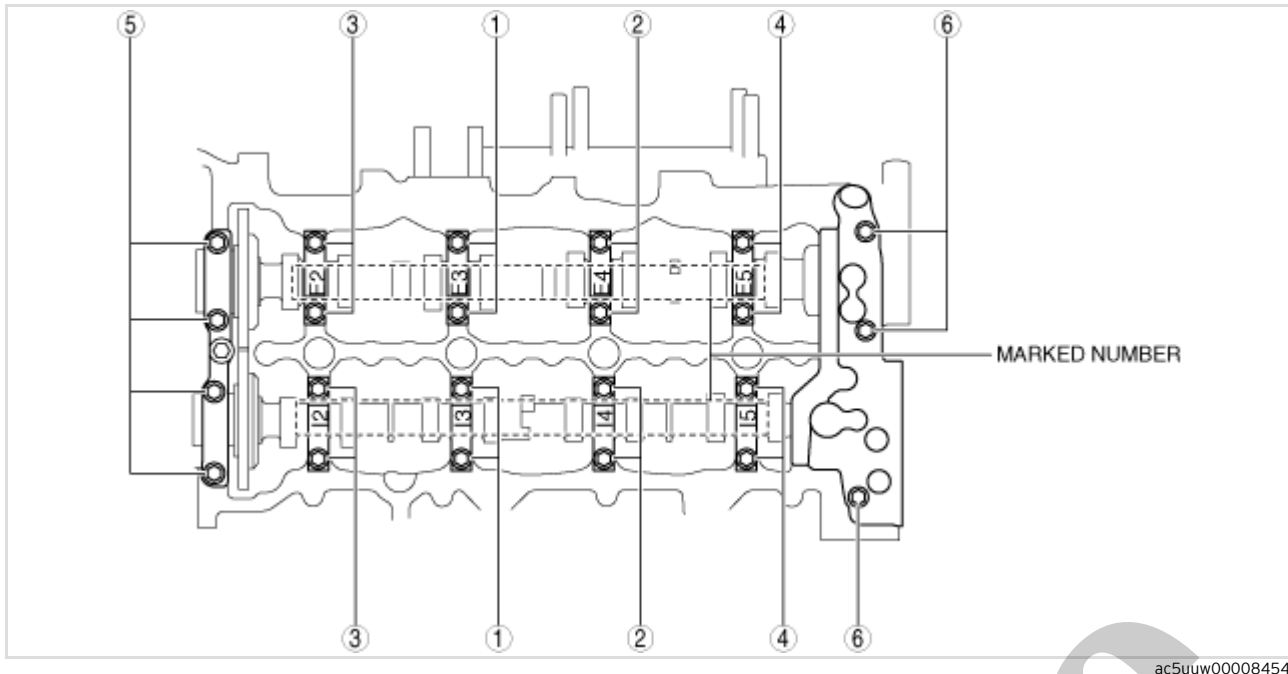
Camshaft Installation Note

1. Apply gear oil (SAE 90 or equivalent) or engine oil to the following locations.

- Each journal of the cylinder head
- Needle roller bearing of the rocker arm



2. Apply gear oil (SAE 90 or equivalent) or engine oil to the thrust surface (both surfaces front and back) of the front journal on each camshaft.



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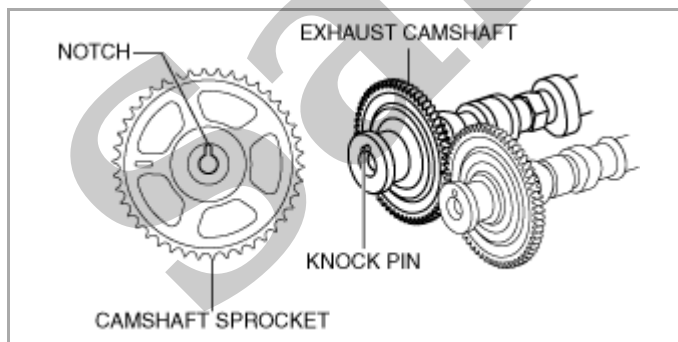
Tightening torque

Step 1: 3.0–6.0 N·m {31–61 kgf·cm, 27–53 in·lbf}

Step 2: 8–11 N·m {82–112 kgf·cm, 71–97 in·lbf}

Timing Chain Installation Note

1. Pull the timing chain and the camshaft sprocket and remove the suspending rope.
2. Align the knock pin on the end of the exhaust camshaft with the notch on the camshaft sprocket side, then assemble the sprocket.



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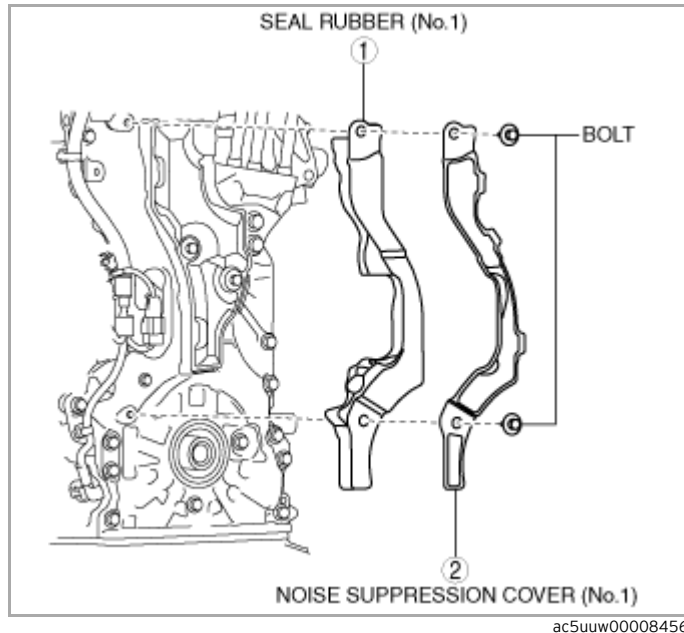
Note

- Align the knock pin and the notch while adjusting the knock pin position by rotating the camshaft.

3. Tighten the camshaft sprocket installation bolt using the following procedure:

(1) Temporarily tighten the camshaft sprocket installation bolt.

(2) Hold the exhaust camshaft using a wrench on the cast hexagon, and tighten the camshaft sprocket installation bolt.

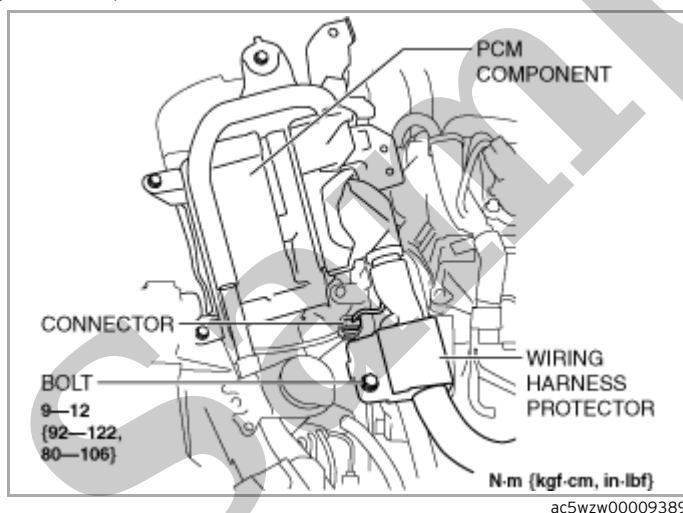


Tightening torque

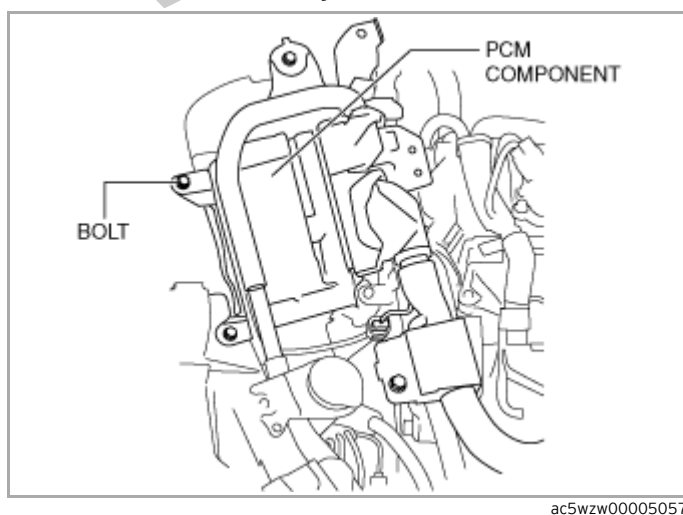
7–10 N·m {72–101 kgf·cm, 62–88 in·lbf}

2. Install the PCM component using the following procedure:

(1) Install the wiring harness protector and connector.



(2) Temporarily tighten the bolt shown in the figure.



(3) Tighten the PCM component installation bolts in the order shown in the figure.

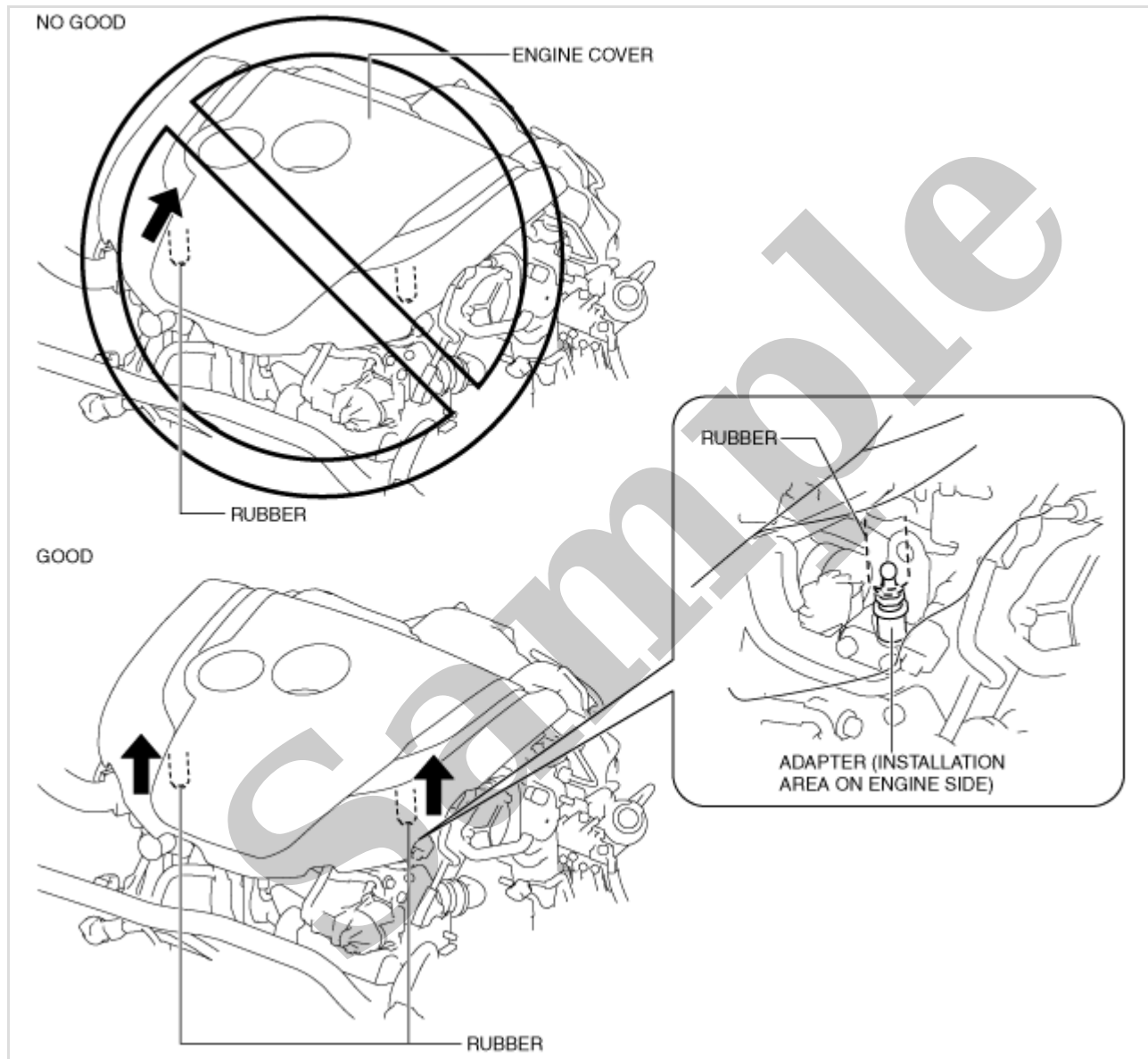
ENGINE COVER REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

SM2897216

id0110s580430

Caution

- If the rubber on only one side of the engine cover front is lifted up, it could damage the adapter at the location shown in the figure. When removing the engine cover, lift up the rubbers at the same time.



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Removal

1. Pull up the front part of the engine cover at the same time and remove the rubber from the adapter on the engine side.

HYDRAULIC LASH ADJUSTER (HLA) INSPECTION [SKYACTIV-D 2.2]

SM2897217

id0110s580500

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-D 2.2].) — 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-D 2.2].)
		Engine oil deterioration	• Replace the engine oil. (See ENGINE OIL REPLACEMENT [SKYACTIV-D 2.2].)

*: 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 engine cover. (See **ENGINE COVER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].**)
- 3.Remove the fuel injectors. (See **FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].**)
- 4.Remove the cylinder head cover. (See **TIMING CHAIN REMOVAL/INSTALLATION [SKYACTIV-D 2.2].**)
- 5.Press the rocker arm from above and verify that the HLA does not drop.
 - If the HLA drops, replace the HLA. (See **HYDRAULIC LASH ADJUSTER (HLA) REMOVAL/INSTALLATION [SKYACTIV-D 2.2].**)