

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

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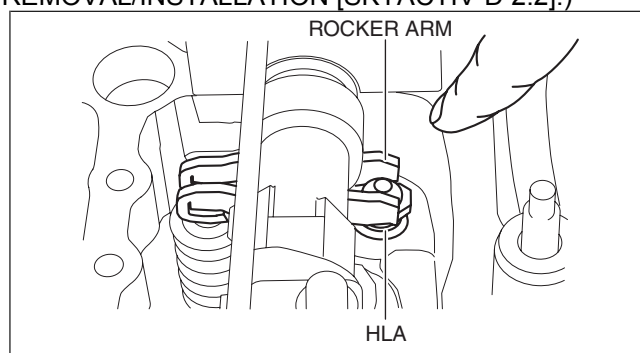
### HLA Troubleshooting

Item	Occurrence	Possible cause	Action
1	After replacing oil, sound occurs when starting engine	Oil shortage in oil passage	<ul style="list-style-type: none"><li>• Maintain the engine speed between 2,000 to 3,000 rpm for approx. 2 s and 10 min<sup>*</sup>, and verify that the sound disappears.<ul style="list-style-type: none"><li>— If the sound disappears, the HLA is normal.</li><li>— If the sound does not disappear, go to item 5.</li></ul></li></ul>
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	
4	Sound occurs directly after engine is started with newly replaced HLA		
5	Sound occurs continuously for 10 min or more	Insufficient oil pressure	<ul style="list-style-type: none"><li>• Inspect the oil pressure. (See OIL PRESSURE INSPECTION [SKYACTIV-D 2.2].)<ul style="list-style-type: none"><li>— If less than the specification, inspect each part of the engine.</li></ul></li></ul>
		HLA malfunction	<ul style="list-style-type: none"><li>• Inspect the HLA. (See HLA Inspection.)</li></ul>
6	Sound occurs during idling after high-speed driving	Incorrect engine oil level	<ul style="list-style-type: none"><li>• Inspect the engine oil level. (See ENGINE OIL LEVEL INSPECTION [SKYACTIV-D 2.2].)</li></ul>
		Engine oil deterioration	<ul style="list-style-type: none"><li>• Replace the engine oil. (See ENGINE OIL REPLACEMENT [SKYACTIV-D 2.2].)</li></ul>

\* : 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 cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
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].)
6. Install in the reverse order of removal.



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