



Hydraulic Lash Adjuster & Valve Train Noise Caution on 2016-2024 Gen 2 Chrysler 3.6L Pentastar Engines

The AERA Technical Committee offers the following information regarding hydraulic lash adjuster and valve train noise caution on 2016-2024 Gen 2 Chrysler 3.6L Pentastar engines. AERA reports a caution on the lash adjusters for later model 3.6L engines.

The exhaust hydraulic lash adjuster on the later 3.6L engines has the check ball reversed compared to the earlier years. Do not interchange lash adjusters from earlier engines into the later engines or damage can occur.

Identifying the intake and exhaust lash adjusters is done by looking at the oil feed holes. The Intake has a double oil feed hole for the two-step variable valve lift system. See Figure 2. The Exhaust lash adjuster has a single oil feed hole, see Figure 1.

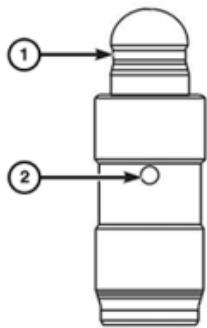


Figure 1: Exhaust Lash Adjuster

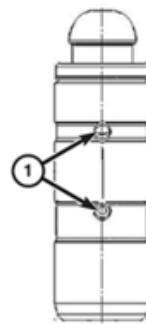


Figure 2: Intake Lash Adjuster

Valvetrain noise complaints have been reported by members for this engine, and the lash adjusters are a common component to consider. Below is a checklist to follow to help locate the root cause.

A tappet-like noise may be produced from several items. Check the following items.

1. Engine oil level too high or too low. This may cause aerated oil to enter the adjusters and cause them to be spongy.
2. Insufficient running time after rebuilding the cylinder head. Low speed running for up to 1 hour may be required to fully evacuate trapped air from the valvetrain system.
 - Run the engine between 2000 and 3000 RPM for three to five minutes. Return the engine to standard idle speed for 30 to 60 seconds. Evaluate noise. If noise is present, repeat the process an additional 4 cycles. If noise is present after additional cycles, take the vehicle on a typical driving cycle.



3. Turn the engine off and let it sit for a few minutes before it restarts. Repeat this several times after the engine has reached normal operating temperature.
 - A collapsed lash adjuster(s) will remain in a compressed state with no external force and no return force from the spring. This is caused when debris jams the piston causing the top plunger of the lash adjuster to stay collapsed in the bottom housing. If the lash adjuster(s) are confirmed to be collapsed, replace the lash adjuster(s).
 - A spongy lash adjuster(s) will return to its original state after being compressed. This is caused by air trapped in the lash adjuster(s) or debris blocking the check ball. The lash adjuster(s) will compress under a force and be returned to the original position under a spring force. If the lash adjuster(s) are confirmed to be spongy, repeat Step 2 as further run time may be required to de-aerate the lash adjuster(s). After repeating Step 2.
4. Low oil pressure.
 - Check and correct the engine oil level.
 - Check the engine oil pressure
 - Check for excessive main bearing clearance and correct
 - Check for a worn oil pump
 - Check the camshaft journals and the bearing bores for abnormal wear patterns, scoring, grooving, fatigue, pitting or a foreign material
5. The oil restrictor in cylinder head gasket or the oil passage to the cylinder head is plugged with debris.
6. Air ingested into oil due to broken or cracked oil pump pick up.
 - Check the pickup tube and replace it if necessary
7. Worn valve guides.
8. Rocker arm ears contacting valve spring retainer.
9. Rocker arm loose, adjuster stuck or at maximum extension and still leaves lash in the system.
 - Check the camshaft journal and lobe for abnormal wear patterns, scoring, grooving, fatigue, pitting or a foreign material
 - Check the rocker arm(s) for proper alignment to the camshaft lobe(s) and valve stem(s)
 - Check the lash adjuster(s) for proper operation and replace as necessary
10. Oil leak or excessive cam bore wear in cylinder head.
11. Faulty lash adjuster.
 - Replace the lash adjuster(s).