

**DESCRIPTION:**

For the applicable vehicles equipped with 3.3L and 3.8L V6 engines listed below, this bulletin outlines the revised service procedure to improve serviceability for the removal and replacement of both LH/RH timing chain tensioners. The new procedure does not require that the engine be removed from the vehicle. Accordingly, the updated warranty information has been included.

**APPLICABLE VEHICLES:**

- 2006-2010MY Sonata 3.3L
- 2006MY and later Azera
- 2009MY Santa Fe 3.3L
- 2007-2008MY later Entourage
- 2007MY and later Veracruz 3.8L

**SERVICE PROCEDURE:**

**IMPORTANT:**

A customer complaint and statement related to start-up engine sound must be documented on the repair order for any warranty diagnosis and repair. Certain mechanical sounds occurring briefly during initial engine start-up may be due to prolonged engine shutdown or long-term storage, and may be considered normal.

Prior to engine disassembly, the customer complaint and severity of condition must be confirmed:

- Inspect the engine oil level, oil quality, and oil filter service duration.
- Start the engine and once the engine has reached full operating temperature, turn the engine off for **10 minutes**.
- After **10 minutes** of engine shutdown, restart the engine.
- Listen for any chain type noise that may occur briefly for several seconds immediately upon engine start-up.

**NOTE:** If any start-up noise is observed, then restart engine after **10 minutes** and listen to the specific area shown below with an electronic stethoscope (or equivalent). Repeat this several more times to confirm the source point of the brief engine start-up sound before continuing on to the service procedure.



**NOTE:** If there are no brief engine start-up sounds after repeated **10 minute** shutdown attempts, then do not perform the Service Procedure of this TSB. The engine is operating normally.

1. Record radio station presets and then disconnect the battery ground cable.
2. Remove both front wheels. (Chalk L or R on corresponding wheel as reference.)
3. Remove the engine side cover at the right front wheel well.
4. Remove lower engine cover(s).
5. Drain engine oil and remove the fastening bolts from the lower oil pan assembly.
6. Drain the engine coolant from the radiator.
7. Drain, disconnect, and remove the hose connection between the power steering reservoir and the power steering pump.



8. Remove the upper engine cover.
9. Disconnect the intake hose from the throttle body and disconnect the connector to the Mass Airflow Sensor (MAF).
10. Remove the entire intake hose, MAF, and the upper air cleaner housing in one piece. Place on a clean and safe area of workbench.
11. Disconnect PCM connectors and remove lower air cleaner housing from vehicle.
12. Disconnect the related connectors and remove the intake surge tank (upper plenum) with the throttle body.
13. Block the intake ports by placing a protective cover (such as a long strip of duct tape) over the open ports of the lower intake plenum.
14. Disconnect all related connectors, and remove the ignition coil assemblies.
15. Remove the LH and RH valve cover assemblies.
16. **Sonata and Azera ONLY:** Support the transmission case with floor jack underneath and remove 4 bolts from the LH upper mounting bracket of the automatic transmission.



**NOTE:** To prevent possible damage, use wooden blocks or equivalent between the floor jack lift cup and the transmission.

17. **Sonata and Azera ONLY:** Remove the upper radiator hose and then pivot the LH (driver's) side of the engine down by lowering the floor jack slowly.
18. **Sonata, Azera, and Entourage ONLY:** Remove the engine coolant reservoir.
19. **All models (except Entourage):** Disconnect the ground strap from the RH (passenger side) strut tower.
20. Support the RH of the engine slightly with floor jack underneath the lower oil pan assembly.

**NOTE:** To prevent possible damage, use wooden blocks or equivalent between the floor jack lift cup and the lower oil pan assembly.

21. Remove the RH upper engine mount and bracket of the engine.



22. Attach engine support fixture SST (or equivalent) to a hoisting point at the top of the engine to support the weight of the engine.



23. **Sonata and Azera ONLY:** Lift the engine until the RH upper mounting deck of engine is level with the corner of the RH strut tower.



24. Loosen the water pump pulley bolts a few turns each.
25. Remove the serpentine belt tensioner and serpentine belt.
26. Remove the crank pulley and idler pulley.
27. Remove water pump pulley and the water pump.
28. Remove all bolts from the timing chain cover.
29. Release hose clamp to disconnect the center galley coolant hose.



30. Carefully, remove the timing chain cover.

**NOTE:** When prying loose sealed parts, do not allow the prying tool to scrape or bend the flat sealing surfaces. Pry at designated external pry points or use suitable tool specified in Shop Manual.

31. Remove the front main oil seal from the timing chain cover.
32. Remove the lower oil pan.
33. Clean off old liquid gasket and residue from:
  - front of cylinder heads
  - front part of the engine block
  - timing chain cover
  - front and bottom portions of the lower crankcase assembly
  - lower oil pan assembly.

**NOTE:** Carefully use flat scraper or fine wire brush to remove residue without damaging the flat surface.

34. Install new rubber o-ring and gaskets to the front and back sealing recesses of the timing chain cover.





35. Remove and replace both timing chain tensioners.

**NOTE:** Once the chain position and guides are secure, remove the pull pin from the new tensioners.

36. Thoroughly wipe clean and dry all the sealing surfaces using a lint-free shop towel.
37. Apply thin bead of liquid gasket to the timing chain cover sealing surfaces of the block, cylinder head, lower crankcase, and also the timing chain cover.



**NOTE:** Once the liquid gasket is applied to the sealing surfaces, be sure to assemble the parts within **5 minutes** to prevent premature drying of the liquid gasket.

38. Carefully locate the timing chain cover into position and then attach to the engine.
39. Reinstall the center galley coolant hose and hose clamp.
40. Tighten all timing chain cover fasteners to specifications.
41. Apply thin bead of liquid gasket and reinstall lower oil pan assembly.
42. Install new front main oil seal.





43. Reinstall all the removed components in reverse order of removal.

**NOTE:** When reattaching the LH upper mounting bracket to the transmission case, hand-tighten all 4 bolts to snug and then final torque to specification.

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**NOTE:** Before reinstalling both valve covers, remove any old liquid gasket residue at the top surfaces between the timing cover and the cylinder heads. Reapply liquid gasket to fill the seam points on the top surface between the timing cover and the cylinder head as shown (there are 2 seam points for each cylinder bank).

- Bead width: 0.1 in (2.5 mm)
- Install the valve covers within 5 minutes after applying the liquid gasket.

**NOTE:** Use a suitable tool to properly allow the cooling system to eliminate the remaining air while the engine is idling.

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**NOTE:** Reset clock, radio presets, and (if equipped) FATC setting to display F instead of C for temperature.

44. Verify repair.

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