



WA-SB-006

- SUBJECT:** Camshaft gear inspection
- DESCRIPTION:** Avoiding fatigue issues from gear torsional activity
- APPLICABILITY:** All Serial Numbers
- COMPLIANCE:** **On receipt of the Service Bulletin, Effective Date: 22 Aug 2011**

Duration: If carried out with your 50 hour pre combustion chamber change it only takes the time it takes for the careful examination of the gear.

One of the factors that may contribute to reduced fatigue life of the crankshaft gear bolts is extra torsional activity being transmitted through the gear drive train. WAM is taking all practical precautions to ensure that there are no field failures. As part of these precautions we are asking that all customers remove the sump from their engine and carefully visually inspect the camshaft gear (half is clearly visible with the sump removed, the other half is visible when the propeller is turned through 180 degrees). The teeth should show light even polishing across their flanks and there should (obviously) be no chips, cracks etc. on the teeth, spokes, rim or anywhere else on the gear.

This check is mandatory at 50 hr oil changes until further notice.

The detailed procedure is set out below:

Sump removal, inspection and refitting

Ensure this is conducted in a clean dust-free environment, or dirt may get into the internals of your engine, shortening its life. Draining the oil before starting the job means less chance of oil spillage, the oil may be re-used if it has less than 50 hrs use.

Tools required

- 10mm ¼" drive socket or 5mm ¼" drive hex key (depending on bolt type)
- ¼" drive ratchet and 6" extension bar
- ¼" drive torque wrench suitable for use at 12Nm (8.8lbft)

Removal

- Locate 10 sump retaining bolts; fully remove 8, leaving two remaining bolts in opposing corners.
- Carefully undo the remaining bolts by ½ turn at a time until both are undone 3 whole turns.
- Let the sump hang on the bolt heads whilst making sure the rubber seal is not stuck to the cylinder head. If the seal is stuck, remove with a small screwdriver or similar, being careful not to 'nick' it,
- Obtain a helper and hold sump whilst the last bolts are fully removed. Lower sump slowly taking care not to spill any remaining oil.

Inspection

- At this point the camshaft gear will be plainly visible. Remove the oil as well as you can to allow visual inspection of the teeth and other gear parts (brake cleaner is very good for this). Rotate the propeller as appropriate to enable inspection of the rest of the gear.
- The teeth should show light even polishing across their flanks and there should (obviously) be no chips, cracks etc. on the teeth, spokes, rim or anywhere else on the gear.
- If the sump is empty, take this opportunity to clean it out thoroughly, removing any pieces of dislodged RTV silicone etc. Should there be any metallic particles inform WAM immediately.
- Similarly clean the oil strainer "foot" that hangs into the bottom of the sump.

Re-Fitment

- Clean the head face and ensure that there is no RTV silicone or oil remaining on it.

Failure to comply with any recommendations/limitations published by Wilksch Airmotive will invalidate your warranty.

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- Ensure the rubber seal is correctly seated in the sump track. Silicone or other high melting point grease can be used to retain it if necessary.
- Apply a small amount of RTV silicone to the joint in the seal where it sits in the sump track and two small amounts at the head / timing cover joints either side of the cam gear.
- Lift and locate the sump on to cylinder head and re-fit two opposing corner bolts hand tight to retain the sump in position. Fit remaining 8 bolts hand tight, then torque all 10 bolts to 12Nm (8.8lbft) in a diagonal pattern from centre out (using correct torque wrench as described above).
- Re-fill engine with oil and check level after settling.
- On first run of the engine, stop after approximately 5 minutes and check that there are no oil leaks. Re-check the oil level.
- Check again for leaks after first flight.

Please confirm receipt of instructions via email and also once the work is carried out.