

## Technical Notes

### Technical Tip “Engine Knock”

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Sometimes in a Model A the engine will develop a slight knock. If the rod bearings and main bearings are tight consider the camshaft and its components for the source of the knock.

First, the camshaft thrust plunger (A-6275) and spring (A-6276) should be replaced with new American made units (*Fig. 1*). These need to be well lubricated when assembled. Old units can have wear and weak springs. The original units are hard to test, due to the lack of specifications. A weak spring or worn plunger allows the camshaft to move back and forth making an engine knocking noise. This noise can be mistaken for rod or main bearing knock. (*Fig. 2*). A side note is that the movement of the camshaft will cause wear on the oil pump/distributor drive gear (A-6551).

Second, check the backlash between the timing gear and the crankshaft gear. This is measured with a feeler gauge and should read between .003" and .005" (*Fig. 3*). If you are getting excessive backlash you can use an oversized gear, either .003" or .005".

Third, stock timing gears are fiber and they tend to run quiet. If the fiber timing gear was replaced with an aluminum or bronze gear they tend to be noisy due to the fact that you have metal on metal contact. The metal gears are stronger and will last longer than the fiber units.

Fourth, the camshaft center journal with the drive gear should have a diameter of 1.557" or larger, with no pits and good teeth along with no wear. Excessive wear on teeth or incorrect tolerances will cause a knock between the camshaft and oil pump/distributor drive gear, or the camshaft and block. The fix can be so-so (cheap) or very expensive. The cheap fix is to purchase an oversized oil pump/distributor drive gear in either .004" or .010". The teeth are wider to compensate for the camshaft wear. The expensive fix is to purchase a new camshaft and maybe have the block machined for camshaft journal sleeves (bushings). (*Fig. 4*).

Remember that the Model A engine block is made from cast-iron with many hollow internal passages. This provides a very good source to resonate sounds. If you use an automotive stethoscope (much like a medical doctors stethoscope) to probe for the knocking noise, you can usually pin point the general area of the source of the noise. (*Fig. 5*). A safety note is to keep the stethoscope probe away from the spark plug connectors, coil, fan blade & belt, plus the moving pulleys.



Fig 1



Fig 2a



Fig 2b



Fig 3



Fig 4

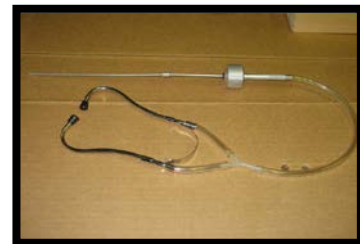


Fig 5