

LN Engineering Retrofit Kit Instructions - Rev 7 Jul 10.

1. **PROFESSIONAL INSTALLATION RECOMMENDED** and required for limited warranty. See enclosed warranty form. **WE DO NOT PROVIDE SUPPORT FOR INSTALLATIONS!**
2. Dual row retrofit kit for dual row only IMS's & single row kit for single row only!
3. If engine is running, use PST2, PIWIS, or equivalent tester to read live DME values for rough running threshold and camshaft deviation.
4. Prior to starting this repair, drain oil, remove filter and oil pan and inspect for debris and clean. If any foreign object debris is present from an IMS bearing that was in the process of failing or failed, we recommend installing a magnetic drain plug and spin-on full flow oil filtration kit (both sold separately).
5. Put engine at TDC, and lock out the pulley so the engine cannot turn over.
6. Pull cam plugs and make note of position. It is recommended that the cams are locked out using factory cam timing tool. If two sets of cam tools are available, it is possible to modify the tool to allow both sets of cams to be locked, even with the engine in the car.
7. Then remove the three (3) chain tensioners. If worn or noisy, replace.
8. Remove hub flange.
9. **If center stud/bearing support is broken**, use Kukko 21-4 internal extractor to pull from inner race. If all that remains is an outer race, a Kukko 21-6 internal extractor with a 22-2 counterstay can be used to pull from the outer race. If the bearing has "welded" itself around the perimeter of the bearing housing bore or snap ring groove is damaged in any way, do not proceed with the IMS retrofitting.
10. If it is a single row bearing, remove the snap ring. Otherwise, for dual row bearings, proceed as the retaining wire-loc is internal and will collapse as you pull on it.
11. Thread hex bar adapter onto existing bearing support / center stud (already attached to bearing puller, sold separately)
12. Adjust nut until sleeve of bearing puller is resting on the face of the intermediate shaft (around bearing housing bore) and **lubricate puller** before extracting bearing. When bearing has been extracted, the bearing and puller will come away from the engine as a single unit.
13. Clean out IMS tube to ensure no debris (if present) enters crankcase.
14. Remove nut and **SPARE o-ring** from new bearing support (already pressed into new bearing in center race) and slide the aluminum bearing driver/installation tool over the stud, counter-bored side facing outside of engine. Drop in 12 point nut and snug up to hold the bearing, bearing support/center stud, and bearing driver/installation tool as a single unit.
15. Holding the installation tool, use a snap on dead blow (red, plasticized hammer) and gently tap new bearing into place. Intermediate shaft will move backwards towards the pulley side of the engine until the other end of the shaft is resting on the backside of the oil pump console, so don't hammer too hard. Bearing should go in easy. Install spiro-loc on dual row or snap-ring on single row bearing.
16. You are now ready to install the new hub flange. Inspect seal for damage as well as bore in the block for any imperfections that might cause the new seal or flange to leak. Take care not to damage o-ring located in new hub flange, using an o-ring lubricant on seal to facilitate easy installation. Once new flange is started, use three (3) M6X25 bolts, tightening in a star pattern slowly to draw in the new hub flange in.
17. Once home, remove M6X25 bolts and replace with new micro-encapsulated bolts. Although optional, you can use flange sealant on bottom of head of the bolt.
18. The center bearing support 12 point nut can be installed and torqued to the factory spec. Do not exceed 24 ft/lb if using the "goodandtight" method. Use flange sealant (Loctite 574 or Curil T) on bottom of head of the bolt and use wicking (green) Loctite on the exposed threads of the center bearing support/stud and 12 point nut. If the small o-ring is damaged or leaks, the use of flange and thread sealants should prevent a leak.
19. **OPTIONAL** Replace accessible case perimeter bolts with new factory micro-encapsulated bolts.
20. **OPTIONAL** Replace rear main seal with updated part number 997-101-212-01.
21. Although care has been taken to provide adequate clearance, care must be taken to ensure engine turns over once flywheel/flex plate is installed (use new fasteners) and that there is no interference between the flange and flywheel/flex plate. If there is interference, carefully grind the area of contact.
22. Engine timing should be verified after installation and re-timed if cam timing slips. If available, record DME live value for rough running threshold and camshaft deviation. If deviation is more than 7.5 degrees, re-time cams.