



## Rebuilding Instructions for Reliance Water Pump Repair Kit NRE69846 & NRE69847.

### Disassembly

- 1) With the water pump removed from engine, remove drive gear from shaft using small beam puller and two bolts.
- 2) Remove spacer and hold spacer for reinstallation later.
- 3) Remove snap ring that retains bearing.
- 4) Turn water pump over and remove the snap ring that retains impeller cover.
- 5) Using two small pry bars, pry the cover from housing and remove and discard the old o-ring.
- 6) To remove the impeller from the pump shaft, turn the pump housing over and support the housing so the bearings and shaft will clear the housing support. Using a small driver or an Allen head bolt small enough to pass through the I.D. of the impeller, slowly press the bearings and shaft from housing. You will need to keep the pump shaft and bearing for later use and then you can discard the bearings and shaft.
- 7) Remove the water seal from pump housing by using a small driver and discard the seal.
- 8) Remove the oil seal from housing using a small driver and discard seal.

### Reassembly of water pump

- 1) Clean and inspect water pump housing for cracks. Clean all snap ring grooves and be sure that all old gasket paper has been removed.
- 2) Using the pump shaft and bearings that have been removed from the pump housing earlier as a sample, press the new bearings onto the shaft by pressing on the inter races only.
- 3) With pump housing lying on the impeller side, install oil seal into housing. The oil seal will need to be installed with the spring loaded lip up or towards the gear. Apply a generous amount of grease in seal cavity between spring loaded lips.
- 4) When installing the new pump shaft you will need to use the JDG-249 seal protector that has been provide in this kit on the shaft to prevent damage to seal. Apply a light coat of clean oil to seal protector and start pump shaft into seal and housing. Support the pump housing on the gear side and using a driver that will press on the outer bearing race, slowly press the shaft into the pump housing until it stops or until the snap ring seats fully.
- 5) Install the bearing retaining snap ring.
- 6) Install the spacer that has been put aside earlier on the pump shaft.
- 7) Install gear on shaft by supporting the pump shaft on the impeller end and press the gear onto the shaft until gear stops at the spacer. Rotate the pump shaft to make sure it turns freely.
- 8) Install the water seal into housing and on the shaft by using the seal installer included in the kit.
- 9) Install the new pump impeller by supporting the pump shaft on the gear side and press the impeller onto shaft until it is flush with the end of the shaft or 0.13mm (0.005in.) below the end of the shaft. Rotate shaft to make sure the shaft is free.
- 10) Install the impeller cover with the new o-ring and snap ring and rotate pump shaft to be sure that the pump shaft is free and not hitting the cover.
- 11) When you have completed steps 7-10 and pump shaft will not turn, you will need to go back and adjust the impeller so that the shaft will turn.
- 12) Pump is now ready to be reinstalled on the engine.