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Rebuilding Instructions for Reliance Water Pump Repair Kits NRE10967, RP137, & RP140

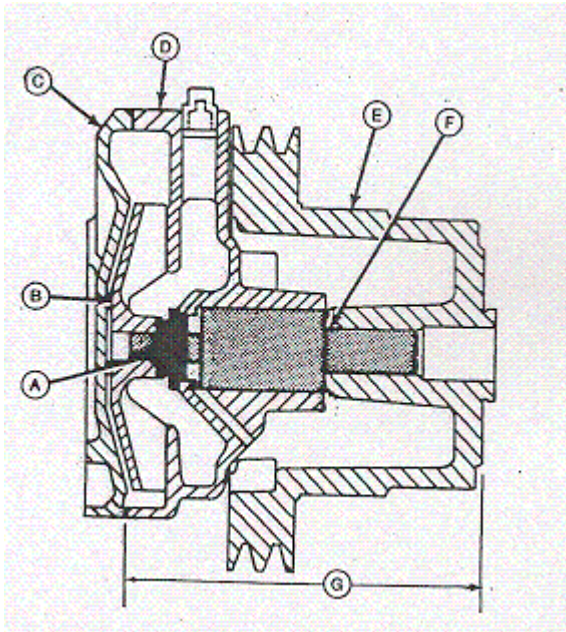
Disassembly

- 1) Take water pump off the engine.
- 2) Remove water pump back cover and gasket from the housing (if equipped).

IMPORTANT:

- 3) Measure & Record (See Diagram 1)
 - Impeller height from back pump housing gasket surface (D) to impeller (B).
 - Impeller (B) to housing (D) clearance.
 - Dimensions (G) front face of pulley (E) where the fan mounts, to gasket surface on back of pump housing (D).

(Diagram 1)



- | | |
|------------------------|-----------------------|
| A - Seal | E - Fan Pulley |
| B - Impeller | F - Bearing and shaft |
| C - Water pump cover | G - Dimension |
| D - Water pump housing | |



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- 4) Use a puller to remove the fan pulley hub from bearing/shaft.
- 5) NOTE: On high flow heavy-duty pumps remove front seal and snap ring.
- 6) By supporting pulley side of pump housing, press the shaft through the impeller. Then continue to press until the bearing/shaft comes out the pulley end of the housing. Please note the bearing/shaft is a single unit.
- 7) NOTE: The seal will remain in the housing as the bearing/shaft is pressed out. Drive the seal out of the housing (from pulley end toward the impeller end). You will then remove the cup and ceramic insert from the impeller, only if the impeller is to be re-used.

Reassembly

- 8) You will want to coat the new bearing/shaft assembly with a thin film of CLEAN oil. Remembering that the small end of the shaft goes in first, insert the bearing/shaft into the housing and press into place. Use a large flat washer on top of the bearing (this will show you when the bearing is flush with top of pump housing).
IMPORTANT: Do not apply pressure to the shaft when pressing the bearing/shaft into the housing. Press on the outer race ONLY, to avoid possible damage to the bearing. On high flow and heavy duty pumps, use a dial indicator to measure shaft end play. If the water pump is equipped with an oil seal and snap ring at the front of the housing, the max allowable end play is 0.25mm (0.010 in). Refer to the appropriate technical manual and select the snap ring size which allows for proper end play.
- 9) You will need to support the pump shaft when installing the unitized seal. Support the fan pulley end of shaft. Using the driver supplied in the kit, install the unitized seal making sure that the seal is fully seated in the housing.
- 10) To prevent damage to the bearing, support the pump shaft fan pulley end and then install the impeller. You will want to press the impeller on until the impeller-to-housing clearance is 0.015-0.035 in (0.39-0.89mm) or to the dimensions previously recorded from step 3. On low flow water pumps for 3029 engines for 5400N & 5500N Tractors, press the impeller onto the shaft until the distance from the pump housing gasket surface to impeller is 0.0-0.25mm (0.0-0.01in). Check to see that the impeller rotates freely and does not contact the housing.
- 11) Press the pulley hub onto the shaft until the dimensions previously recorded in step 3 are obtained. If the dimensions were not previously recorded, you will need to refer to the proper technical manual to obtain the correct dimensions.
- 12) When installing the cover using the new gasket, you will want to tighten the screws to the following torque:
5/16" screws 20ft -lbs (27Nm) (2.7kgm)
3/8" screws 35ft -lbs (48Nm) (4.8kgm)
- 13) Reinstall water pump on engine and fill the cooling system.