

**RELIANCE®**

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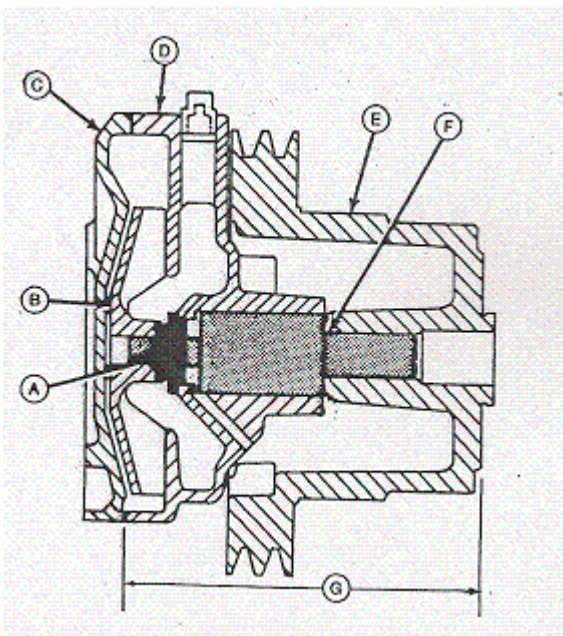
**Rebuilding Instructions for Reliance Water Pump Repair Kit RP227.**

## 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).



(Diagram1)

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



## Rebuilding Instructions for Reliance Water Pump Repair Kit RP227.

- 4) Use a puller to remove the fan pulley hub from bearing/shaft. Some pulley hubs have a center bolt in hub that will need to be removed before hub can be pulled off shaft.
- 5) NOTE: On high flow heavy-duty pumps remove front seal and snap ring.
- 6) Remove the impeller from bearing shaft using a puller. Remove the bearings and shaft from housing by supporting housing on pulley side. Press shaft and bearings until they come free of the housing. Please note the bearing/shaft is not a single unit.
- 7) NOTE: The seal will remain in the housing as the bearings and shaft is pressed out. Drive the seal out of the housing (from pulley end toward the impeller end). Remove the cup and ceramic insert from the impeller, only if the impeller is to be re-used. Cast iron impellers can be reused, but plastic and powdered metal impellers cannot be reused.
- 8) Clean housing and check for cracks.

### Assembly

- 9) Press new bearings onto new shaft, Note that the small bearing goes to the small end of shaft. Press bearings and shaft back into housing and install snap ring. Check to make sure that shaft rotates freely.  
IMPORTANT: Do not apply pressure to the shaft when pressing the assembly 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 endplay. The max allowable endplay is 0.25mm (0.010 in). Refer to the appropriate technical manual and select the snap ring size, which allows for proper endplay. Install front seal.
- 10) 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.
- 11) 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.
- 12) Support the impeller end of shaft and 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. Check to make sure that shaft rotates freely. Install center bolt if pump is equipped with one and torque to proper value.
- 13) 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)
- 14) Reinstall water pump on engine and fill the cooling system.