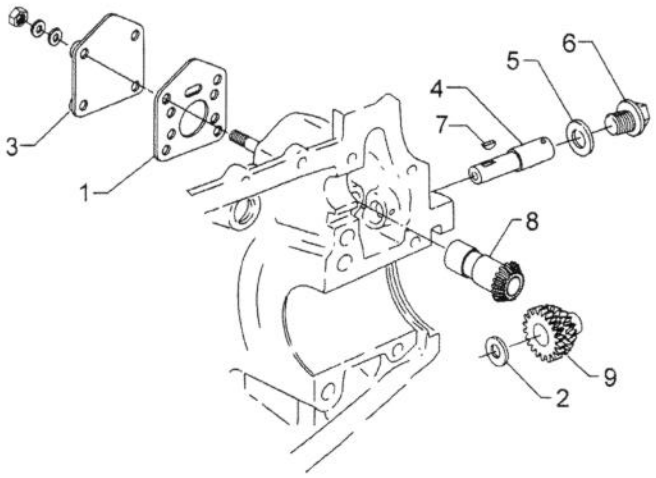

1. Gasket
2. Thrust Washer
3. Cover
4. Idler Gear Shaft
5. Gasket
6. Hex Head Plug
7. Woodruff Key
8. Prop. Governor Driven Gear
9. Prop. Governor Idler Gear

Figure 7-4. Propeller Governor Drive (6 and 8 Cylinder Engines)

INSPECTION

7-22. Inspect all crankcase, crankshaft and reciprocating parts in accordance with the general instructions contained in Section 3. Specific instructions follow.

7-23. Bearings (Precision Type). All precision type bearings used for main crankshaft bearings and connecting rod bearings will be replaced with new bearings at overhaul or upon removal from the engine.

7-24. Crankcase (Visual Inspection). Check carefully for burrs, nicks and cracks around the bearing support webs. Check bearing bores and inspect tang slots for any roughness that might cause improper seating of bearing inserts. Check all drilled holes.

7-25. Fretting on the contacting surfaces of the bearing saddle supports in the crankcase occurs on some engines. This condition is caused by slight motion between the contacting surfaces and results in abrasion of the metal surface. The affected areas have tiny pit holes and a frosted appearance, as contrasted to adjacent shiny unaffected surfaces. See figure 7-7. This condition can be misleading because of its trivial appearance; nevertheless it can be the cause of severe engine damage.

7-26. Fretting, by itself in this area, does not appreciably damage the structure of the metal, but the metal removed by the fretting action does change the size of the bearing saddles sufficiently to cause loose thru-studs and undersize main bearing bores. If not detected during overhaul, excessively tight crankshaft bearing fits will result in eventual engine failure.

7-27. Crankcase (Dimensional Inspection). The following paragraphs on crankshaft and camshaft dimensions will also describe dimensional requirements of the crankcase.

7-28. Crankshaft (Visual Inspection). Carefully inspect all surfaces of the shaft for cracks. If any cracks are found, replace the crankshaft. Check the bearing surfaces with particular care for scoring, galling, corrosion, pitting or other damage. If damage is found, the crankshaft must be repaired or replaced. See Section 3 and paragraphs 7-44 thru 7-66.

7-28A. Crankshaft (Magnetic Particle Inspection). Inspect the crankshaft using a magnetic particle inspection procedure performed by a certified operator.

a. Prior to magnetic particle inspection, completely remove all traces of oil, grease, and dirt. This can be accomplished best in a vapor degreaser using Trichlorethylene as a solvent or an equivalent environmentally friendly cleaning method. A 3 to 7 power magnifying glass must also be used to aid in the inspection.

b. Personnel performing the Magnetic Particle Inspection must be qualified and certified in accordance with the latest revision of ASNT Personnel Qualification SNT-TC-1A or NAS-410.

c. The inspection technique must be capable of detecting the smallest indication regardless of its orientation to the magnetic flux. This technique must be able to establish two magnetic fields, perpendicular to one another, in a plane parallel to the surface being inspected.