

Crankshaft:

I do essentially the same measurements on the crankshaft's left end, except the measurements can be taken directly off the timing rotor. That measurement requires that the floorboard and both left side engine covers be removed (the front crank-end cover is just a beauty cover, which covers the front end of the bigger clutch cover).

With the dial indicator tip placed against the timing rotor (on the end of the crankshaft), the primary drive gear can be pulled and pushed to measure lateral clearance.

To reduce lateral clearance at the crankshaft, the primary gear has to be removed and a recess cut into its inboard face.

The entire clutch assembly must be removed, to get the primary gear off.

Then the bolt in the end of the crankshaft comes off, with the large washer and ignition rotor. When you slip off the primary gear, be sure to watch for the large key way that could fall into the crankcase.

The machining of the primary gear is straight forward, but must be done on a lathe. Be sure to use a dial indicator to insure the gear is rotating true, relative to its flat inner face spinning perpendicular to the lathe centerline. No amount of wobble greater than .001" is acceptable. The cutting tool should be carbide, because the gear is case hardened and will quickly damage the edge of a softer cutting tool.

Cut a recessed area in the center of the gear face, surrounding the central hole, equal to the amount of measured lateral movement of the crankshaft MINUS .002" (again with the same close tolerance fitment limiting lateral crankshaft movement between .002" and .003" to allow for thermal expansion of the aluminum engine cases). The diameter of the cut area should be 1.950" ~ 2.000". Reinstallation is the reverse of disassembly. Use a new lock washer on the clutch hub nut and a new gasket under the clutch cover.

As always, have shop manual handy.

Ken