15. Install four-quarter inch nuts and washers at the 12, 3, 6 and 9 o-clock positions on the main gear housing and tighten them until they are just snug. There should be no more that 4 threads on the bolts showing past the end of the nuts. If there are more than 4 threads showing, an additional washer should be used under the nut to insure that the threads of the nut do not cut into the shank of the bolt.

16. To aid in centering the damper assembly on the input shaft spline, grab the flywheel and pull the engine through at least one full revolution. Now snug up the four damper bolts and torque them to 40 foot pounds in small steps.

17. This step is intended to verify that everything is assembled and aligned properly. With your hands, rotate the prop hub back and forth through the system lash travel (this is only a half degree or so) and note the amount of force needed to do this. This should be a relatively low force requiring only one hand. Note the position of the flywheel and rotate the engine crankshaft ¼ turn. The engine should be free enough to do this by pulling on the starter ring gear. Again check the force needed to turn the prop hub through the system lash. Repeat this procedure through one complete revolution of the engine. The force needed to rotate the hub should be approximately the same in all four positions. If the system seems to be binding in any of the four positions, try loosening the 4 damper bolts about 1 ½ turns and repeat this step. If the results are now good it may indicate that the damper was not properly aligned before tightening the bolts. Tighten them again and repeat the test. If you are unable to get good results after several attempts, try the following step.

18. The above procedure has succeeded in getting good alignment on all drives built to date, but if this fails, the adapter plate may be miss-aligned. If this is the case, loosen the six bolts in the adapter plate until they are barely snug. Using a rubber mallet or similar tool, tap the edge of the plate from one side and re-sung the bolts to about 10 foot pounds then recheck the prop hub force as in the previous step. Try this step tapping on all four sides of the adapter plate (one at a time) if necessary. If you are unable to get good results after trying this, call for further instructions.

19. Once you have gotten good alignment, torque the 10mm adapter plate bolts to 25 – 30 foot-pounds. These bolts may now be Loctited if you wish. Note! Remove only 1 bolt at a time when doing this in order to keep everything in alignment. When tightening the 6 adapter plate bolts, make sure the two spacers with single bolt holes are oriented correctly and that the bolts are properly torqued before any attempt is made to start the engine. If these spacers are allowed to turn and contact the flywheel, total destruction of the drive could result.

20. Remove the gear drive from the adapter plate. Clean all the mating surfaces of the gear drive. You may leave the sun gear and thrust bearing in place if you intend to do the final assembly soon.

FINAL ASSEMBLY

Make sure the main gear housing, ring gear Planet thrust bearing, planet gear assembly and nylon snubber/spacer are all properly assembled and the input shaft and bearing is in place before proceeding.

21. *Don't rush, but expedite the following steps so that the gasket maker does not start to dry before completing this procedure*:

- ✓ Apply RTV silicone gasket maker (I recommend Permatex Ultra Grey) to the back surface of the gearhousing spacer. Be sure to surround the ¼ inch bolt holes on all sides with the silicone sealant to prevent oil seepage down the bolt holes but don't over do it. You don't want a large amount of sealant to squeeze out inside the drive.
- ✓ Slide the spacer onto the twelve bolts (remember to match up the punch marks on the planet housing and the adapter plate) until it contacts the adapter plate.
- ✓ Use some wheel bearing grease to hold the ring gear retainer O-ring in place behind the ring gear. Apply sealant to the mating surface of the main gear housing (same as on the gear housing spacer) and slide it onto the bolts, again matching up the punch marks. Push the gear housing onto the spacer. Now slide the ¼" bolts forward until they protrude through the main gear housing.