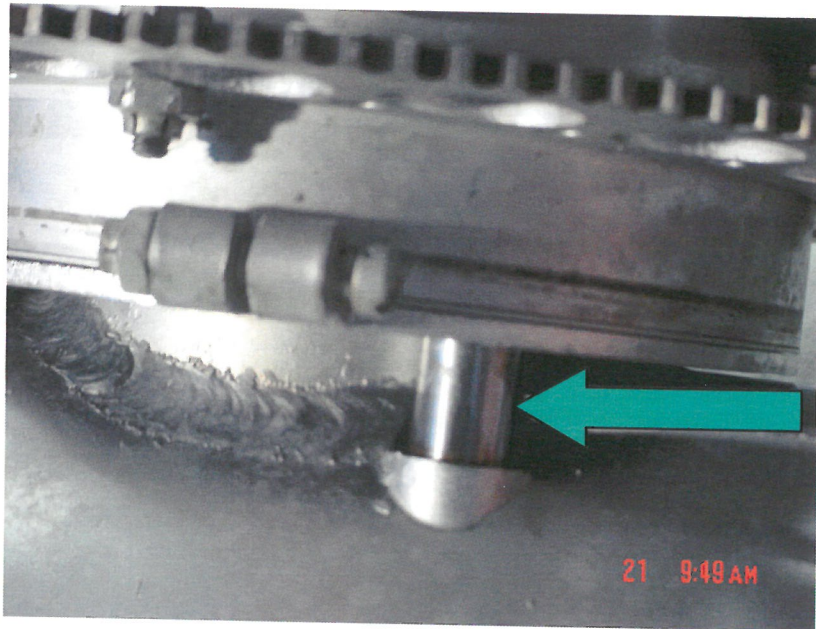
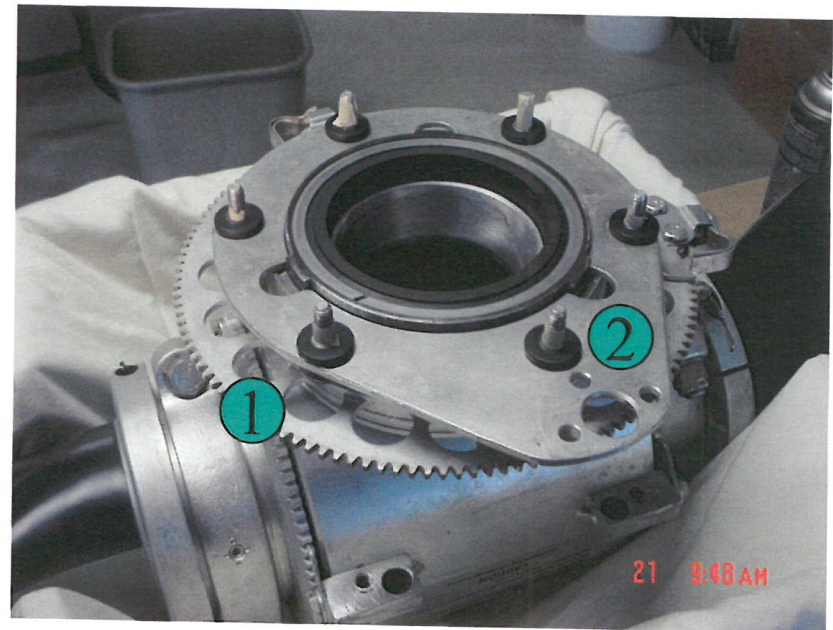


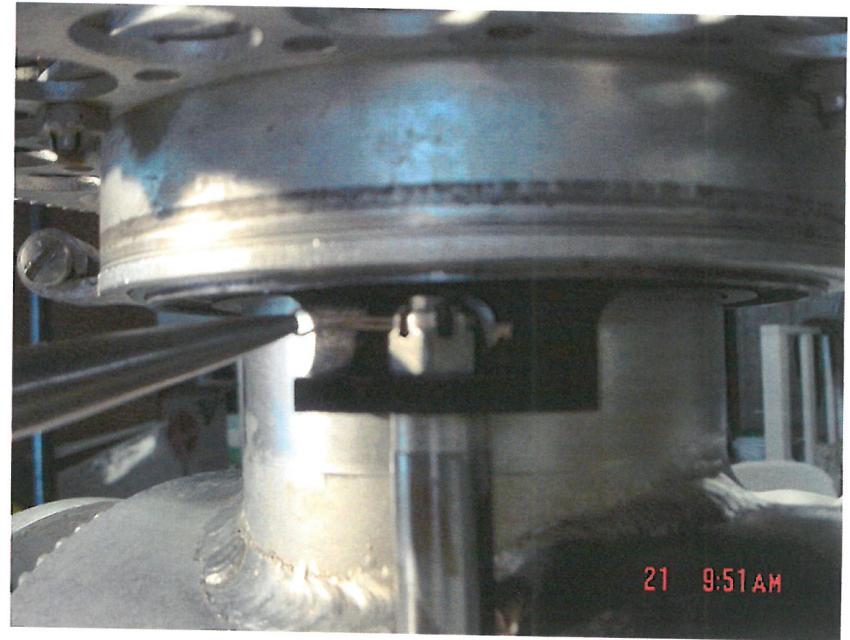
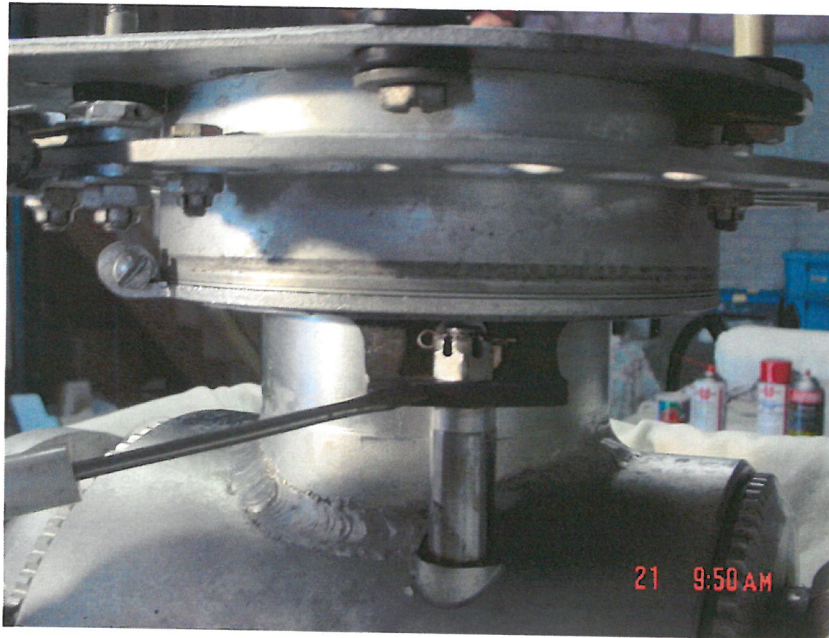
These are the hand tools that were required to complete the task. Inch pound torque wrench, small screw driver, medium screw driver, 1/4 drive 3/8 socket, 7/16 opened end wrench, 7/16 crows foot, 1/4 to 3/8 adapter, small side cutters, needle nose pliers. The overhaul manual is available thru Rapid P/N: 115187.



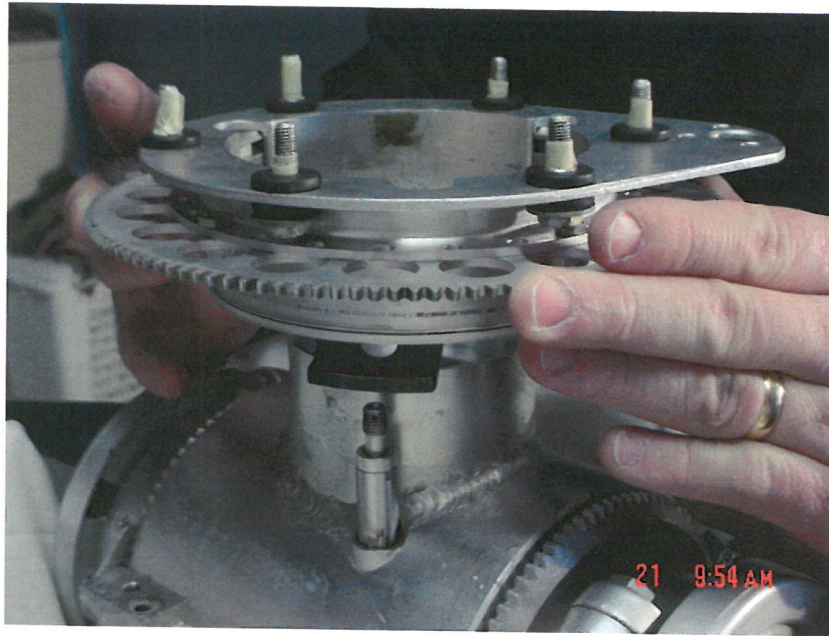
Pitch Control Bolt



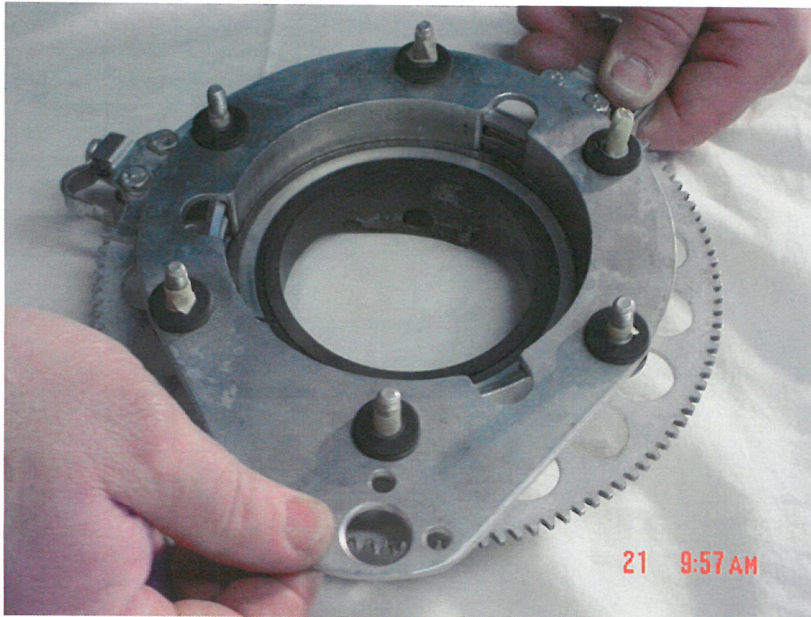
Locate the pitch control bolts, there are two, one on each side of the hub. Each bolt has a nut that is only accessible when the bearing assembly is at the bottom of its travel in the hub gear. Placing the bearing at the bottom of its travel can be accomplished by rotating the drive gear(1), against the sleeve(2).



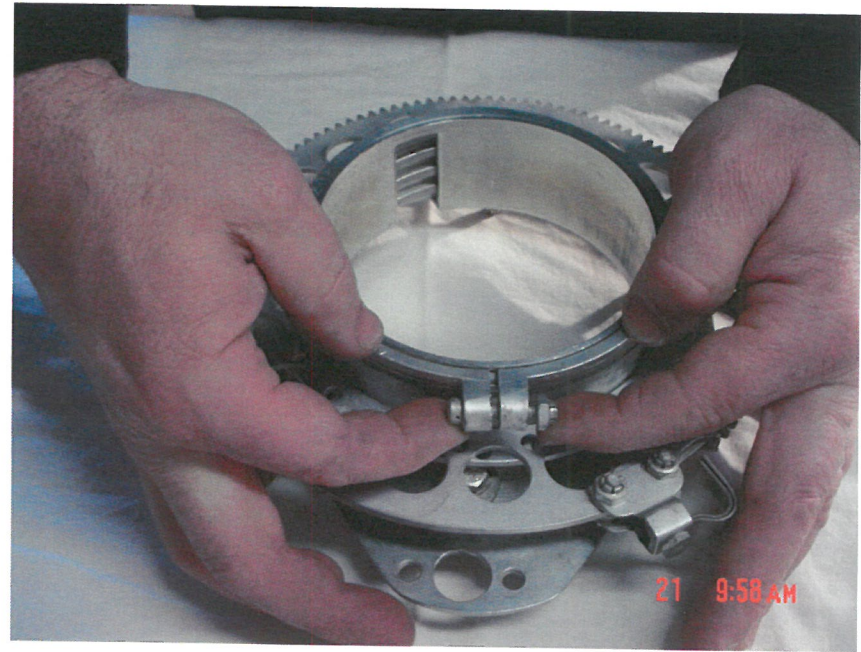
With the nut exposed, remove the cotter pin from both nuts and remove the nuts from both pitch control bolts.



Once the nuts have been removed from the control bolts, lift the hub assembly off the propeller. The picture at right shows both control bolts after the hub assembly has been removed.



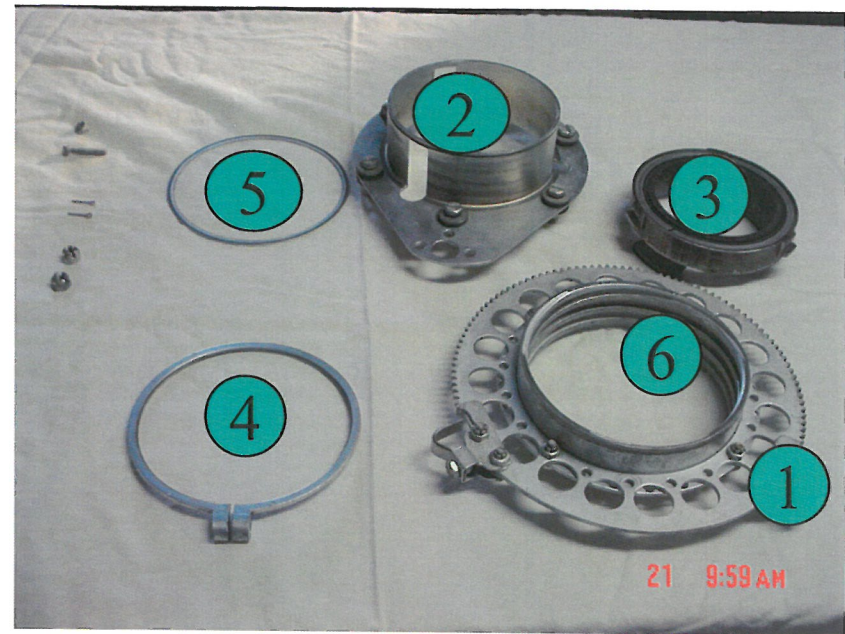
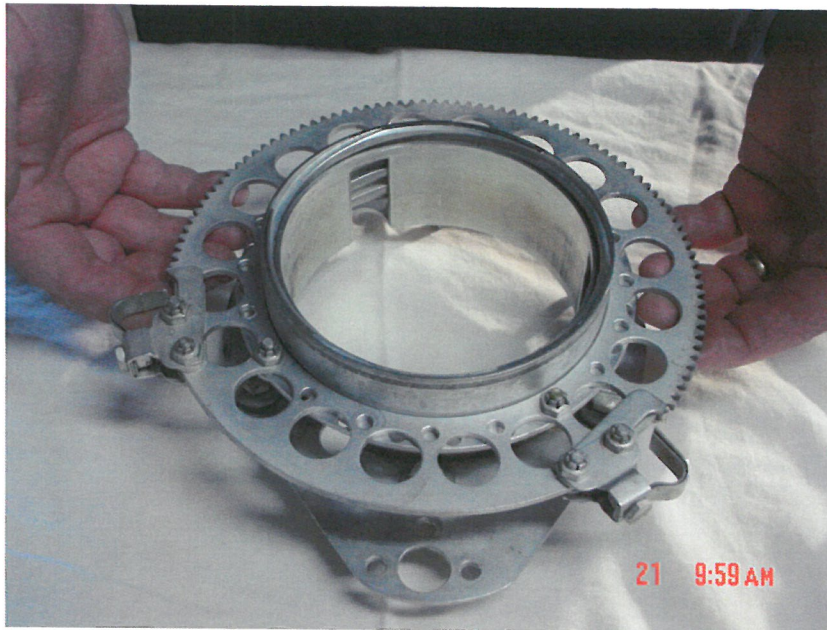
Place the hub assembly on a clean surface and rotate the sleeve and gear in such a manner that the bearing rises to the top of the sleeve. Remove the bearing.



The picture on the left shows the bearing removed from the hub assembly. Next, turn the assembly over and remove the sleeve retaining ring nut and bolt.



Remove the retaining ring and washer.



Lift the hub gear from the sleeve. The picture on the right shows all the parts that require disassembly for the lubrication service required every 250 hours of operation. (1) Hub Gear. (2) Hub Sleeve. (3) Pitch Change Bearing. (4) Gear Retaining Ring. (5) Gear Washer. (6) Hub Gear.





Next remove the snap rings on both sides of the bearing, being careful not to damage or weaken the the snap ring in the process. A small screwdriver or needle nose pliers may assist you in its removal.



Remove the bearing seals and soak the bearing in unleaded gasoline to loosen any grease that has hardened in the races. This will be especially necessary if the propeller has been sitting for an extended period of time. Be sure to rinse the bearing thoroughly and dry it completely.



Check the bearing for smoothness by pressing the inner race toward the outer race and rotating them until you have completely rotated both against each other. Any roughness would condemn the bearing.



A suitable grease meeting MIL-G-3278 (MIL-PRF-23827) such as AeroShell Grease7 should be used for repacking the bearing. Pack the bearing in the same fashion that you would pack any other ball or roller bearing.



Work the grease into the bearing until it appears on the other side. Rotate the bearing and work in more grease, then wipe off the excess.



Replace the bearing seals with new seals and reinstall the snap ring on both sides of the bearing.



Check the snap ring to make certain it will not rotate in the groove. Turn the bearing over and repeat the process on the other side.

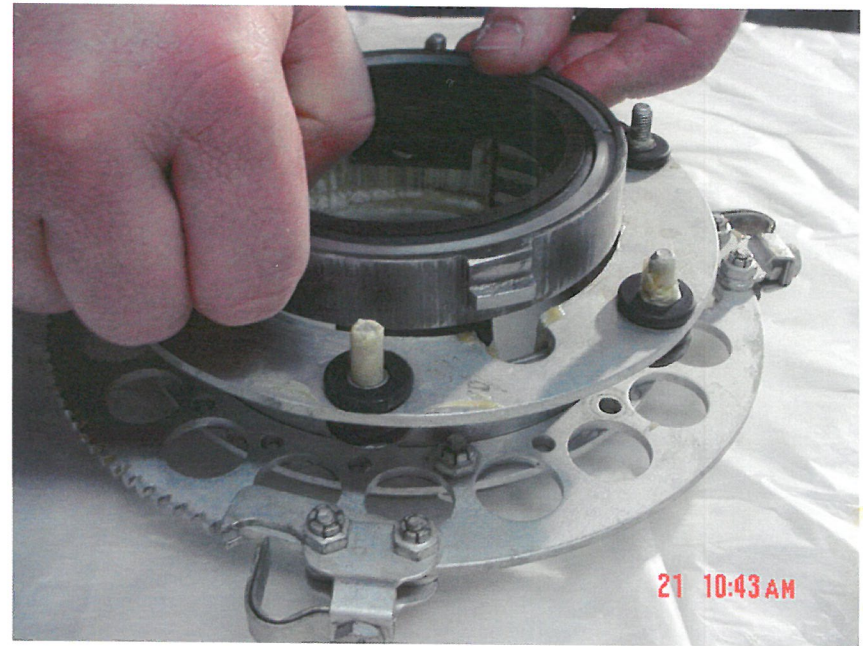
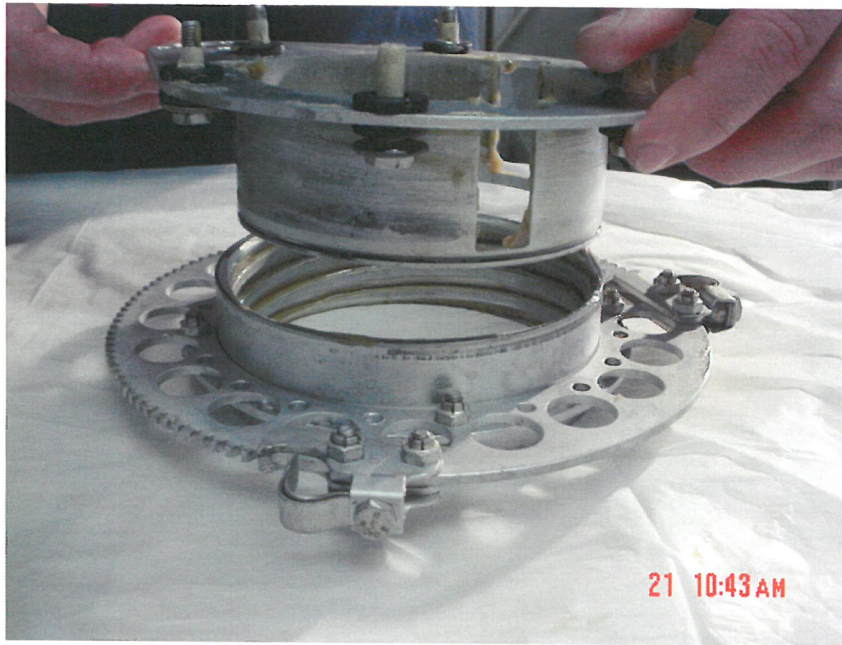


After the bearing is packed, it must be ran at high speed for three minutes, I fabricated a driver for the inner race by altering a drill driven sanding disk adapter. The drill is rated at 2800rpms and I was able to hold the outer race with my hand for the 3 minutes necessary to “run-in” the bearing. I would not recommend doing this at home.

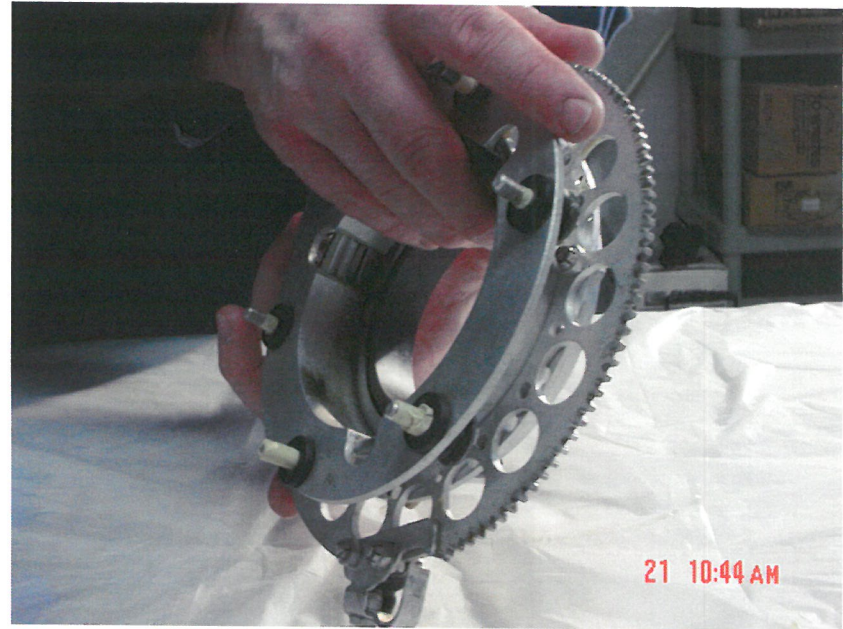
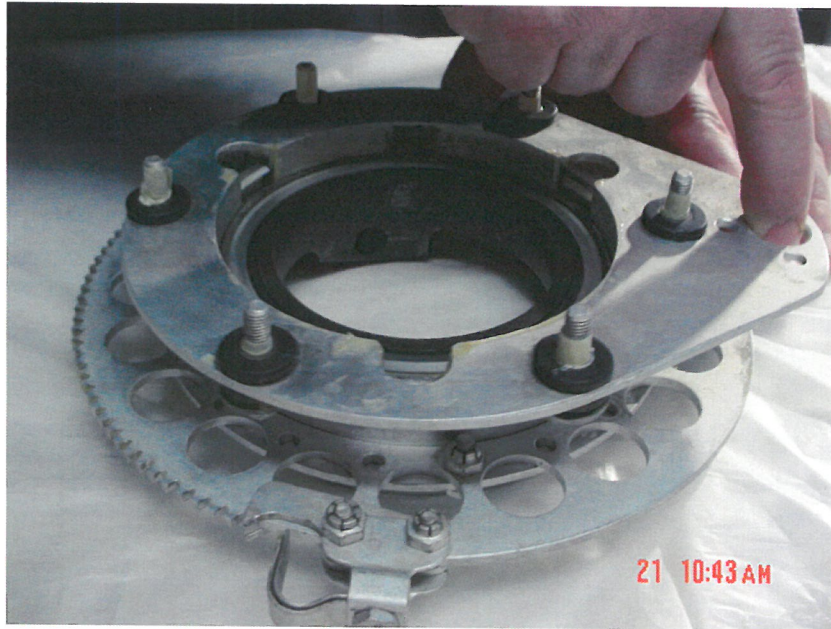




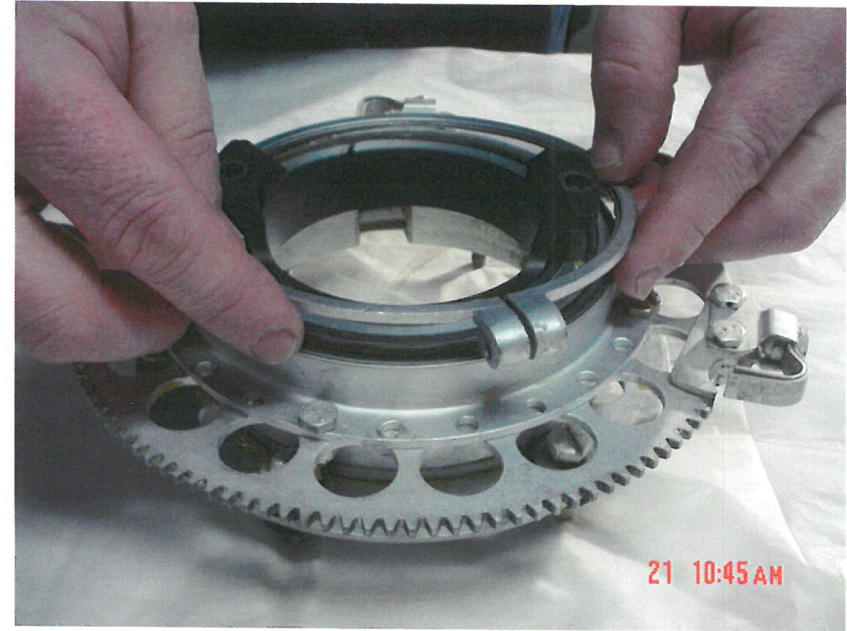
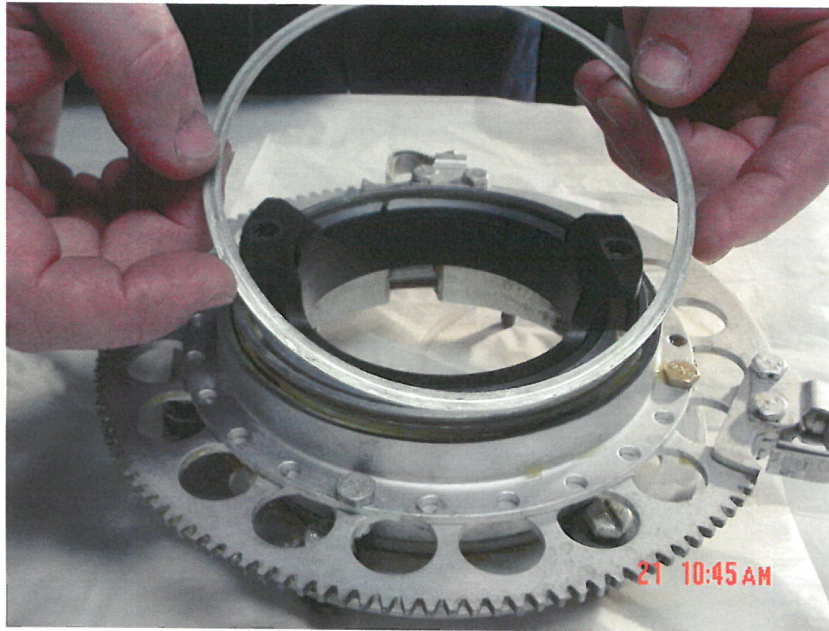
Lubricate the Drive Gear and the Hub Sleeve.



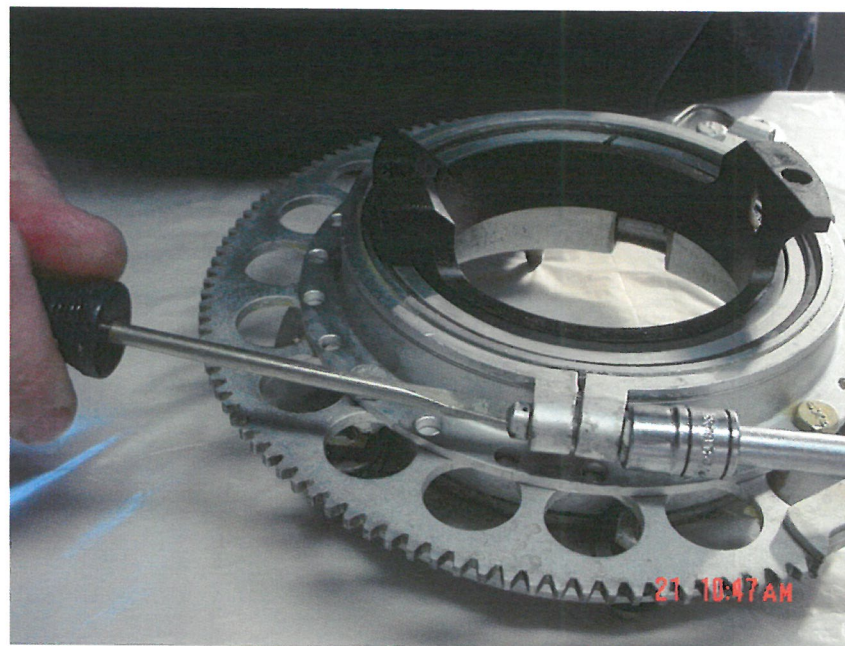
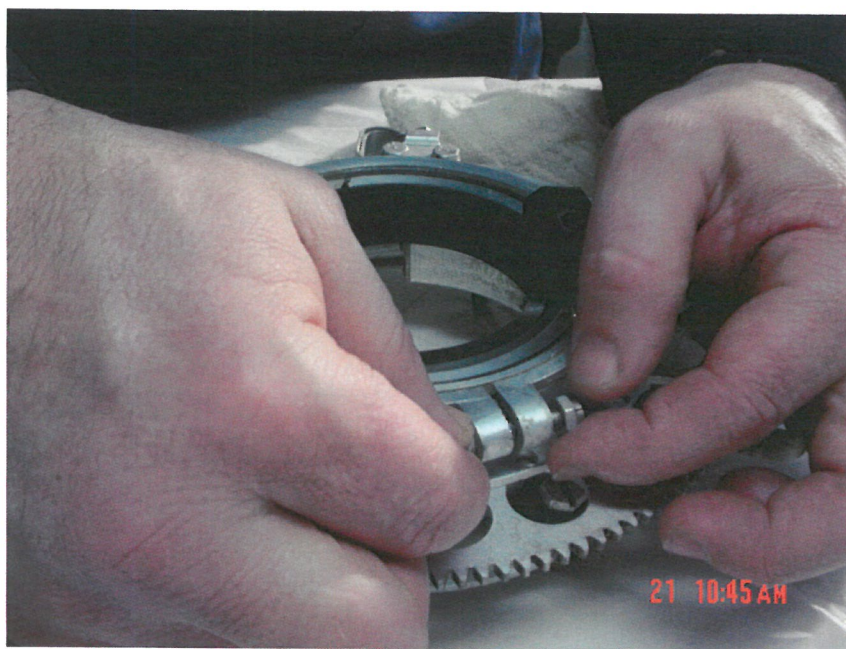
With the hub gear mounting flange toward the working surface, place the sleeve inside the hub gear. Next place the pitch control bearing inside the hub sleeve.



Rotate the hub sleeve in a manner that causes the pitch control bearing to be lowered into the hub gear. Turn the assembly over.



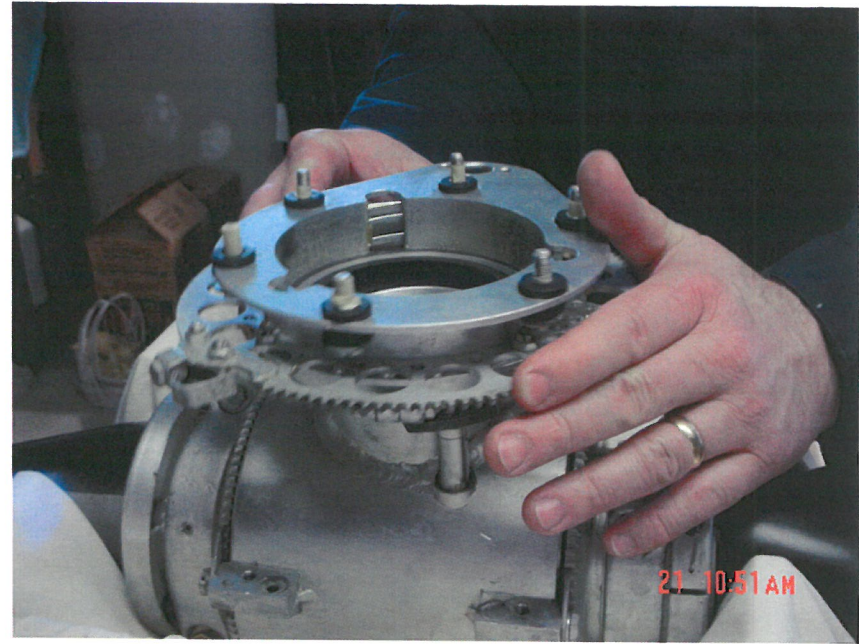
Install the gear washer and the gear retaining ring.



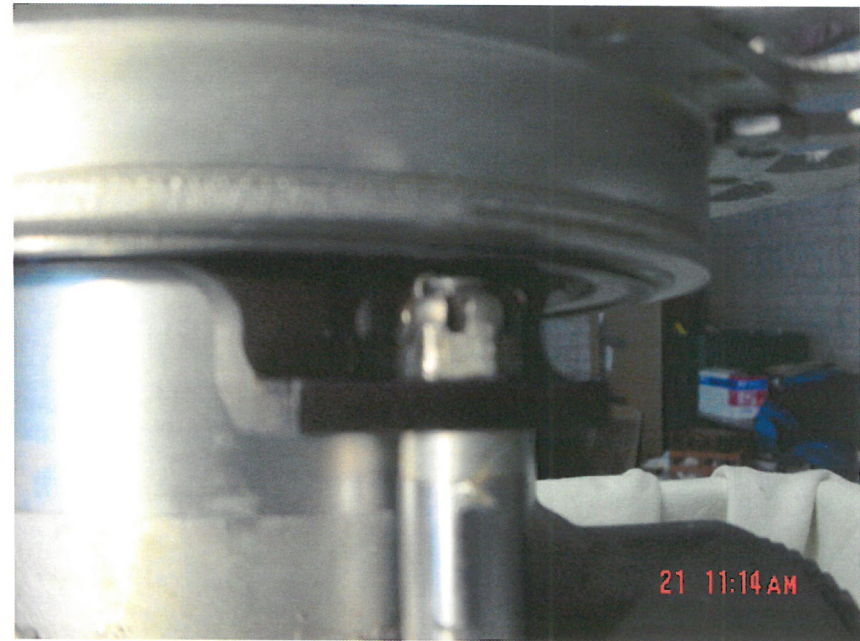
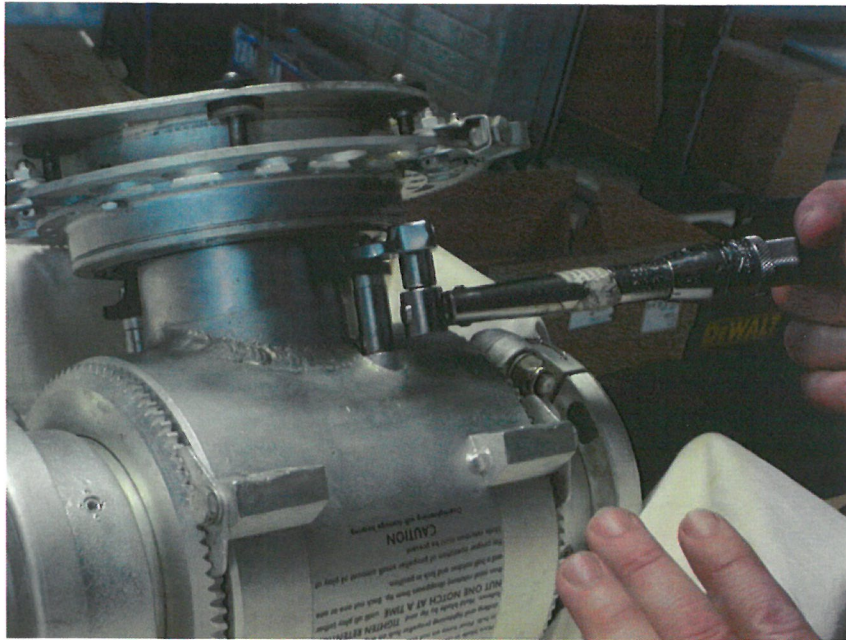
Install the retaining bolt and nut and torque them to 40 inch pounds.



The hub assembly is now complete and ready for installation on the propeller. The picture on the right shows a sleeve that mounts on the pitch control bolt. Install the tapered side toward the propeller housing.



Place the pitch control bearing lugs over the pitch control bolts.



Tighten the nuts on the pitch control bolts to 35-40 inch pounds and replace the cotter pins.