

Parks Planer Gearbox Oil Seal Retrofit
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Later Parks 12" planers had some additional features on them which the earlier planers did not. One such feature is the seal which covers the gearbox slot through which the infeed roller shaft passes. Given that the slot is an ideal entry point for wood shavings, this seal serves the purpose of keeping shavings out of the gearbox. This seal is actually two separate parts, referred to in Parks literature as the Oil Seal Retainer (Part A-80) and Oil Seal (Part A-81), and the complete assembly is attached to the gearbox via two 1/2" long 1/4-20 hex head bolts threaded into tapped holes in the gearbox housing. When I purchased my planer, the gearbox was filled with a mixture of grease and wood chips, and having seen a later model planer with this seal installed, it became imperative that I retrofit my planer. I ordered both parts from the D.C. Morrison Company in Covington, KY. In the text and photos, below, I'll walk you through the steps needed to complete this retrofit installation.

Figure 1 shows the two components of the oil seal. Prior to removing the gearbox, hold the retainer adjacent to the infeed roller shaft to determine the approximate mounting hole location in the vertical direction – see Figure 2. The retainer I was sent has a shaft hole that's longer than it is wide, whereas the retainer that I observed already installed on the later model planer has a round shaft hole. The larger shaft hole allows more flexibility in mounting. With the shaft roughly centered on the shaft hole, mark a horizontal line on the gearbox corresponding to where the mounting holes will be drilled. On my planer, the holes needed to be drilled approximately 1-1/2" down from the top surface of the gearbox casting. The key here is to ensure that the bottom of the retainer's shaft hole is just slightly lower than the bottom of the gearbox slot, making it impossible for the shaft to bottom out on the retainer as the shaft moves up and down during planing operations. Look down from above to confirm that the infeed roller shaft is situated roughly in the center of the gearbox slot.



Figure 1 – Oil Seal Retainer and Oil Seal

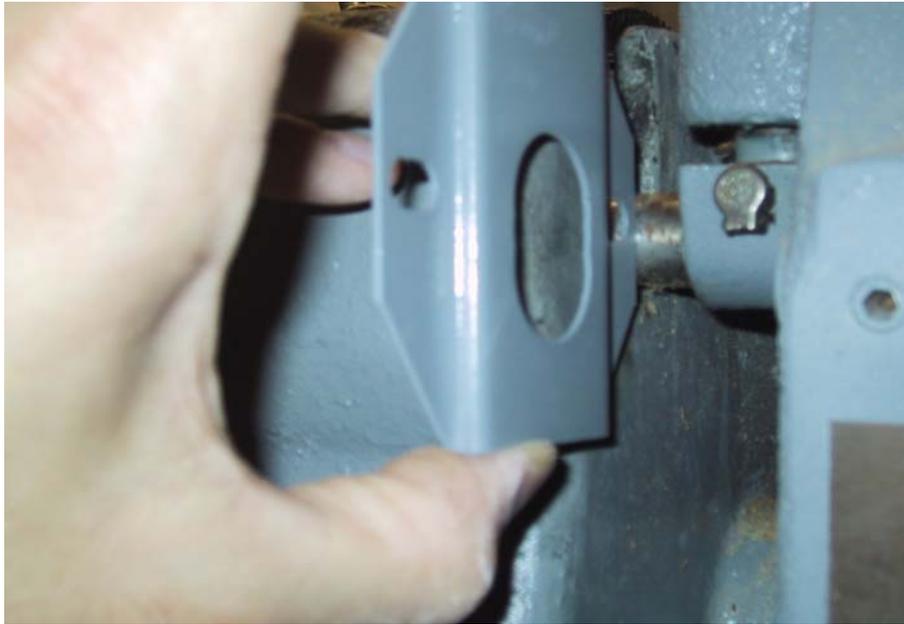


Figure 2 – retainer held in approximate vertical mounting position

Remove the gearbox cover and rotate the cutterhead until the four allen screws shown in Figure 3 are accessible. Loosen these four allen screws. The gearbox can now be removed from the planer, but in so doing, several parts will drop from the shafts and these parts must be captured while carefully pulling the gearbox outward and away from the planer, otherwise they will fall to the bottom of the gearbox. Referring to the exploded diagram in the “Operating Instructions and Parts List for Parks 12” Thickness Planer” documentation available on the OWWM website, the parts to watch out for are the outfeed shaft collar (Part A-2), both sprockets (Part A-4), chain (Part A-34), large gear (Part A-6), and input shaft gear (Part A-17). Figure 4 shows a woodruff key which must also be captured while removing the gearbox from the planer (for some unknown reason this key is not shown in the Parks documentation). Be sure and lay the chain aside with the two sprockets still engaged, so that both allen screws will simultaneously face upward during reassembly (if the planer had been assembled correctly, these parts should have been in this orientation prior to disassembly).

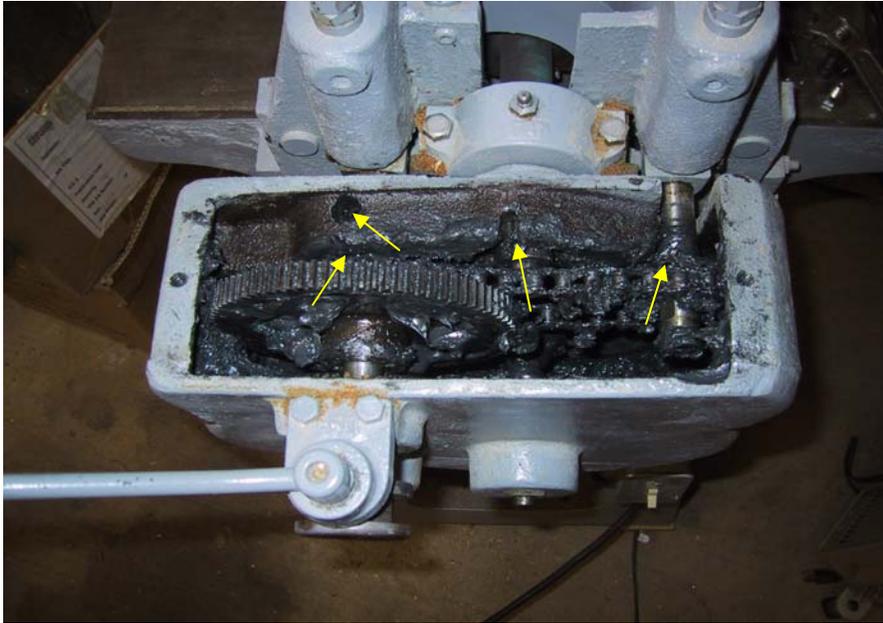


Figure 3 – gearbox internals, showing allen screws

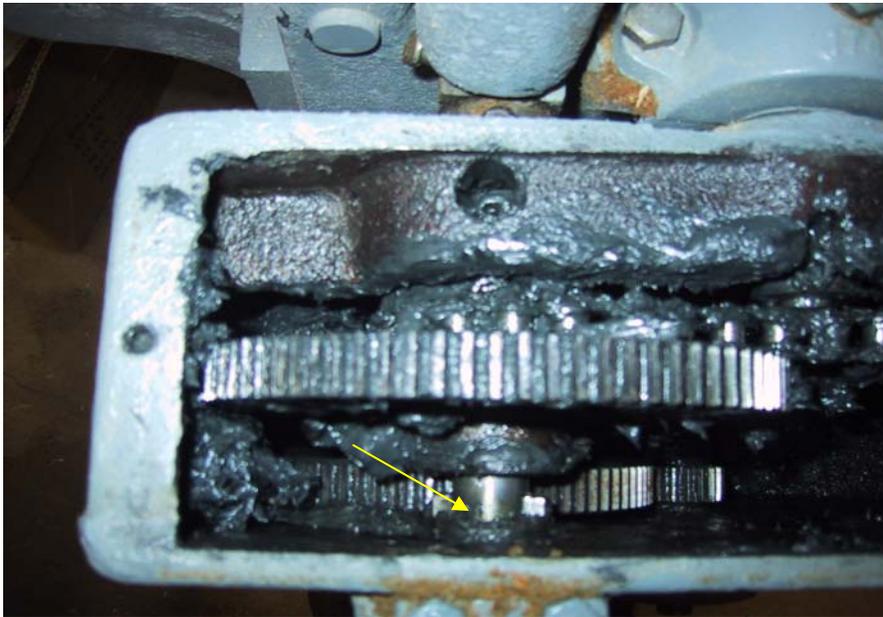


Figure 4 – woodruff key

With the gearbox removed from the planer, situate it on a drill press table with the surface oriented horizontally. I used wood blocking scraps beneath the gearbox to achieve this, and verified it with a small level. Lay the retainer over the gearbox slot with its mounting holes lined up with the horizontal line sketched earlier, and with the shaft hole centered on the gearbox slot. Using a punch, make two dimples in the gearbox casting, in the very center of the two retainer mounting holes – see Figure 5. I removed the grease from the upper corner of the gearbox, directly below the location of the to-be drilled holes, and stuffed a rag in this part of the gearbox to prevent the ingress of metal chips into the gearbox – it is extremely important to keep all metal

shavings out of the gearbox. Using plenty of oil on the drill bits while drilling, drill very slowly through the gearbox wall at the location of the two starter dimples made earlier. Be extremely careful to remove all chips from the area following each successively larger hole that is drilled. Finally, tap the holes with a 1/4"-20 tap (again using oil and proceeding very slowly) – see Figures 6 and 7. When removing the rag from the gearbox, be extremely careful to extract it slowly so that any chips on the rag do not wind up in the gearbox. I carefully wiped down the walls in this corner of the gearbox with a kerosene-soaked rag to catch any chips which might have been left behind, and then went over the same surfaces with my finger to double-check.



Figure 5 – dimples placed, ready for drilling



Figure 6 – tapping operation



Figure 7 – completed tapped holes (note that the retainer is erroneously upside-down in this photo – the shaft hole should be toward the bottom of the gearbox)

Assemble the retainer to the gearbox with two ½” long ¼-20 hex head bolts, washers, and lockwashers. Slide the oil seal into place behind the retainer. See Figure 8. Reassembly of the gearbox is the reverse of the removal operation detailed earlier, with the exception that the infeed roller shaft must be slid through the rubber oil seal as it sits behind the retainer. Work the gearbox back onto the shafts very slowly, first attending to the components that go on the outfeed roller shaft (outfeed shaft collar, sprocket, large gear), followed by the sprocket on the infeed roller shaft, and last, by the input shaft gear. The woodruff key must be placed in its corresponding keyway in the outfeed roller shaft at the exact point during reassembly when the keyway is visible just beyond the large gear – this takes a little patience but isn’t too difficult. When everything is back in position, ensure that all allen screws are lined up with the flats on their corresponding shafts and tighten accordingly. Replace the gearbox cover. Figure 9 shows the completed installation.



Figure 8 – retainer assembled to gearbox (note that the retainer is erroneously upside-down in this photo – the shaft hole should be toward the bottom of the gearbox)



Figure 9 – completed installation