

Instructions for installing a Shelix on a 16” Powermatic Model 160 thickness planer

1. Disconnect the power by unplugging the planer or turning off the circuit breaker.
2. Remove the dust hood and sharpener/jointer if one is attached.
3. Always use a rubber mallet, deadblow hammer, or a block of wood with a regular hammer when tapping the cast housing.
4. Remove the guard over the cutter head pulley on the left (motor side) of the planer.



5. Remove the large guard on the right of the planer that covers all drive gears, clutch, etc., and belts.



6. Remove all the belts.
7. Loosen the Allen head set screws and remove the motor (left) cutter head pulley, keeping track of the key for the pulley. It may be necessary to use a bearing puller to avoid damaging the pulley.



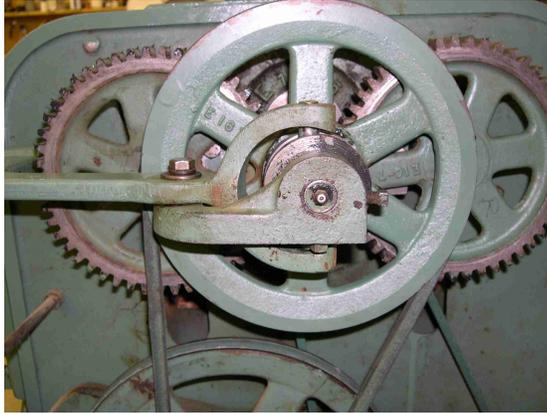
8. Remove the chip breaker by removing the two Allen head screws in each of the left and right chip breaker hangers.



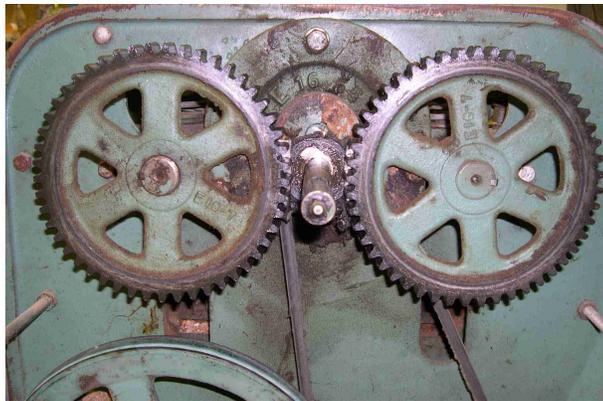
9. To avoid serious cuts and binding of the planer knives when extracting the cutter head through the chip breaker and pressure bar hangers, remove the old knives, shims, and lifters from the cutter head.
10. Remove the grease fitting and three bolts from the left bearing housing assembly.



11. Use a bearing puller to remove the left bearing housing assembly. (Most likely the bearing will remain on the cutter head.)
12. Loosen the two set screws in the in-out engagement lever and remove the lever and pulley from the mounting bracket.



13. Remove the large gears on the in-feed and out-feed rollers.



14. Remove the mounting bracket assembly on the right side to allow direct access to the cutter head shaft on the right and easier use of the bearing puller. Remove the four bolts in the bearing housing assembly.



15. Remove the grease fitting on the right bearing housing assembly BEFORE pulling the housing. Pull the right bearing housing assembly.

16. Once the bearing housing assemblies are removed, the old cutter head can be extracted either to the left or right. If the bearings remain on the old cutter head and are difficult or even if easy to remove, consider using new bearings.
17. Remove the pressure bar by removing the two nuts on the right and left sides, then rotate the pressure bar up to gain access to the two Allen head bolts that mount the pressure bar to the hangers.



18. Remove the Allen head bolts and the pressure bar.
19. Vacuum up old dust, wood chips, and bits of grease. Now is a good time to lubricate gears, pulleys, etc., while there is good exposure.
20. Install the new bearings on the Shelix. (Heating the bearings in an oven to 325 degrees F for 20-30 minutes facilitates sliding the bearings over the new shaft.)
21. Place a thick piece of cardboard on the planer table to cushion the new Shelix head. You may want to wrap the portion of the Shelix head that has the cutters with old newspapers, Saran Wrap or other material for protection while handling the cutter head.
22. Remove the cutters from the Shelix head on the motor drive side for about 5-6 inches or 5 cutters on the long rows and 4 cutters on the short rows. Do the same on the right side of the Shelix head for about an inch. This allows both the pressure bar and chip breaker hangers to slide over the Shelix head and will prevent the knives from getting cracked or chipped.
23. Slide the left (motor drive side) pressure bar and chip breaker hangers over the Shelix head and place the right pressure bar and chip breakers over the right side of the Shelix head. Be careful not to damage the cutters. Remember the chip breaker hangers are outside of the pressure bar hangers.
24. Angle the Shelix head into the planer by inserting the motor drive side first. Moving the head all the way to the left will allow the right side of the head to drop into position.

25. Insert long 7/16 inch bolts through each bearing housing assembly so that the bolts are just finger tight. Make sure the grease fitting holes in the bearing housing assemblies are oriented correctly. They should be at the 12 o'clock position or straight up.
26. Beginning on the left (motor side), slowly tighten each bolt in a rotating direction 1/4 to 1/2 turn to pull the bearing housing assembly evenly over the bearing and motor drive shaft. Seat the left bearing housing assembly completely before beginning on the right side. Replace the longer bolts with the original bolts from the planer.
27. After making sure no hangers are trapped between the bearing housing assemblies, tighten the bolts like the left side. Make sure the drive shaft on the right is centered as it comes through the bearing housing assembly as the housing is drawn tight to the planer.
28. Replace the right and left grease nipples in the bearing housing assemblies.
29. Replace the pressure bar.
30. Replace the chip breaker.
31. Place the small pulley and key on the right side of the cutter head shaft so the cutter head can be manually rotated to replace the knives.
32. Manually rotate the cutter head to check for binding.
33. Clean all grease from the cutter head. Inspect all the knives. Rotate chipped knives and replace cracked knives.
34. Replace the knives that were removed to allow installation of the Shelix.
35. Replace the motor drive pulley and key on the left shaft of the cutter head. Do not install the belts yet.
36. Replace the mounting bracket assembly on the right.
37. Replace the right and left gears for the in-feed and out-feed rollers.
38. Replace the feed roller gear pinion that fits on the mounting bracket assembly.
39. Make sure all gears turn freely and that all set screws are tightened.
40. If any of the belts are worn, this is a good time to replace them. Install all belts.
41. Install the right and left covers.

42. Make sure all tools, padding, etc., are clear of the cutter head and rollers before turning on the planer.