

# Instructions for installation of a SHELIX on a Powermatic Model 201 thickness planer

Thank you for considering "cutting edge technology."

Most woodworkers know that a shear cut is far better than a straight cut. They also know that a staggered cut is much better than just a single straight knife and is quieter and a lot easier on your dust collection system.

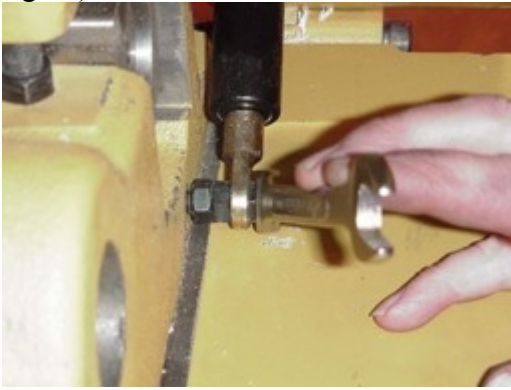
If you just happen to plane a nail or staple, it is not necessary to replace expensive knives the full length of your planer head! Replace the 2 or 3 small inexpensive knives and you're ready to go! You might expect to pay a small fortune for a journal head with these features. Here at Byrd Tool Corp we can manufacture a journal head to your specifications for typically a fraction of the cost you might expect. Don't be fooled by a head that looks like it is helical when the knives are square with the cut! This is common practice, but our heads are anything but common!

1. Be sure the machine is disconnected from the power source.
2. Keep the protective wrap on the SHELIX head!
3. Always use a rubber mallet, deadblow hammer, or a block of wood with a regular hammer when tapping the cast housing.
4. Brush or blow off the chips from the machine and clean the floor around the machine. If a bolt or washer is dropped, it is so much easier to find on a clean floor!
5. After the machine and area have been cleaned, open the top cover by first removing the 2 bolts on the front of the cover. (see figure)

**(CLICK ANY FIGURE FOR LARGER VIEWING)**



6. Disconnect the pneumatic cylinders (one on each side) to allow the cover to swing backward. (see figure)



7. Put a board on the table of the machine and adjust it up until it comes in contact with the cutter head.

8. With the handle of the handwheel rotated to the top, loosen the adjustment lock and remove. (see figure)



9. Pull the handwheel straight off taking care not to drop the key positioned at the top of the shaft. (see figure)



10. Remove the left side cover (pulley side of machine). (see figure)



11. Remove the right side cover (handwheel side of machine). (see figure)



12. Remove the two belts by rotating them off the pulleys. It is not necessary to release motor tension before doing this. (see figure)



13. Remove the pulley from the end of the cutter head, being careful to keep the key on top of the shaft. (see figure)



14. Remove the key and then remove the spacer from the end of the shaft. (see figure)



15. Remove the nuts from the bottom of the feed roller tensioners. The spring and cap from the outfeed roller will easily fall off the end of the threaded shaft. The infeed spring will easily come off later when the top assembly is lifted. (see figure)

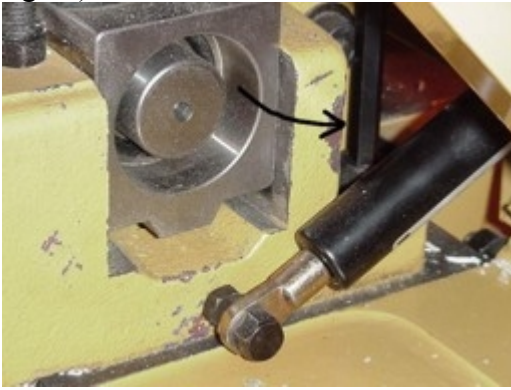


16. Remove the center socket head capscrew. (see figure)





17. Remove the two socket head capscrews that are located on each end of the right-hand assembly. (see figure)



18. Take out all of the screws from the right assembly. (see following 3 figures)



19. Place the handwheel back on the shaft with the key in place and adjust the table up enough to force the assembly off of the positioning pins. (see figure)



20. Place a small strip of 1/2" plywood under the assembly and let the table back down off of the cutterhead. (see figure)



21. Once the assembly is propped up by the plywood, remove the front roller tension spring and caps through the opening in the handwheel bracket. (see figure)



22. Remove the roller tension bolts (see figure)



23. Gently tap off the assembly from the connector rods, rollers, cutterhead, etc. (see figure)



24. Gently tap the cutterhead from the pulley end making sure it is supported by a block so it won't drop to the table. Completely remove the cutterhead from both assemblies and set it aside.

25. Be sure old bearings are removed from both assemblies.

26. If the SHELIX didn't come with new bearings, install the new bearings before putting the head in the machine. (bearing sizes: 6209 and 6007 sealed or shielded) (see figure)



27. With the right side assembly completely removed, gently place the SHELIX into position and guide the pulley end through the left assembly. (see figure)



28. Tap the head into the left side assembly until the bearing is seated against the lock ring. You may need to adjust the table up or down to properly align the head to more easily tap in. (see figure)



29. To allow up to approximately 1/4" depth of cut, remove the feed restricter bushing by loosening the set screw in it and sliding it off the end of the rod.

30. Align the assembly that was removed and one by one, starting from the outfeed end, start the different shafts into their proper holes. Loosening the shafts from the other end will make it easier to start them.

31. After all of the shafts are started, continue to tap the end of the housing until the positioning pins are aligned.

32. While the plywood is still under the housing, start threading the roller tension bolts into the bottom of the feed roller bearing blocks.

33. Assemble the spring and top cap on the front feed roller tension bolt guiding it through the hole in the handwheel bracket.

34. Raise the table enough to release the plywood, then remove it.

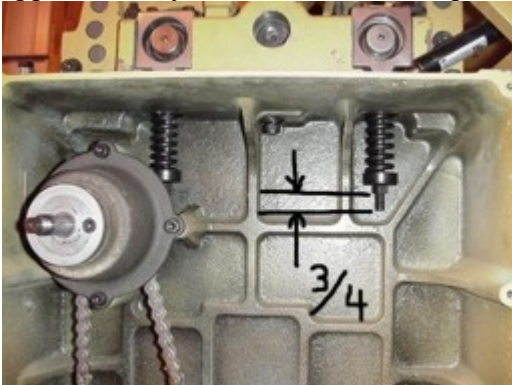
35. Lower the table allowing the assembly to drop down and locate on positioning pins. Tapping the housing in one direction or another may be necessary in order for it to properly align and go onto the base. The pins are visible if you look down through the positioning holes from the top of the housing.



36. Finish tightening both roller tension bolts with an 8mm wrench. (see figure)



37. Assemble the bottom cap on the front roller spring and screw the retaining nut on the bottom until approximately 3/4" of threads is exposed. (see figure)



38. Assemble the front roller spring assembly in the same way.

39. Screw in and tighten the center cap screw. (see figure)



40. Assemble the two cap screws (one on each end of the housing) and tighten assembly to the base.

41. Remove the handwheel again and assemble the side cover.

42.
  - Reinstall handwheel
  - install pulley spacer
  - install pulley key
  - install pulley (be sure pulley extends past the shaft)
  - install washer and socket head capscrew in the end of the shaft
  - roll the belts back onto the pulleys
  - install the left side cover over the belts
  - attach the pneumatic cylinder ends for the cover
43. Remove the protective cover on the SHELIX by slitting it longways between rows of knives. (see figure)




44. Close the cover and replace the two bolts on the front of the cover.

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For questions/comments send email to: [mail@byrdtool.com](mailto:mail@byrdtool.com)

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