

# Instructions for installation of a SHELIX on a 15" or 20" "4 post" 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!

- A. Be sure the machine is disconnected from the power source.
- B. Keep the protective wrap on the SHELIX head!
- C. Always use a rubber mallet, deadblow hammer, or a block of wood with a regular hammer when tapping the cast housing.
- D. 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!

## **NOTE: ALL HEX AND ALLEN BOLTS ARE METRIC**

1. Start by removing the side belt guard roll off the belts. (releasing the belt tension is not necessary)



2. Remove pulley bolt, rotate the cutterhead until the key is in the upright position, then remove the pulley and key.



3. Remove the top cover/collector shield and the handle. (whether you have the side or top mounted handle, the key will usually fall free)



4. Before removing the side gear cover, remove the guard located on it's back side at each lower corner.



5. Loosen the idler spring, and move the idler up out of the way.



6. remove the three bolts from the gears to expose the keys. It should be possible to rotate the cutter head enough to align the keys in an upward position.



7. Pull all three gears off at the same time.... keeping the chain in tact and then lay it aside.



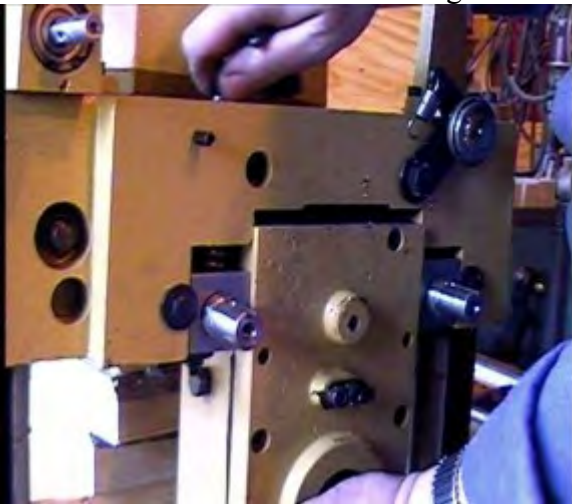
8. Insert six 2 X 4 blocks between the cutterhead and the table, then reinstall the hand and the key. Position to the cutterhead to let it rest on the blocks.



9. Loosen four bolts holding the gear box.



10. Raise or lower the table enough for the head to clear the casting, then remove the bolts.



11. Keeping the blocks in place, drive the head out from the pulley end.



12. Remove the head and gearbox together.



13. The bearing will normally stay on the journal.



14. If your machine has an outfeed roller assembly, the head and gearbox can lay across them for a convenient work area.



15. Drain the gear oil into a clean container.



16. Loosen the five bolts on the gearbox. Separate it by tapping at the seam toward the outside of the gearbox taking care not to damage the thin rubber seal.



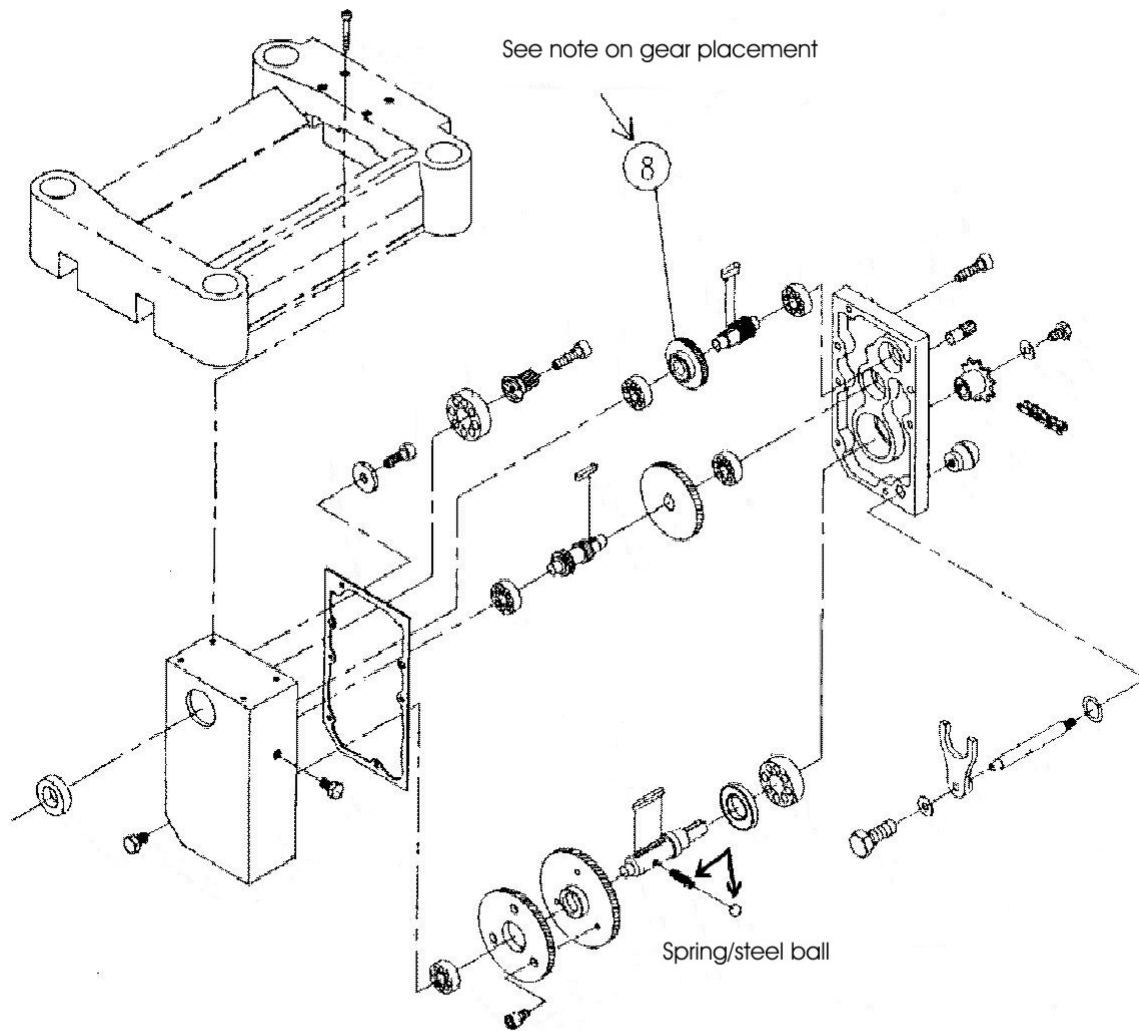
17. Remove the bolts and completely separate it.



18. Shows gear #8



# Gear Box - Exploded View



19. Remove the bolt inside the helical gear and remove them both.





20. Before driving the cutterhead from the bearing and housing, reinsert a spare M6 screw back into the journal end. If you use the original screw, it will probably be damaged.

21. Supporting the box, remove the cutterhead by tapping on the screw.



22. It may also be necessary to tap on the back of the box using a block of wood and a hammer.



## **INSTALLING THE NEW SHELIX**

23. If a new bearing is to be used in the gearbox, remove the washer and screw. Carefully remove the oil seal from the back side and press out the bearing.



24. At this time, install the bearing on the pulley end of the new head (snug press fit). The pulley can be use to seat the bearing. With the outside of the pulley (large OD) against the bearing, tap it into place.



25. Installing the head in the gearbox by pressing it in the new bearing. Reinstall the oil seal.



26. Start the journal end through the back of the bearing, using a socket against the face of the bearing will aid in driving it into position. The end of the bearing and the journal should be flush.

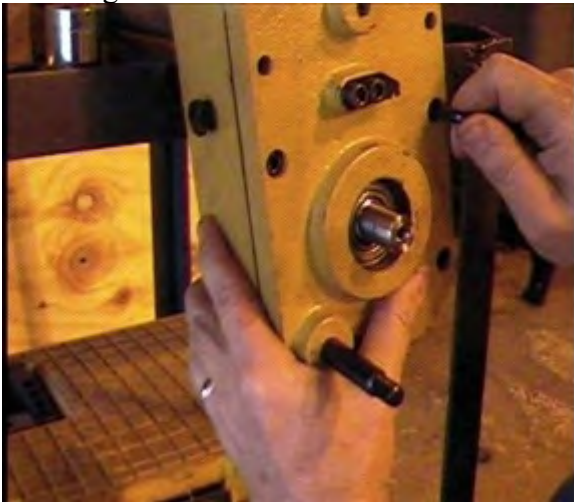


27. Reinstall the washer, screw, helical gear, and bolt.

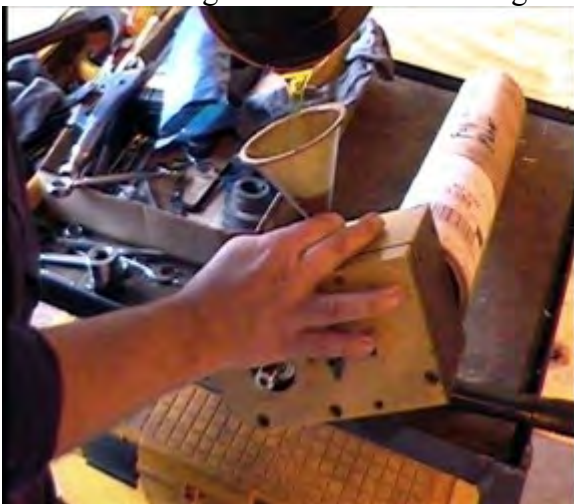
28. Install the gasket and reassemble the gearbox taking note of the gear placements using the previous drawings and pictures, tapping it into position.



29. Tighten all of the screws in an alternating sequence.



30. Refill the gearbox with the 50 weight oil that was removed.



31. With the blocks still in place, install the head. Make sure the protective wrap is still on the head until it is firmly in.



32. Tap the gearbox to seat bearing into place.



33. It may be necessary to turn the handle in order to align and start the bolts, then tighten them.



34. Reinstall the keys and gear/chain assembly, Tension roller spring, side cover, and the handle with it's key.



35. Install the key and the motor pulley. Make sure the pulley is flush or extends slightly past the journal end. Install the washer and bolt. Roll the belts back on and replace the guard.



36. The protective wrap can now be removed by slitting it lengthwise between two rows of knives. Rotate the head while rolling off the wrap.

37. Reinstall any remaining covers or guards.

# **FINAL ADJUSTMENTS**

The bedrollers need to be kept clean and normally as low as possible.

Outfeed roller and chip breaker are factory set at approximately .040 inches below the cutting circle.

**GO HOME**

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

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