

Installing a Shelix Cutterhead in A Jet JPM-13CS Planer/Moulder

Installation of a Shelix Cutterhead on the Jet JPM-13CS Planer/Moulder is a bit different than the generic 4-post planer directions readily available. I figured the installation out as I went, and came up with the following process:

You will need: Metric sockets, metric hex wrenches, snap ring pliers, screwdrivers, pliers, deadblow mallet or hammer; lubricating oil & grease, possibly a bearing puller. New bearings if you plan to replace them as part of the installation.

1. Unplug the machine from the power source.
2. Remove the Dust Hood, Gear Box Cover, Left & Right Head Body Covers and the Motor Access Door. Remove knives, lock bars and lock bar spacers from the existing cutterhead, to facilitate safe handling and to allow room to remove the cutterhead from the Head Body. Place a 2X6 wood block on the Table under the Cutterhead, and raise the Table to support the Cutterhead during disassembly.
3. Remove the drive belts by rolling them off the pulley, and remove the pulley and key from the cutterhead shaft. If the pulley doesn't pull off easily, use a bearing puller.
4. Using a brush and/or compressed air, clean the machine of dust and wood chips, then sweep the floor in your work area to facilitate recovery of any dropped parts.
5. Use a 5mm hex wrench and snap ring pliers to remove the two drive gears and the two sprocket/chain sets on the outside of the Gearbox. Remove the outer sprocket/chain set all at the same time, and keep the sprockets and chain set intact, then remove inner sprocket/chain set, keeping them intact. Make a note of where spacers are placed to true up the sprockets so they are in line with each other. Keep this set of gears, chains and sprockets, along with their attaching cap screws, snap rings and washers in a separate container, to simplify re-assembly.
6. Remove Gearbox Cover, by removing the four cap screws that attach it to the Gearbox Body. Some of the gears may stay in the Gearbox body when you remove the cover, held in place by grease. Remove the gears from the Gearbox body and place the gears and shafts in the appropriate positions in the bushings in the Gearbox Cover. Clean old grease from the gears and Gearbox cover as you place the gears in their appropriate positions.
7. Remove the small drive gear from the end of the Cutterhead shaft which protrudes into the Gearbox, using a small metric socket wrench on the flats machined onto gear's protruding stub. This is a left-hand thread, so turn clockwise to loosen. Remove and keep together the drive gear, washer, and bushing (if the bushing comes out).

8. Remove Gearbox Body from the Head Body, by removing the three cap screws that go through the Head Body down into the top of the Gearbox Body. You may have to start the Gearbox Body, with its seated bearing, off the Cutterhead shaft journal by tapping the Body lightly with a wood block and mallet. Clean the old grease out of the Gearbox Body.
9. With the Gearbox out of the way, drive the Cutterhead out of the Head Body from the Pulley end, using a wood block and a deadblow mallet or hammer. You will have to line the Cutterhead up to clear the hole in the Head Body as it comes out. The bearing may stay in the Head Body or it may come out on the shaft.
10. If you are re-using the existing Cutterhead bearings, leave the old bearing in the Gearbox Body. Remove the existing bearing from the pulley end of the Cutterhead shaft for use on the new cutterhead. If using new bearings, remove the old bearing from the Gearbox Body and press in the new one. Do not press the bearing onto the new Cutterhead's pulley end at this point.
11. Place the new Cutterhead in position on the supporting wood block on the Middle Table, and press or tap the bearing in the Gearbox body onto the Cutterhead shaft, moving the Gearbox Body into position so it can be re-attached to the Head Body. You may have to stabilize the Cutterhead with wood shims against the Head Body at the pulley end, to keep it in position as you tap the Gearbox bearing onto the shaft journal. I found that a long socket, sized just larger than the shaft, seats nicely against the inside ring of the bearing and pushes it nicely onto the journal. Once the bearing is seated on the shaft, install the drive gear with its attendant parts on the end of the Cutterhead shaft inside the Gearbox. This keeps the bearing seated securely on the shaft and fully inserted into the Gearbox Body. Now re-attach the Gearbox Body to the Head Body. The new Cutterhead should now be positioned so that it sits in the middle of the space between the left and right sides of the Head Body—equidistant from each side.
12. Tap the bearing onto the Cutterhead shaft at the pulley end, and into the seat in the Head Body, using a wood block and a mallet. Use alternate taps on the small inner ring of the bearing, which seats it on the shaft, and on the outer ring of the bearing which seats it in the Head Body. Avoid heavy blows that would damage the bearing. Once the bearing is seated properly, spin the cutterhead by hand to make sure it turns free and true, with no catches or wobble. Use leather gloves to protect your hands when handling the cutterhead.
13. Pack fresh grease into the Gearbox body halves, and install the Gearbox Cover onto the Gearbox Body. You may have to adjust the gears a bit to get them to mesh properly as you slide the shafts in the Cover into their matching bushings in the Gearbox Body.
14. Re-install the sprocket/chain sets and drive gears on the outside of the Gearbox just as they were originally, taking care to put the spacer washers in place to

- keep the sprockets lined up properly. Lightly grease the chains and gears. Spin the Cutterhead by hand to assure that the Cutterhead spins freely, and that the sprockets and chains drive the feed rollers smoothly with no binding or catching.
15. While the covers are off, lubricate the four posts with 10W oil, and lightly grease the Leadscrews, chains and sprockets..
 16. Adjust the feed rollers so they are parallel to the Table, and with the proper drop from the Cutterhead. Adjust spring tension as needed. If your hands are greasy, clean them before handling the feed rollers and V belts.
 17. Install the Pulley and V belts; tension belts per manufacturer's specification. Re-install all covers. Adjust the outfeed and infeed Chip Deflectors per the manufacturer's recommendations.
 18. Attach dust collection, plug in and power up the planer, and enjoy your new helical cutterhead! Test plane a board or two to fine-tune feed roller position and tension and the Chip Deflector positions.