Adding The Gear Drive Unit

The gear drive has several parts and should be installed in the following order:

Loosen the set screws that secure the front slider rod. Slide the rod to the right until the left router plate bearing and the left stop collar are off the rod. Slide the router plate connecting block over the rod so that it is between the two router plate bearings then slide the rod back through both bearings. Place the stop collar back on the rod and then add the belt tensioner. The set screw in the tensioner should be up and the idler sprocket on the left side. Place the left end of the rod back in its bracket with about 5/8" of the rod extending beyond the left side of the bracket. This is where the gear drive unit will go. Attach the router plate connecting block using the two #10 flat head socket screws.

Insert the lead screw through the bottom hole in the right bracket, then place the 3/8" lead screw stop collar on the lead screw. Thread it through the brass or nylon nut in the router plate connecting block. Insert the 1/4" bronze sleeve bearing in the lower hole of the left bracket and then put the lead screw end through it.

Slide the 5/8" hole of the gear drive over the left end of the front rod. The lead screw end will fit in the bushed hole beneath it. Tighten the set screw in the side of the gear drive and the set screws which secure the front slider rod. Install the crank handle on the right end of the lead screw and the nylon gear on the left end so that it engages the lower gear of the drive. Make sure that everything works smoothly and the crank turns easily. There are many places where the mechanism might bind so be sure to check the unit for alignment.

Install the O ring, index, sprocket and nose nut on the lathe spindle. A set screw extends through the rim of the sprocket and it will engage one of the holes in the index plate.
Place the \( \frac{3}{8}" \) magnet on the end of the set screw where it extends through the sprocket. This will tell you where the pin is and also keep the sprocket against the index plate.

There are three different size sprockets included which can be used to drive the spindle. The picture on the right shows a set-up using the smallest sprocket and the primary output of the gear drive.

There is also an assortment of timing belts to use with the different sprockets. The gear drive has two different speed output shafts on which the sprockets can be placed. The timing belt is kept under tension by the tensioner which can be adjusted for this purpose. Be sure that the output sprocket and the index sprocket are lined up. Adjustments can be made by loosening the front rod set screws and sliding the front rod and gear drive assembly back and forth until alignment is achieved.

When using the Lathe Wizard, it is always better to make several light passes than one heavy one. As you experiment with the unit you will learn what is possible how best to achieve it. Due to the unavoidable backlash in the mechanism it is better to cut in just one direction, always lifting the cutter and returning to the starting point before making another pass.

**NEVER TURN ON THE LATHE WHEN THE GEAR DRIVE IS CONNECTED.**

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