



## DRO Backlash Assembly

The following are instructions for assembling your DRO handwheel on the Z-axis of your lathe. With proper assembly you will be able to reduce the backlash in your machine to .002" or less.

1. This is a layout picture of what you should have for your Z-axis.



FIGURE 1—From left to right: Leadscrew, 1/4" washer, DRO Leadscrew Thrust, two shim washers, DRO handwheel.

2. The red arrow shows the surface that should be making contact with the Leadscrew Thrust and the shim washers (no space in between).

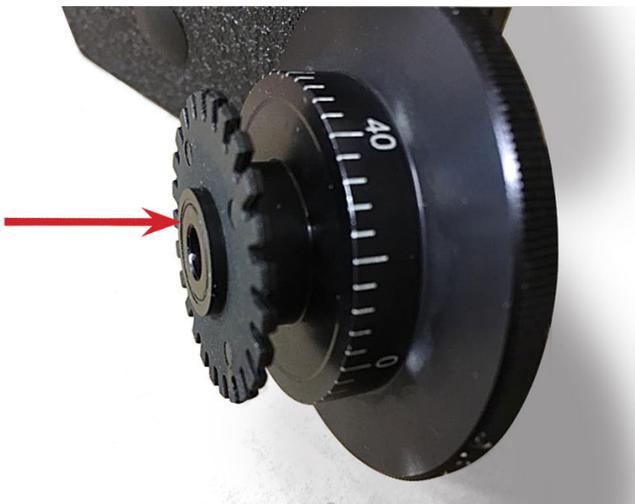


FIGURE 2—Close up of DRO handwheel

3. This is what it looks like with everything assembled off of the machine.



FIGURE 3

4. In order to get rid of the backlash, you are sandwiching all of the parts between the shoulder on the lead screw and the contact surface of the handwheel.

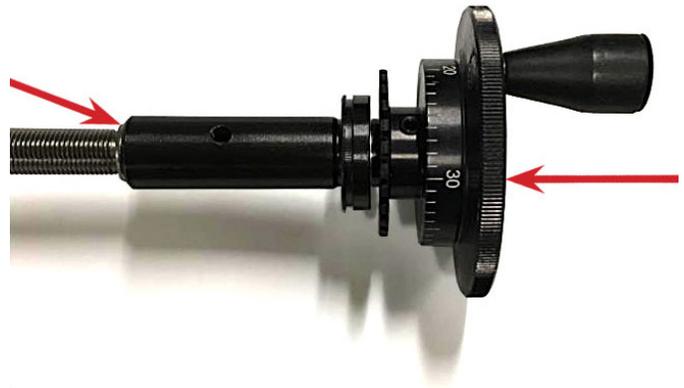


FIGURE 4—Red arrows show the shoulder on the lead screw and the force point on the handwheel to sandwich the washers

5. The best way to do this when the handwheel assembly is on the machine is to place a piece of wood between the crossslide and the front of the headstock (see Figure 5).
  - A. Move the crossslide towards the headstock until it pinches the wood between them.
  - B. Then you turn the handwheel a bit more to load the lead screw washer against the lead screw thrust.

- C. Loosen the setscrew in the handwheel, and then turn the handwheel 90 degrees so the setscrew will bite into a fresh area on the leadscrew undercut. Before you tighten the setscrew, push the handwheel towards the lathe to sandwich the shim washers and get rid of any slop on the handwheel side.
- D. Now, with the force exerted on the handwheel, tighten the setscrew.
- E. Move the crossslide away from the headstock.
- F. Turn the Z-axis handwheel back and forth. There should be less than .002" backlash. You can get it down to .001" - .0015", but the handwheel will be tight and harder to move.

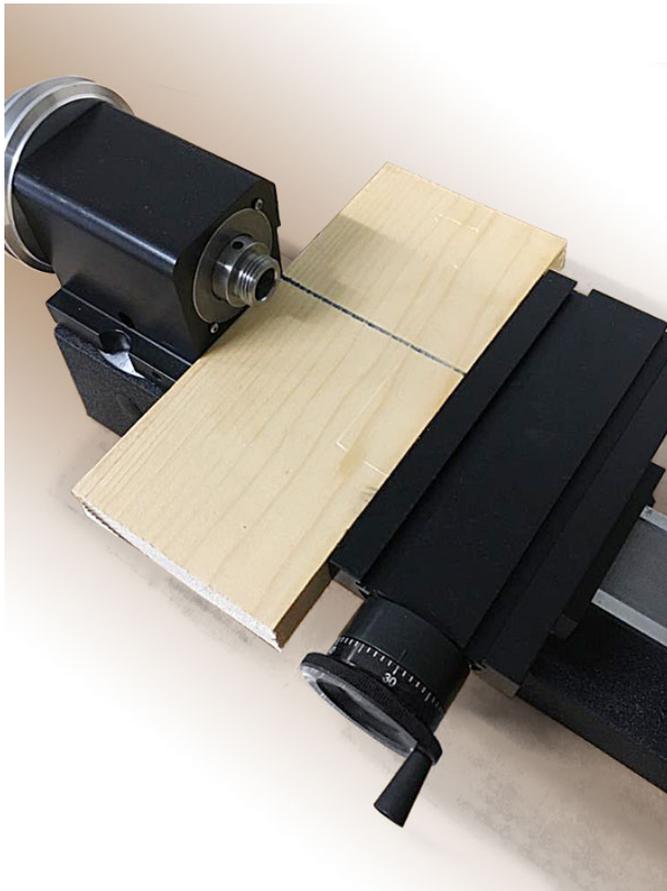


FIGURE 5—Wood block

Assembly view focused on leadscrew washer

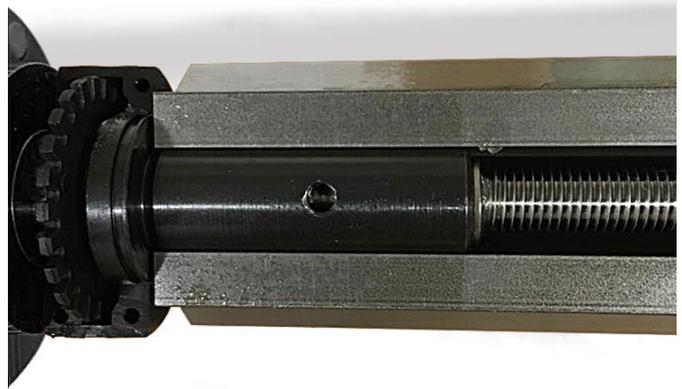


FIGURE 6

Assembly view focused on handwheel and leadscrew thrust,

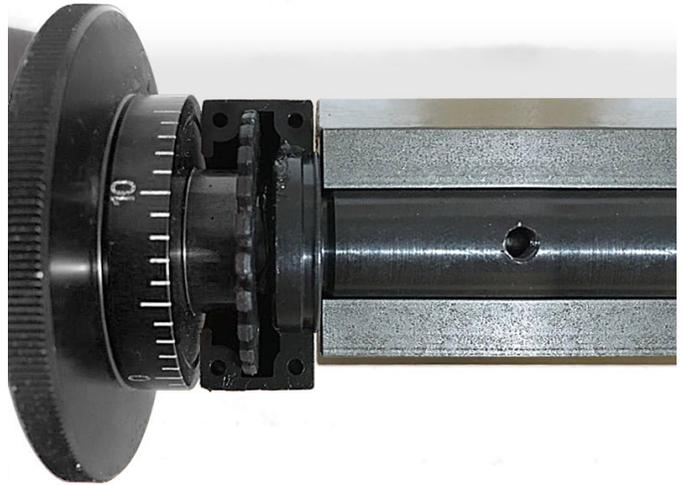


FIGURE 7

Thank you,  
Sherline Products Inc.