SHERLINE PRODUCTS
INCORPORATED 1974

Adjusting the Anti-Backlash Components of a Sherline Lathe

Troubleshooting Lathe Anti-Backlash Problems

The following instructions walk you through the steps for diagnosing and adjusting the backlash if the anti-backlash nut (P/N 50130L/51130L) is coming out (see Figure 1).

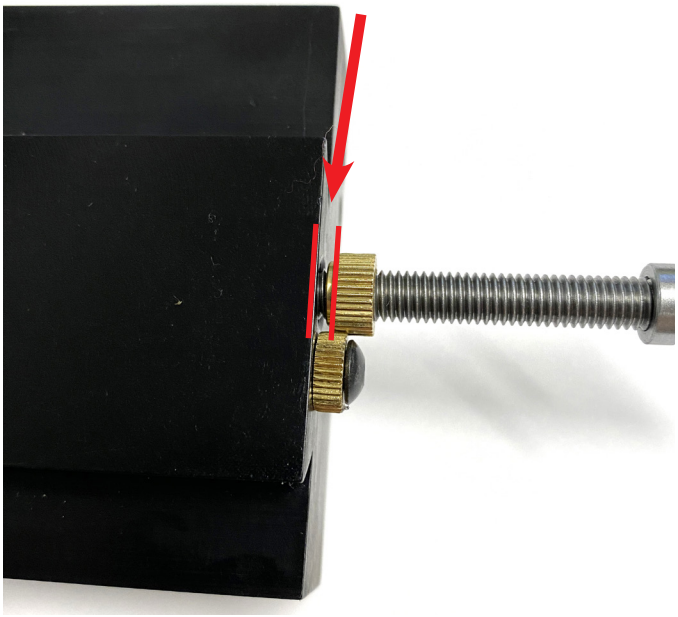

FIGURE 1—The red arrow is pointing to the gap between the anti-backlash nut and the lathe saddle.

The only way that the anti-backlash nut can move away from the saddle is:

1. The backlash lock (P/N 50150) has come loose and the anti-backlash nut is slowly turning with the slide screw.
2. The slide nut (P/N 40890/41890) is loose, and it is being pulled out of the saddle (see Figure 2).

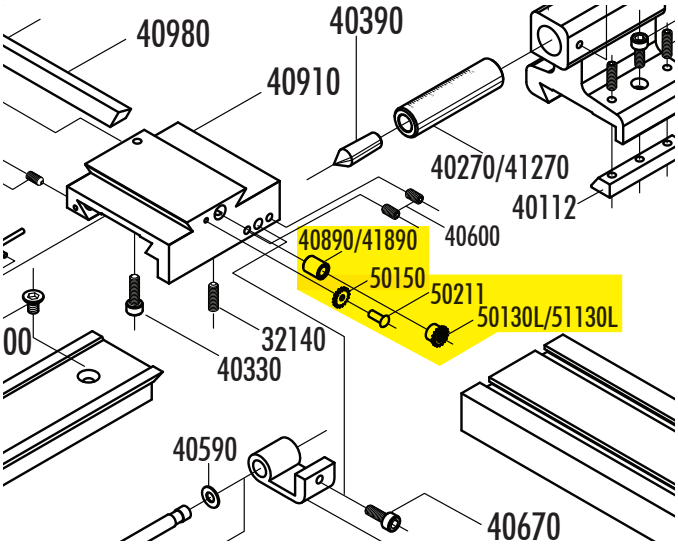

FIGURE 2—The component part numbers in this exploded view are highlighted in yellow for your reference.

If the backlash lock is loose, readjust the anti-backlash nut and tighten the backlash lock again.

If the slide nut is coming out, follow these instructions.

1. Thread the slide nut and the anti-backlash nut onto the slide screw as shown in Figure 3.

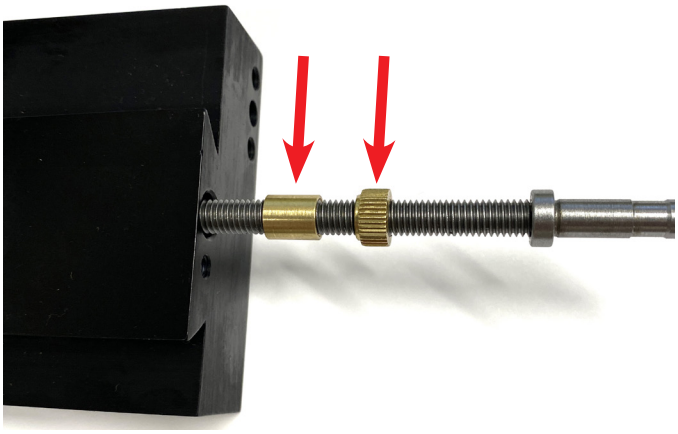

FIGURE 3—The left arrow is pointing to the slide nut (P/N 40890/41890 and the right arrow is pointing to the backlash nut (P/N 50130L/51130L).

2. Insert the slide screw assembly into the lathe saddle until the slide nut bottoms out on the shoulder of the counter bore as shown (see Figure 4). The end of the slide nut should be approximately .070" below the face of the lathe saddle.

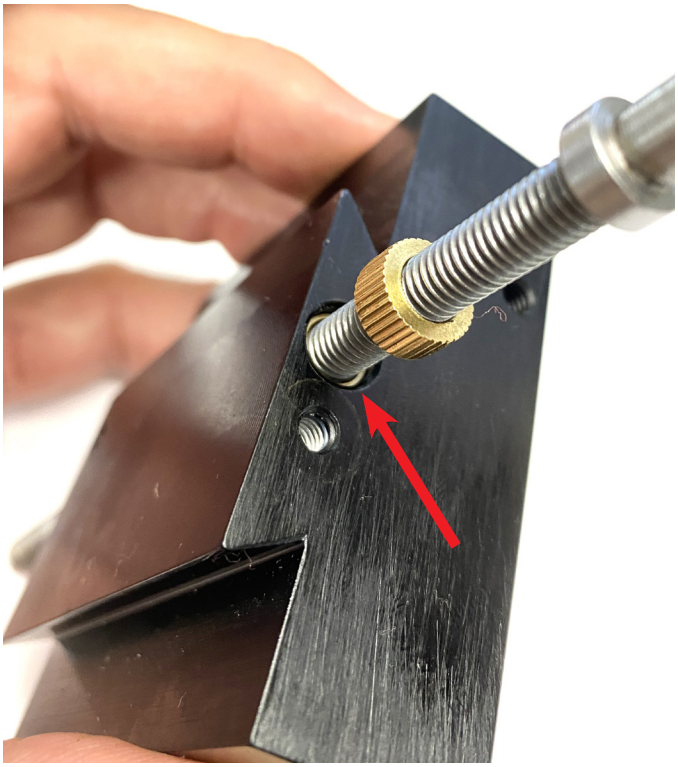

FIGURE 4—The red arrow is pointing to the slide nut. Note that it is below the face of the saddle.

3. While pushing against the end of the slide screw to keep the slide nut in place, thread the anti-backlash nut down until the recessed shoulder is inside the c-bore on the lathe saddle (see Figure 5).

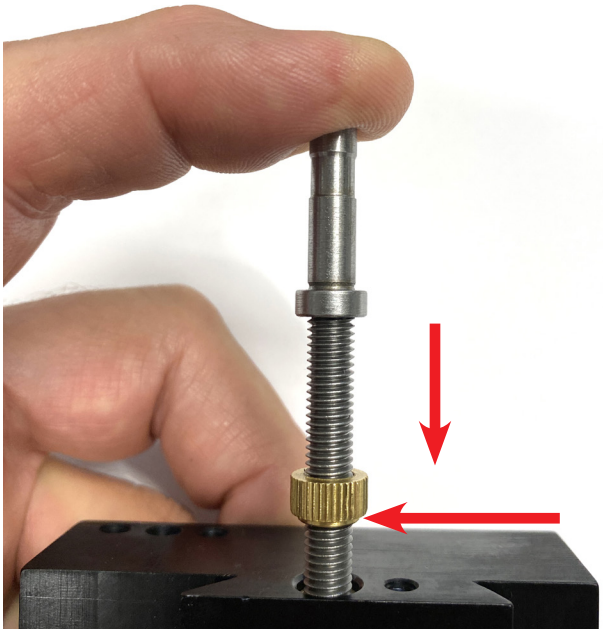

FIGURE 5—The vertical arrow shows the downward force needed to keep the slide nut in place while threading the anti-backlash nut into place. The horizontal arrow is pointing to the shoulder on the backlash nut, which sits inside the c-bore on the saddle.

4. Thread the anti-backlash nut down until the body is flush with the face of the lathe saddle (see Figure 6).

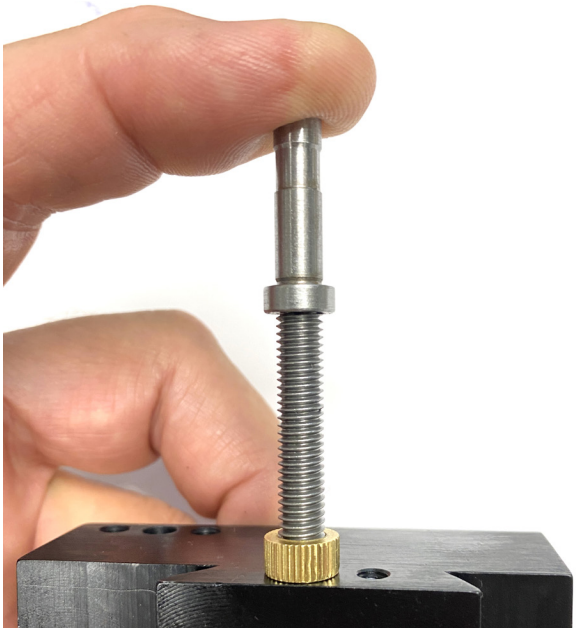

FIGURE 6

5. Now pull the entire slide screw assembly out of the lathe saddle. There should be a slight gap between the slide nut and the anti-backlash nut.

   NOTE: On all of our newer lathe saddles, the counter bore depth is deep enough so there will be a gap. If there is no gap, you will need to remove the slide nut and sand the end of the nut down about half of a thread length. Then reinsert the assembly into the lathe saddle as described previously.

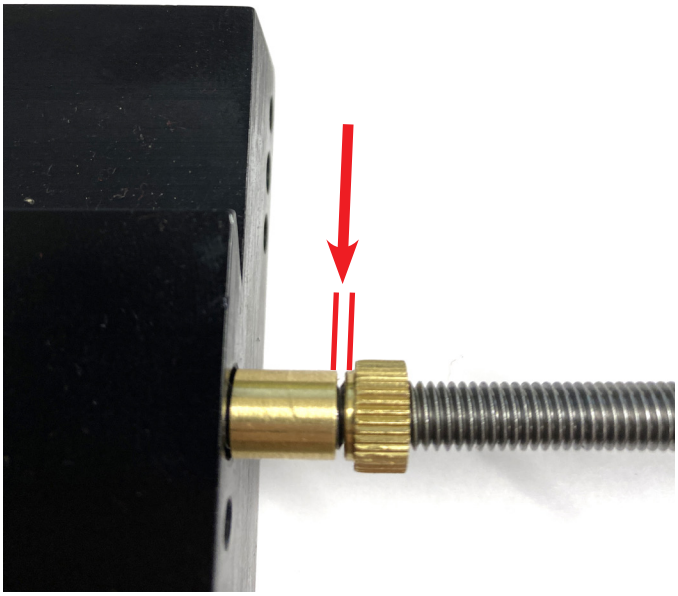

FIGURE 7—The red arrow is pointing to the gap between the slide nut and the anti-backlash nut.

Now comes the critical part!

6. With the anti-backlash nut threaded up away from the saddle, force the slide nut to the bottom of the counter bore. Then begin slowly tightening the 10-32 set screw

(P/N 32140) with a 3/32 Allen wrench (see Figure 8).

FIGURE 8

7. Tighten the set screw until you feel it make contact with the side of the slide nut. Then proceed to tighten the screw slightly, turn the slide screw to feel for resistance, and repeat until it is hard to turn the slide screw. When you first feel resistance when you turn the slide screw, this is because the set screw is collapsing the side of the slide nut. Generally, you will feel resistance and if you turn the slide screw back and forth a couple turns, the slide screw will free up and move smoothly again. At this point, tighten the set screw a bit more and turn the slide screw to loosen the fit. If it becomes too hard to turn the slide screw, then you have overtightened the set screw and you will need to back it off very little. If you can still force the slide screw to turn, then make it turn 5-10 revolutions and it should start to move smoother (you are just reforming the thread in the slide nut on the set screw portion of the slide nut, and this will give you a slightly tighter fit which will wear in very quickly during use).

   This set screw is the only thing that is holding the slide nut in place. If it comes loose, the slide nut and anti-backlash nut will move. Therefore, the set screw needs to be as tight as possible.

8. Now assemble the anti-backlash lock and adjust according to the instructions, *Lathe Assembly and Backlash Adjustment* (https://sherline.com/wp-content/uploads/2016/04/lathe_bk_lash_inst.pdf).

Thank you,
Sherline Products Inc.