

TIP 92 — Cutting Threads with the Sherline Compound Slide/Russ Cupan

Assembling a True Compound on the Lathe

Here is a way to mimic the features of a compound tool holder that is usually found on a larger lathe. You will need a Sherline compound slide (P/N 1270), the Sherline Thread Cutting Attachment (P/N 3100), a headstock spacer (P/N 1297), and a 1/4" rocker tool post (P/N 3057).

If you have a Sherline compound slide made prior to 2017, you will need to modify the compound slide by drilling and tapping a 10-32 hole in the top of the slide.* The hole is centered on the width and is .625" from the end. Drill the hole only .430" deep to avoid breaking through into the leadscrew channel.

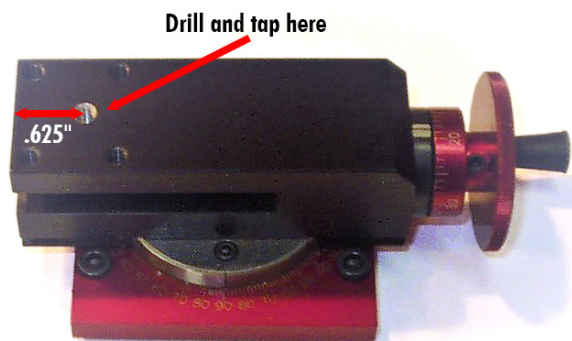


FIGURE 1—*NOTE: In 2017, Sherline modified the design of the compound slide to accommodate the Quick-Change Tool Post (P/N 2250). You must use the Headstock Riser Block (P/N 1297) to use the Quick-Change Tool Post, or any other tool post, in conjunction with the Compound Slide. Please see the [1270 Instructions](#) for mounting details.

The tool post is shortened by milling .350" from the bottom of the holder to get a 1.150" top-to-bottom dimension. Use a 10-32 x 1-1/2" long SHCS to attach the tool post to the top of the slide.

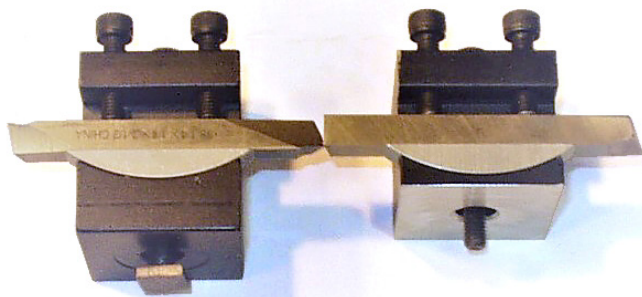


FIGURE 2—L: Before modification; R: After modification.

Install the spacer block under the headstock, put the compound slide on the crossslide and set it to an angle of 61 degrees* for threading, attach the tool post, align the cutting tool and it's ready to go. For ways to thread with the headstock spacer in place, see [Tip #11](#).

*NOTE: In regard to the 61 degrees setting for the compound slide when cutting a thread, that is the intentional setting. I had been taught to do that so there would be a burnishing or polishing action on the pressure side of the resulting thread.

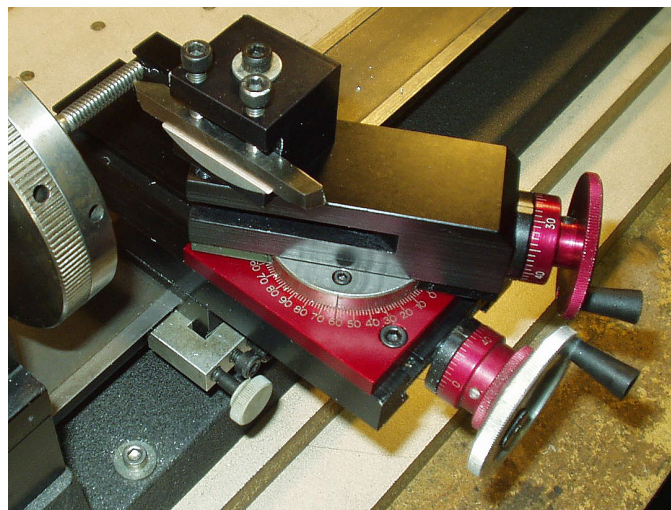


FIGURE 3—This photo shows the compound slide set to 61°.

Thanks,
Russ Cupan

Thread-Cutting Methods

Figure 4, on the following page, shows the three basic methods of cutting a thread.

- A. Using the crossslide to move the tool in for each pass and the cutter cuts on both sides. With each successive cut, the cutter has more surface area engaged with the part.
- B. Using the compound slide to advance the cutter. With this method each successive cut is cutting primarily with the lead edge of the cutter with the backside taking a slight cut. In this diagram, the compound slide would be set to 59 degrees; the lead edge would be doing all of the cutting, and the back side would have a 1 degree clearance from the thread. Sherline recommends setting the

compound slide to 60 degrees, but 1 degree in either direction is well within tolerance.

- C. A Zig-Zag cutting pattern, which can only be generated on a CNC machine that has a special Can Cycle. This can't be done on a Sherline machine.

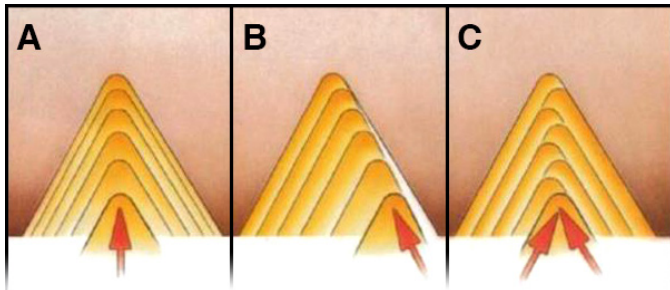


FIGURE 4—Illustrates the various thread-cutting methods.