

CAUTION!
Do not over tighten the screws holding the tool or the compound. Distortion of the tool or damage to the crossslide table slots can occur.

**SHERLINE
PRODUCTS**
INCORPORATED 1974

Compound Slide

P/N 1270 (Metric 1280)

Use of the Compound Slide

A Compound Slide is used to cut angles or tapers that cannot be cut by “swinging the headstock” (See the *Assembly and Instruction Guide*, P/N 5326, under the section on Taper Turning). The slide has 1.25" to 1.75" of movement, depending on the angle. The cutting tool can be held on either side or across the end of the compound body.

Actual use of the compound is quite straightforward. Use a properly sharpened tool bit which lines up with the center of the part being cut as there is no adjustment other than shimming to raise or lower the tool. The tool is mounted “upside down” with the cutting tip downward and the compound is used on the “back” side of the part.

Four T-nuts are provided to hold the base of the compound to the table for a very secure mount without over tightening. Make sure the base is mounted square to the table so the laser engraved angle scale will provide accurate readings.

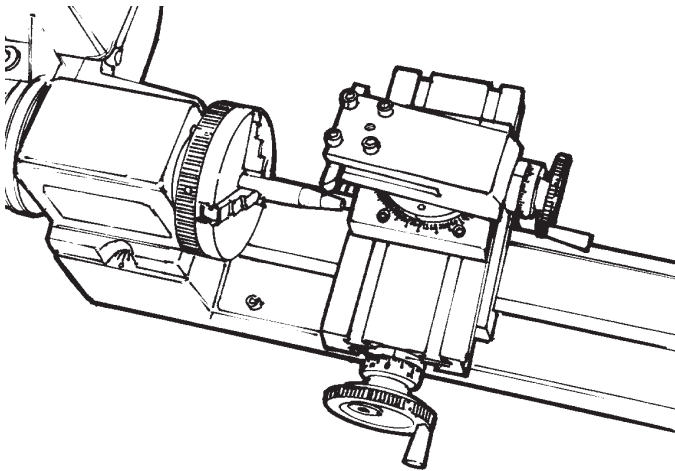


FIGURE 1—Cutting a simple taper with the compound slide eliminates the need to rotate the headstock.

Design Considerations in Improving the Compound

Designing and manufacturing accessories for miniature machine tools often requires a different approach, and the compound slide is a perfect example of this. On a full-size lathe, the compound would normally be mounted on the crossslide and left in place. On a lathe the size of the Sherline, the compound would not only be in the way for many operations, but it would add substantially to the initial

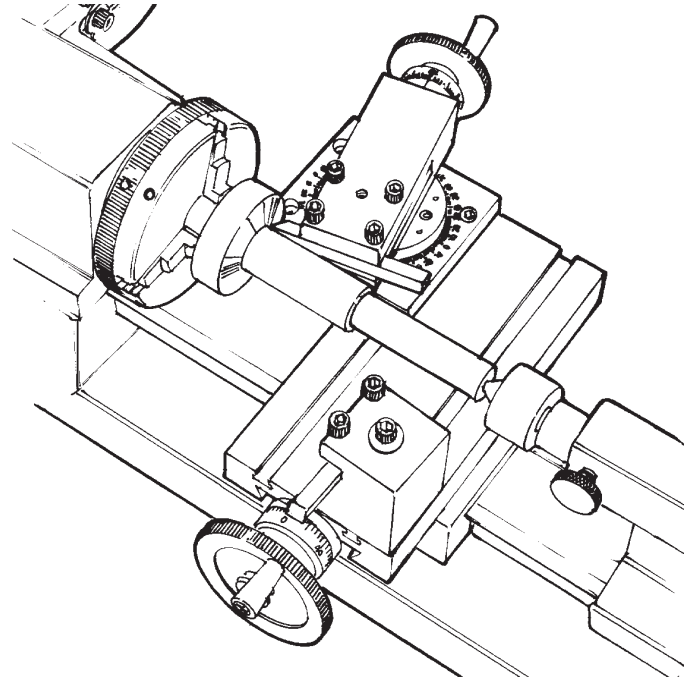


FIGURE 2—The compound can also be offset to allow cuts to be taken close to the chuck. It would be more difficult to hold this piece between centers and cut the taper by offsetting the headstock as might normally be done. Take light cuts when the compound overhangs the table like this.

purchase price of the lathe. Mounting the compound to the front part of the slide limits its movement because of interference with the crossslide handwheel.

Mounting the compound to the rear of the crossslide not only eliminated this interference, it created two additional advantages. First, since cutting work on the “back” side means the surface of the work is moving “up” past the tool rather than down, the tool is mounted upside down with the cutting tip facing downward. This makes the tool less prone to “chatter,” because if the cut gets too heavy, the tool is lifted rather than digging in. Secondly, by mounting the tool only in the upside down position, the slide can be made stronger because it is no longer necessary to leave room for the additional 1/4" spacer required to place the tool at the proper height when using it in the right side up position. This allows the area under the tool to be made thicker.

Adjusting the Gib

The gib grips the dovetailed base of the compound slide tool post and controls both side-to-side play and freedom of movement. If the gib is too tight, the handwheel will be difficult to turn. If the gib is too loose, the tool post will have excess side-to-side play. To adjust the gib (see reference number 7 in the exploded view below), first loosen all three screws holding it down. (The center screw is used to lock the base in place, but it must be loose before the gib can be adjusted.) With one hand, grip the rotating base and the gib and squeeze the gib firmly against the dovetail of the slide tool post. While still holding it, tighten the screws on either end of the gib. Try the handwheel and see that the slide moves freely. If it is too tight, loosen the two screws and adjust again, this time not squeezing quite as hard on the gib. Clean and lubricate the gib and dovetailed slide with light oil periodically.

Locking the Base in Position

When the base is rotated to the desired angle, lock it in place by tightening the center screws on the gib and rotating base. Loosen both screws to rotate the base. When locking the base, do not over tighten the screws, as the design is quite efficient and provides a large amount of surface friction area on the clamp ring. Periodically lubricate the clamp ring and base with light oil for smooth rotation.

Adding a Tool Post to the Compound Slide

In 2017, we modified the design of the compound slide to accommodate our Quick-Change Tool Post (P/N 2250). You can now mount the Quick-Change Tool Post on top of the Compound Slide using a 10-32 x 2" SHC Screw* (P/N 40730 as seen in Figure 3, sold separately).

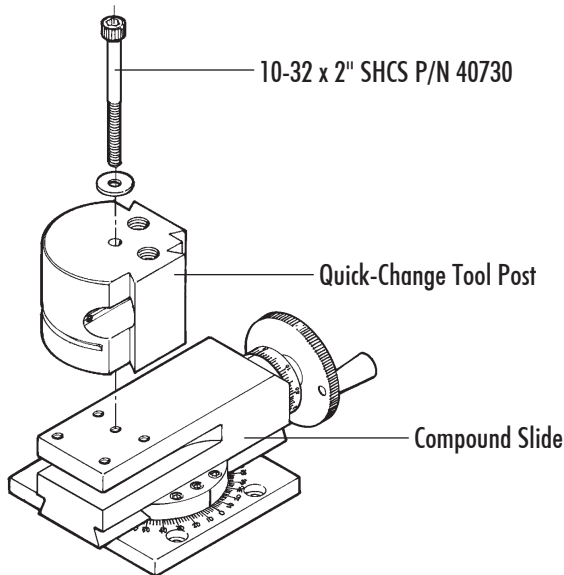


FIGURE 3—Shows the mounting of a tool post to the top of the compound slide.

*NOTE: You must use the Headstock Riser Block (P/N 1297) to use the Quick-Change Tool Post, or any other tool post, when mounting the tool post to the top of the compound slide. Other tool posts may need to be modified in order to get your cutter on centerline.

In addition, you can also use the thread cutting attachment with the compound slide. For more information regarding these combined configurations, visit our [Tips](#) page and view [Tip #11](#) by Ron Lederer for “Thread Cutting with a Riser Block,” and [Tip #92](#) by Russ Cupan for “Cutting Threads with the Sherline Compound Slide.”

Modifying Compound Slides Made Prior to 2017

We added the fifth, 10-32 hole to the middle of the compound slide so our customers could use the quick change tool post on top of it. Figure 4 shows the 10-32 hole location so you can drill and tap this hole by hand. Drill the hole only .430" deep to avoid breaking through into the leadscrew channel. The location is not extremely critical.

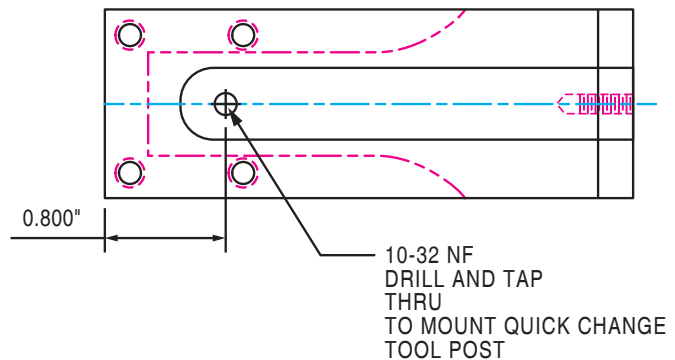


FIGURE 5

Compound Rest Adjustment for Fine Cuts

When the compound rest is set at approximately 84° (84° 16' to be exact) each graduation on the compound rest graduated collar represents an angular movement of .001", and a cross-feed movement of .0001", or a reduction in the diameter of the work of .0002".

This method of adjusting the cutting tool will be of help when taking fine precision finishing cuts fractional thousandths in depth.

This method can also be used to advantage for final grinding operations performed on the lathe when using our High-Speed Grinder (P/N 8900) and Micro-Grinder Tool Post (P/N 8976).

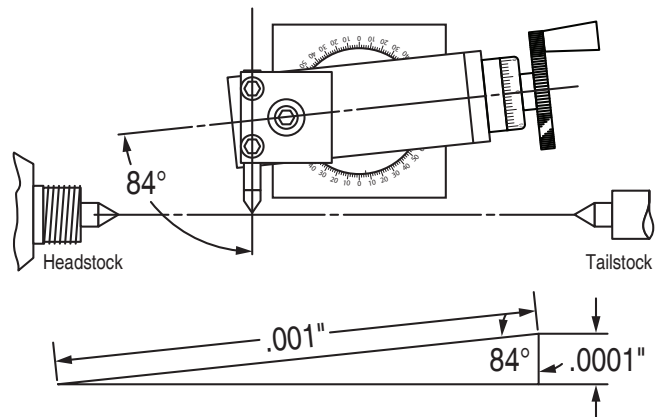


FIGURE 5—Compound rest set for precision cross-feed adjustment.

Note on Tool Height

Our HSS tools are hand ground, which may lead to your tool being above center by .005" to .010". To learn how to grind your own tools go to <https://sherline.com/wp-content/uploads/2015/01/grinding.pdf>.

Compound Slide Riser Block Available

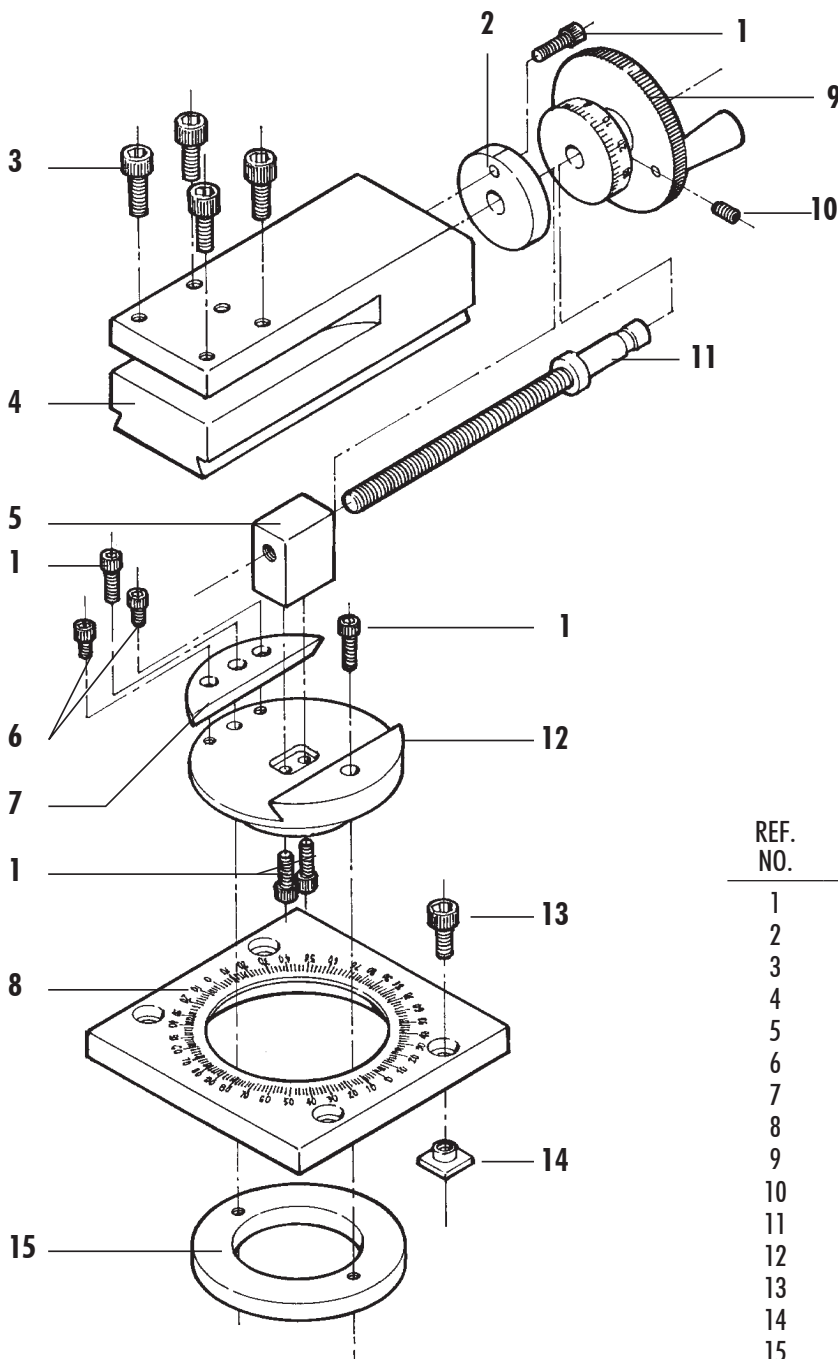
A riser block for the compound is available as P/N 1272. When using the riser block, the cutting tool is reverted to the normal orientation rather than using it upside down.

Thread, Gear, and Angle Calculators Available

Visit our [Calculators](#) web page to download or link to a selection of calculators developed to help you with gear and thread calculations. They are in the form of Excel or Google spreadsheets. (Microsoft® Excel or Google® account required to open and use.)

Thank you,
Sherline Products Inc.

EXPLODED VIEW



Parts List

| REF. NO. | PART NO. | NO. REQ. | DESCRIPTION |
|----------|----------|----------|-------------------------------------|
| 1 | 40530 | 5 | 5-40 x 3/8" SHCS |
| 2 | 40280 | 1 | Thrust collar |
| 3 | 40670 | 4 | 10-32 x 1/2 SHCS |
| 4 | 12760 | 1 | Compound slide tool post |
| 5 | 12740 | 1 | Compound Nut (12640 Metric) |
| 6 | 12710 | 2 | 5-40 x 3/16" SHCS |
| 7 | 12770 | 1 | Compound gib |
| 8 | 12720 | 1 | Compound base |
| 9 | 40050 | 1 | Y-axis Handwheel (41050 Metric) |
| 10 | 40520 | 1 | Cup pt. set screw, 10-32 x 3/16 |
| 11 | 12780 | 1 | Compound slide screw (12680 Metric) |
| 12 | 12730 | 1 | Compound rotating base |
| 13 | 10850 | 4 | 10-32 x 1/4" SHCS |
| 14 | 30560 | 4 | 10-32 T-nut |
| 15 | 12750 | 1 | Clamp Ring |