

## TIP 58 — A Direct Reading Handwheel on the Lathe Crossslide/Fred Smittle

When the lathe crossslide is advanced to take a cut, the amount of the cut is removed from the radius of the spinning part. This means that TWICE that amount is removed from the diameter. If you advance the cutter 0.010", you remove 0.020" from the diameter. Because of this, most lathes have the handwheel on the crossslide marked to indicate the amount removed from the diameter rather than the amount the tool actually moves. Early in the design of the Sherline lathe, it was decided that a vertical milling column would be available as an accessory. (A complete mill was not yet available.) This meant that the crossslide handwheel if marked at 2X travel would not indicate the actual table travel when the lathe was used as a mill. Because this would cause a lot of confusion in milling, it was decided to leave the handwheel marked so that it read actual movement.

As luck would have it, however, if you never use your inch lathe as a mill and would like a 2X reading handwheel, Sherline already makes just such an accessory. It's called a metric handwheel. All you have to do is remove your standard inch handwheel that has 50 marks per revolution and replace it with a metric handwheel that has 100 marks per revolution. Just ignore the decimal point, because instead of marks of 10, 20, 30, etc. representing thousandths of an inch on the inch handwheel, the metric handwheel is marked .1, .2, .3, .4, etc. to indicate tenths of a mm. When used on an inch lathe, each of the 100 marks on the handwheel will now indicate the actual amount you will remove from the diameter of the stock in thousandths of an inch, although the ".1" mark now actually indicates 10 thousandths of an inch. One complete revolution of the handwheel indicates that you have removed .100" from the diameter.

You have your choice of standard 1-5/8" handwheel or adjustable zero handwheel. Here are the part numbers of the handwheels:

- 1-5/8" red standard metric handwheel with 100 marks: P/N 41050
- 2" adjustable zero metric handwheel with 100 marks: P/N 3430



*An inch handwheel (left) has 50 marks, each indicating .001" of actual table travel. A metric handwheel (right) has 100 marks. When used on an inch machine, each of the 100 marks now indicates .001" removed from the diameter of the part. Shown are adjustable zero handwheels.*