



**SHERLINE
PRODUCTS**

INCORPORATED 1974

Saddle Nut Replacement

P/N 4017 (Inch)

P/N 4117 (Metric)

NOTE: Before replacing the saddle nut, make sure that the excessive backlash you are experiencing is not caused by a loose adjustment between the leadscrew handwheel and its thrust support. If this is the case, loosen the set screw and index the handwheel 1/3 turn so you don't pick up the old set screw mark. Push the handwheel and the leadscrew towards one another and tighten the handwheel set screw.

About the Saddle Nut

The saddle nut is made of brass and designed to be an easily replaced item. It is drilled and tapped to match the Sherline lathe and mill leadscrews which are 3/8-20 left-hand threads (Metric: 10mm x 1mm L.H.). The reason they have a left-hand thread is so that the slide will move away from the operator when the handwheel is turned in a clockwise direction. This is standard practice for machine tools, small or large.

Replacing the Lathe or Mill Saddle Nut

Remove the headstock/motor assembly. On the lathe, remove the bed by removing the 10-32 socket head screws (P/N 4051) from the inside bottom of the lathe base. These two screws hold the bed to the base. Be sure to note washer placement on these screws during disassembly. It is important that they are reassembled the same way, as the washers are used as spacers to keep the screw from hitting the lead screw. (From here on, these instructions apply to both the lathe and the mill.) Next remove the 10-32 socket head screw (P/N 4067) that holds the saddle nut to the lathe saddle.

The entire leadscrew assembly may be removed by removing the 10-32 flat head screw that is located on the top of the lathe bed near the leadscrew handwheel or the front of the mill bed near the Z-axis handwheel. At this time, it is a good idea to clean up the machine.

Loosen the set screw holding the handwheel in place and remove the leadscrew from the assembly. This will allow you to remove the saddle nut from the leadscrew. Note the direction it faces before removing, and remove the saddle nut from the handwheel end of the leadscrew.

Thread on the new saddle nut, remembering that the lead screw has a left handed thread. Thread the saddle nut approximately 1" (25mm) onto the leadscrew and put the

leadscrew assembly back together. Make sure the handwheel is pushed all the way on before tightening the set screw or your machine will have excess backlash. Do not attach the base to the bed until the saddle nut has been adjusted.

Adjusting the Saddle Nut

The adjustment for the saddle nut consists of two flat set screws on either side of a 10-32 socket head cap screw. With the saddle nut located on the leadscrew close to the support (P/N 4030), loosen these two screws and slide the saddle (P/N 4091) into position over the saddle nut. Put the 10-32 socket head cap screw through the saddle and screw it into the saddle nut, but do not tighten it yet.

Adjust the set screws until the flat points touch the saddle nut and then tighten the 10-32 socket head cap screw. Watch as you tighten to see that the screw doesn't move. If it does, loosen and readjust the other set screws.

What we are attempting to accomplish is to have the saddle nut ride on the leadscrew with the minimum amount of drag. You can check the drag by turning the leadscrew handwheel. If you feel drag, tighten or loosen a single set screw while moving the saddle with the handwheel until the handwheel turns freely, but keep the saddle close to the handwheel. If you adjust the saddle nut while it is in the center of the leadscrew, it may be slightly off center but will feel free until the saddle gets close to either end of its travel. Here, the leadscrew is supported and cannot deflect so it will bind. If you can't eliminate the binding, tap the saddle nut with a plastic hammer on the leadscrew side while the saddle nut is tightly attached to the saddle and readjust. Don't use the machine with a loose attachment screw as this will cause excessive wear and backlash. If you can't seem to find the correct setting yourself, send the bed/leadscrew/handwheel assembly back to Sherline and we will install it for you for a handling fee plus shipping charges. Contact us for pricing.

Thank you,
Sherline Products Inc.

Refer to the *SHERLINE INSTRUCTION GUIDE* (P/N 5326) for exploded views of the lathe and mill for location.