

## Replacing the Speed Changer

These instructions are meant to supplement your Shopsmith materials. Do NOT attempt to adjust or repair your Shopsmith without the proper Shopsmith instructions.

Turn the machine on, and run up the speed to its highest setting.

Shut it off and unplug it.



Remove the belt cover. Remove the drive belt from the motor pulley by gently sliding off one side of the belt and rotating the motor shaft so that belt will ride off entirely.



This is speed changer as viewed through the access hole.

Shopsmith says that you're supposed to depress the leaf spring on the back of the quadrant and swing the retaining loop out of the way. This is done inside of the machine, so it's impossible for me to get a photo, but the next two photos should explain everything.

This is the speed control assembly after it's been removed from the Shopsmith, and you can see that I'm depressing the leaf spring.



This is a shot from inside of the Shopsmith. This is the retaining-loop. Normally, it is hooked over the leaf spring that you saw in the last photo. Once the leaf spring is depressed, you sort of roll the retaining-loop off of the leaf spring. It's not the easiest thing in the world, but, with a little patience, it can be done.



Remove the control handle with a 3/32 Allen wrench



Remove the three large screws. (They are numbered in the photo.)



Everything will now come out. Notice the small spring. Make sure this stays in place—I have let it fall into the motor pan on many occasions.

Replacing the speed control is the reverse of the procedure. Make sure the little spring is in place, and replace the speed dial. Then put the new speed control in the opening in the headstock and replace the three screws and flat spring. Turn the speed dial to the “fast” setting.

Depress the leaf spring and slide the retaining loop back into its original position. This might take a while. On a good day I can do it in a few seconds, but the first time I tried it took about fifteen minutes.

Replace the control handle and tighten the set screw.

Turn on your Shopsmith and crank up the speed until the drive belt is 1/8" to 1/16" from the outside edge of the motor pulley, or until the high speed stop keeps you from turning it any further.

Remove the control handle a second time.



Use a small screwdriver to hold the set screw, then loosen the jam nut.

If the high speed stop engaged before the drive belt was near the edge of the motor pulley, turn the set screw COUNTERCLOCKWISE and, at the same time, turn the worm shaft CLOCKWISE until the belt is between 1/8" and 1/16" from the outer edge of the pulley. Note the use of pads on the pliers-this is to protect the worm shaft. This is the Shopsmith recommended procedure.



Turn off your Shopsmith. Re-tighten the jam nut. Press in and turn the speed dial until it reads "fast."

Replace the belt cover and name plate. Put the sanding disk on the machine and, while turning the disk by hand, slowly turn the speed control to "Slow."

