



Preload Nut Adjustment and Pulley Adjustment

The following instructions are included in the Assembly and Instruction Guide that comes with each Sherline machine.

Two-Speed Pulley

The normal pulley position, which is placing the belt on the larger motor pulley and smaller headstock pulley, will suffice for most of your machining work. Moving the belt to the other position (smaller motor pulley, larger headstock pulley) will provide additional torque at lower RPM. It is particularly useful when turning larger diameter parts with the optional riser block in place.

NORMAL BELT POSITION

HIGH TORQUE, LOW RPM POSITION

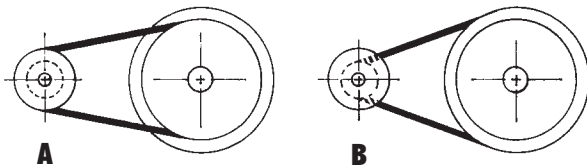


FIGURE 1—The two pulley positions. Position **A** is the conventional setting, position **B** offers more torque at low RPM when turning large diameter parts.

To change the pulley position, remove the speed control hold-down screw and pivot the speed control housing up out of the way. Remove the mounting plate from its position on the rails of the two halves of the belt guard housing. Loosen the two nuts that hold the motor to the motor mounting bracket and take the tension off the belt. With your finger, push the belt off the larger diameter groove of the pulley and into the smaller one. (Depending on which way you are changing it, this could be either the motor or spindle pulley.) Then move the belt to the larger diameter groove on the other pulley, and rotate the headstock by hand to get it to seat. Push the motor outward on the motor mounting bracket to put the proper tension on the belt, and retighten the two motor mounting screws. Now you can replace the mounting plate, pivot the speed control back down, and refasten it. Moving the belt back to the other position is simply a reverse of the above procedure.

Spindle Preload Adjustment

If any end play develops in the main spindle, it can be easily eliminated by re-adjusting the preload nut. (See part number 40160 in the exploded view.) When the headstock is assembled at the factory, the preload nut is adjusted to .0002" (.005 mm) of end play. This is controlled by the outer races of the bearing being held apart by the headstock case and the inner races being pulled together by the preload nut. This setting was determined through experience, and, like everything in engineering, it is a compromise. If the machine is only to be run at high-speed, this setting may be too "tight." The headstock will run fairly warm to the touch normally, but extended periods of high speed operation may bring about excessive temperature. The headstock should not become too hot to touch. If this is your case, the preload tension may need to be reduced slightly.

To change the adjustment, remove the spindle pulley, loosen the set screw in the preload nut and back the preload nut off 4° of rotation (counter-clockwise). The bearings are lightly pressed into the case, so the inner race will not move without a sharp tap with a plastic mallet to the end of the spindle where the pulley is attached.

If you find your bearings are set too loose, you may want to take up on the end play. You can check them with an indicator or by spinning the spindle without the motor belt engaged. If the spindle spins freely with a chuck or faceplate on it, it is too loose for normal work. Adjust the preload nut until it turns only about one and a half revolutions when spun by hand with a chuck on the spindle.

NOTE: If you are using a 6" long wrench, each degree of rotation accounts for about 0.1" (2.5 mm) of movement at the end of the wrench. Therefore, an adjustment of 4° would cause the end of the wrench to move about 0.4" (10 mm).