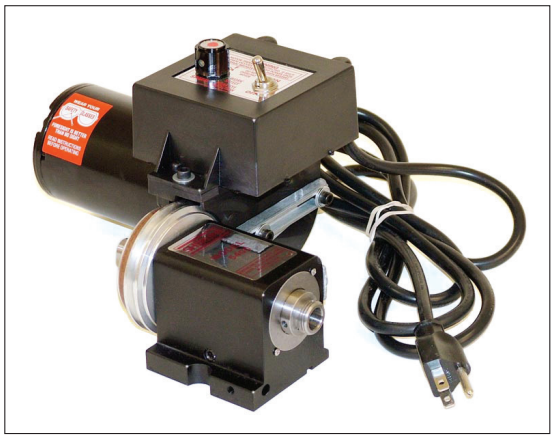
SHERLINE PRODUCTS
INCORPORATED 1974



The assembled power unit

Assembling the Headstock, Motor, and Speed Control on a New Machine

Mounting the Motor and Speed Control Unit to the Headstock

In order to keep shipping costs and damage to a minimum, all new Sherline machines are shipped with the motor and speed control disassembled. The same power unit assembly is used on all Sherline lathes or mills, so these instructions apply to all machines.

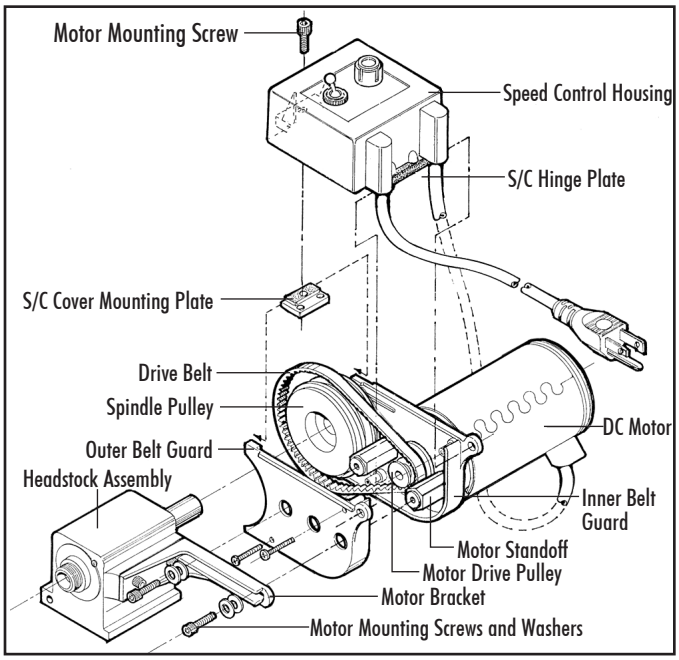


FIGURE 1—An exploded view seen from the "back" side shows the individual components. The inner belt guard, motor pulley and motor standoffs have already been assembled in this drawing. The motor bracket has also been mounted to the headstock. The following instructions and photos will walk you through the assembly procedure from start to finish.

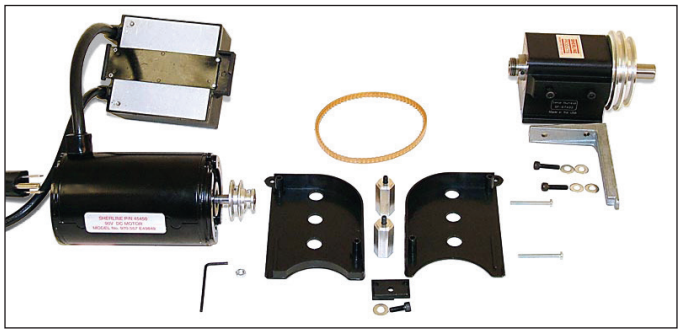


FIGURE 2—Components ready for assembly.

Assembly Procedure

Gather all the needed components as shown in Figure 2 above. Assemble them as follows:

1. Using the small hex key, remove the motor pulley from the motor shaft by loosening its set screw. Place the inner belt guard against the motor and secure it using the two hex aluminum standoffs (P/N 43100). There are four threaded holes in the motor. Use the pair that aligns with the brush housings so the cord to the speed control housing points downward as shown. (See Figure 10.) Reinstall the motor pulley (P/N 43360) to the motor shaft and tighten the set screw, making sure it engages the flat on the motor shaft. The end of the pulley should be even with the end of the motor shaft with the smaller pulley toward the outer end of the shaft.
2. Place the drive belt over motor pulley (See Figure 3).
3. Make sure the drive belt is routed properly. Then set the outer belt guard in place on the inner belt guard, locating the holes in outer belt guard over the ends of the motor standoffs. Press the two nuts into the hex shaped depressions in the rear of the inner belt guard and secure the outer cover with two 1-3/8" pan head screws through the covers and into the nuts.

FIGURE 3—Place belt over motor pulley.

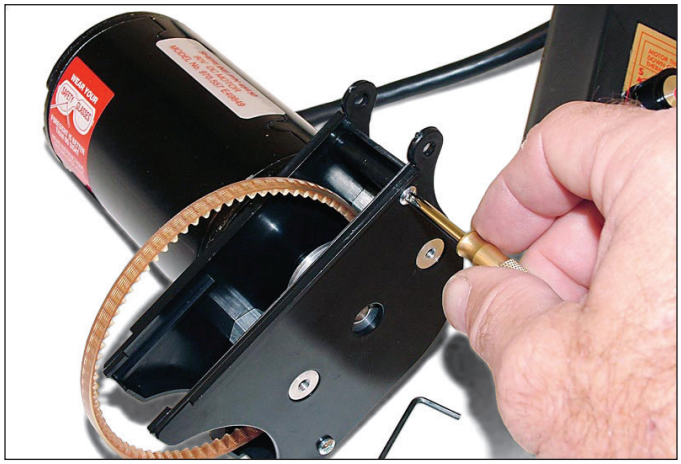


FIGURE 4—Attach outer belt guard.

4. On top of one end of the two belt guard halves you will see two "ears" with holes in them. These are where the speed control housing pivots. On the plate on the bottom of the speed control housing are two pins that go into these holes. Put the pin closest to the motor in place, then bend the other "ear" away from the motor far enough that you can engage the other pin so the cover pivots on these pins. The plastic is flexible enough so that you can do this easily and it will spring back into position.

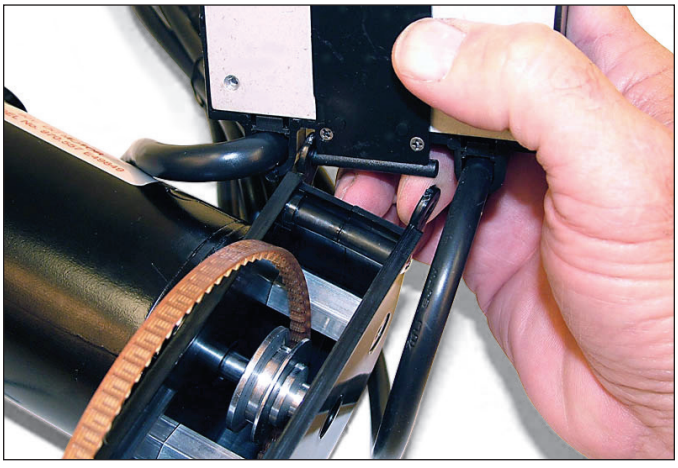


FIGURE 5—Insert "ears" of speed control housing into holes in belt guard tabs.

5. Attach the motor mounting bracket to the rear of the headstock with two 10-32 x 7/16" socket head screws. These screws are shipped threaded into the headstock rather than in the parts bag. There is enough "play" in the mounting holes to allow the motor to be adjusted so it is parallel with the spindle axis. (**NOTE:** If a chip guard is to be mounted, its attachment screw replaces one of these mounting screws. It can be mounted at this time or after the headstock is in place. See instructions that come with the chip guard.)
6. Place the drive belt over the spindle pulley and insert the two 10-32 x 3/4" socket head screws (with 2 washers on each) through the motor mount slot and into holes in the ends of the motor standoffs which are exposed through locating holes in the outer belt guard. The normal operating position for the drive belt is on the large diameter groove on the motor pulley and the small diameter groove on the spindle pulley. Use of the other (high torque) position is discussed elsewhere in the instruction manual.

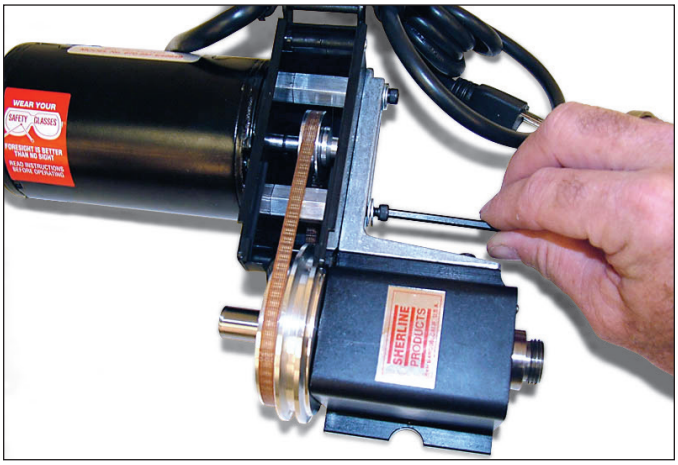


FIGURE 6—Attach motor to motor bracket.

7. Temporarily tighten the two motor mount screws. Pivot the speed control unit up and out of the way to check the alignment of the drive belt. It should be perpendicular to the drive pulleys. If not, loosen the set screw on the motor pulley and adjust it in or out on its shaft until the drive belt is square with the motor.
8. Loosen the two motor mounting screws and push the motor away from the headstock to adjust tension in the drive belt. Tighten the mounting screws once again to hold the motor/speed control unit in place.

   NOTE: Do not over-tension the drive belt. Just make sure it has enough tension to drive the spindle pulley without slipping under normal load. By not over-tightening the belt you will not only extend its life, but will also provide a margin of safety for belt slippage should a tool jam in a part or an accident occur. The belt must be a little tighter when used in the high torque pulley range because small diameter pulleys are not as efficient.
9. Set the cover mounting plate into the top of the belt guard housing so it rests on the rails molded onto the

inside surfaces of the housing. (The pressed-in nut in the mounting plate goes down and toward the outside.) Slide the plate toward the outside (toward the spindle pulley) until it stops.

NOTE: The mounting plate is removable to allow easy changing of the drive belt position.

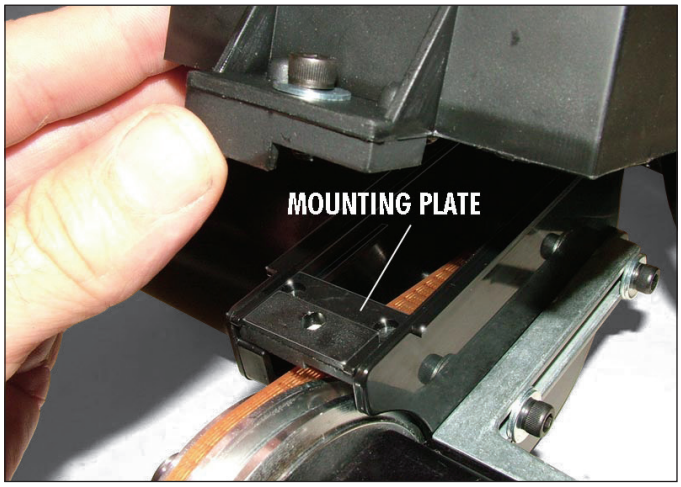


FIGURE 7—Insert mounting plate between belt guard halves and secure speed control housing to nut in plate.

10. Rotate the speed control housing down into place and insert the single 10-32 x 1/2" socket head screw through the hole in the speed control housing and into the nut in the mounting plate. Tighten it enough to hold the housing in place, but do not over-tighten.
11. Make sure the power switch is in the “OFF” position and the speed control knob is dialed all the way counter-clockwise to the lowest speed position. Plug in the motor, turn the On/Off switch to the “ON” position and slowly turn the speed control knob clockwise until the spindle starts to turn. Listen and watch the belt to make sure it is not rubbing on the belt guard or mounting tab near where it exits the belt guard. If it is, you may need to file off a little plastic until the belt does not rub. Turn the On/Off switch to “OFF”, unplug the motor. Headstock unit is now ready to install on a lathe or milling machine.

Thank you,
Sherline Products Inc.