



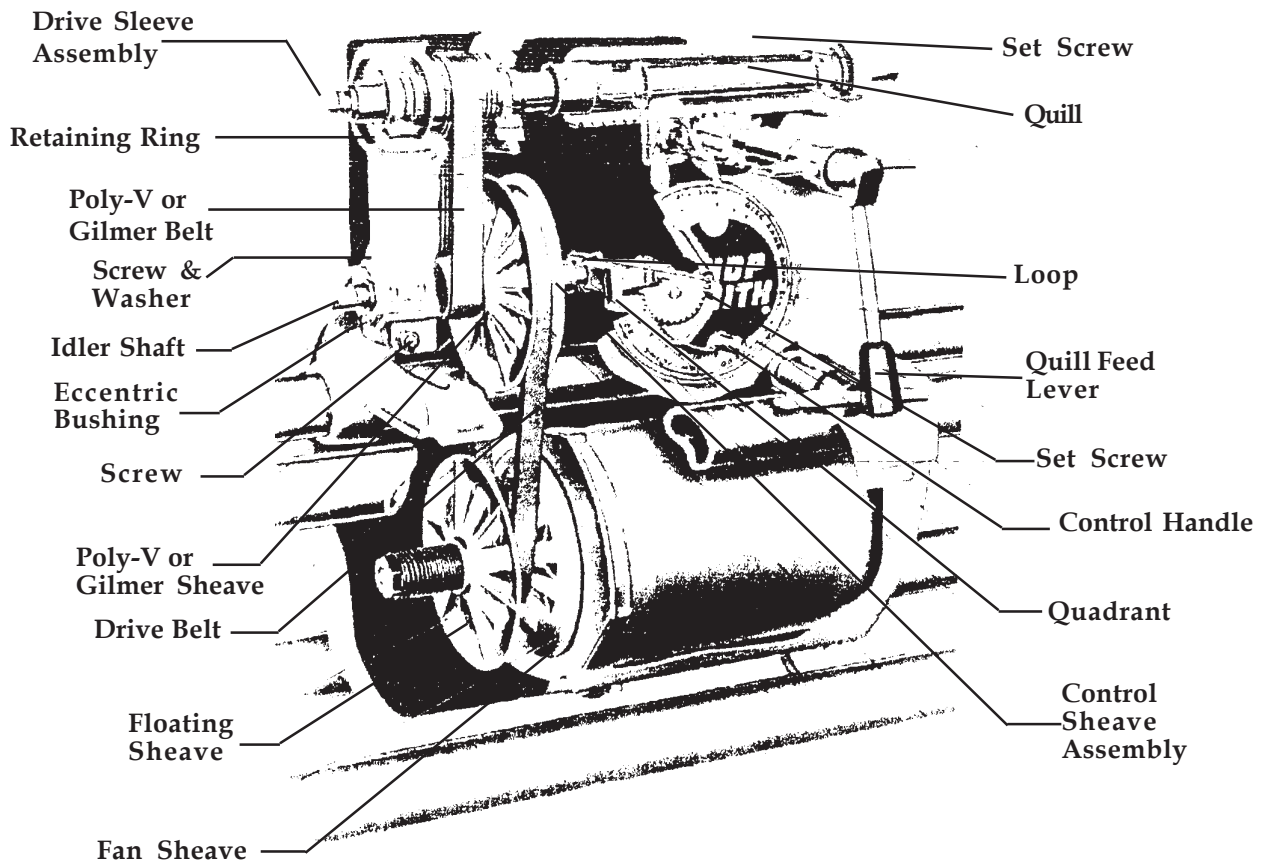
Replacement of the Poly V or Gilmer Belt 521681/521683

Introduction

Replacement of the Poly V or Gilmer belt in your headstock can be complicated and time consuming if the proper steps are not followed. Improper installation or failure to follow these instructions could also result in damage to the headstock. These instructions should be followed closely for both replacement of the belt and for assembly.

Tools Needed:

- ◆ Small slot screwdriver
- ◆ Medium slot screwdriver
- ◆ #2 Phillips screwdriver
- ◆ 5/32" Allen Hex wrench
- ◆ 3/32" Allen Hex wrench
- ◆ 1/4" Allen Hex wrench
- ◆ Rubber or Leather Mallet



WARNING

Be sure machine is turned off and unplugged before starting any service or maintenance procedure. Failure to do so could result in electrocution.

CAUTION

The machine should never be turned off at high speeds except during maintenance.

INSTRUCTIONS

REMOVAL PROCEDURE

1. Turn the unit to high speed, turn off and unplug unit. This allows the drive belt to be near the outer edge of the motor pulley making it easy to spread the motor pulleys and unhook the drive belt from the motor.

WARNING

Be sure machine is turned off and unplugged before starting any service or maintenance procedure. Failure to do so could result in electrocution.

2. Slide the headstock and carriage as far to the right as possible and lock securely.
3. Remove the belt cover screws and slide the cover as far as it will go toward the left.
4. Remove, or rotate the nameplate from the rear of the headstock to open the access hole. Depending on the age of your unit, this can be done either by popping the nameplate off with a slot screwdriver or removing the screw located at the bottom of the nameplate. Swing the nameplate around to expose the access hole and secure.

NOTE

Many older units DO NOT have an access hole. If this is your case simply omit this step and work through the available openings.

5. Remove the drive belt from the motor sheaves by sliding the belt off the floating sheave while rotating the motor shaft.

6. Reaching through the access hole, disengage the control sheave loop from the quadrant. This is done by depressing the quadrant leaf spring and pivoting the loop off the quadrant with your thumb.
7. Remove the drive belt from the control pulley by pushing the drive belt up into the unit while pushing the control sheave away from the quadrant. Once the belt is clear of the control pulley remove it from the headstock by pulling it down past the end of the control sheave, quadrant, and motor sheaves.
8. Lay a piece of cardboard across the bench tubes to prevent any tube damage. Remove the 5 screws that hold the motor pan assembly. Carefully lower the pan assembly, resting it on the cardboard you placed on the bench tubes.
9. Remove the screw and washer just above the eccentric bushing in the casting. Use a 1/4" Allen Hex wrench to loosen the clamp bolt directly below the eccentric bushing, but DO NOT remove it. Place the blade of a small slot screwdriver in the eccentric bushing slot. Rotate the bushing counterclockwise to 6:00. This releases the tension on the belt.
10. You will have one of three different types of eccentric bushings.
 - a. On models produced in the mid 80's to present, there is a stop screw driven in the end of the eccentric with 2 washers. To remove this eccentric bushing from the headstock, pull the bushing out while pushing in on the idler shaft until the bushing slides out of the headstock. **DO NOT** remove the stop screw.
 - b. On some older models, built from the mid 80's back to the early 50's, the

eccentric bushing is secured to the idler shaft with a set screw that is in the face of the bushing at its thickest part. Remove the previously loosened clamp bolt, washer, and nut. With the slot in the bushing at 6:00, the set screw is now accessible through the two ears in the casting below the bushing. Loosen the set screw with a 5/32" Allen wrench (see Figure 2a). Pull the bushing out while pushing in on the idler shaft until the bushing slides out of the headstock.

- c. Older models, made in the early 50's, have keepers mounted on the clamp bolt that holds the idler shaft and eccentric bushing. The clamp bolt, washer and nut must be removed from the headstock casting in order to remove the keeper. Pull the bushing out while pushing in on the idler shaft until the bushing slides out of the headstock.

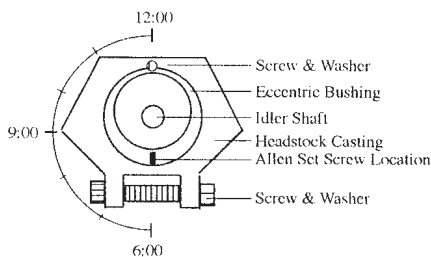


Figure 2a

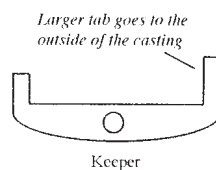


Figure 2b

NOTE

When replacing the keeper, the larger side of the tab should be on the outside of the housing.

11. After removing the eccentric bushing, slide the belt off the Poly-V or Gilmer sheave while bringing the idler shaft toward the quadrant. When the control sheave assembly is free, lay it on the motor.

12. Remove the retaining ring which holds the drive sleeve assembly into the casting by using a small slot screwdriver. Find the end of this coiled retaining ring, hook it with the screwdriver and work it out of the groove.
13. Loosen the set screw that engages in the quill in the top of the headstock casting. This set screw may be covered with putty or lead filler which can be removed with a small screwdriver or scratch-all.
14. While holding the quill feed lever, unlock the quill and slowly extend it until it disengages from the drive sleeve. While holding tension on the feed handle, turn the spindle slightly to offset the quill and drive sleeve splines. Now you can use the quill to push the drive sleeve out of the headstock.

WARNING

DO NOT release the quill feed handle. If released, the quill will snap back and cause injury to you and damage to the machine.

15. Re-extend the quill far enough to remove the belt.

NOTE

DO NOT remove the control handle assembly.

REPLACEMENT PROCEDURE

1. Slide the new belt through the opening at the top of the headstock. Slide the idler shaft through the belt so the belt rests on the Poly-V or Gilmer pulley of the sheave and the idler shaft with the bearing is in its approximate position in the headstock casting.

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2. Raising the Idler shaft in one hand, slide the drive sleeve assembly back into the headstock and through either the Gilmer or Poly-V belt. Make sure the splines of the quill and drive sleeve are engaged. While sliding the drive sleeve assembly in, the belt must go over the bearing and onto the pulley of the drive sleeve. Position your Gilmer belt centered on the pulley of the drive sleeve assembly.
 - a. If you are replacing the Poly-V belt in a machine with a pivoting nameplate, position the Poly-V belt starting in the second groove of the Poly-V pulley (counting from the side closest to the switch).
 - b. If you are replacing the Poly-V belt in a machine with a removable nameplate, position the Poly-V belt in the third groove of the Poly-v pulley.
 3. Replace the spiral retaining ring in the groove behind the drive sleeve bearing, making sure it is fully seated into the slot.
 4. Slide the eccentric bushing over the idler shaft bearing with the slot in the eccentric at 6:00 and into the headstock casting. Use a similar technique to the one used to remove it. Replace the set screw to hold the bushing flush with the casting. The pointed end of the setscrew must engage fully the groove in the bearing and be tightened only enough to hold it in place but not more than finger tight.
 - √ For Gilmer drive units with keepers, the larger tab should be to the outside of the headstock casting.
 5. Replace the clamp bolt, washer and nut, but DO NOT tighten yet. Install the keeper (on Gilmer units only) on the clamp bolt at this time. The large tab should be on the outside of the headstock.
 6. Reattach the motor pan assembly.

NOTE

Start with the two screws near the corners of the motor pan. The motor will easily swivel upward for the other screws.

7. Loosely place the drive belt between the two sheaves of the control sheave assembly. Hook the loop retainer over the quadrant, by depressing the leaf spring on the quadrant and pushing the loop over the quadrant with your thumb.
8. Install the drive belt on the motor pulleys. Pull the drive belt tight and hook the belt over the floating motor pulley while rotating the motor. The belt should jump right into the groove.
9. Adjusting the belt tension.



Too much belt tension will cause the idler shaft to overheat. Too little belt tension will allow the belt to slip causing the machine to seem under powered.

Overtightening the setscrew WILL damage the bearing.

- √ For models with the set screw in the bushing, tighten just enough to hold the bushing in place. DO NOT over tighten.

- a. For the Poly-V belt, insert a flathead screwdriver in the slot of the eccentric bushing. Turn the bushing clockwise until the belt deflection is about 1/8" when depressed with moderate pressure. Carefully tighten the clamp

bolt below to secure the bushing.



DO NOT overtighten clamp bolt. This will break the ears on the casting. Use no more than 20 in./lbs. torque.



Because the final tensing of the Gilmer Belt must be done with the machine running, extreme care must be taken not to touch any moving parts with any tool or part of your body. Also wear your safety glasses.

- b. For the Gilmer Belt, the unit must be running on a G or H speed setting. In order to start your machine and set your speed to 'G' or 'H' setting, you must mount your sanding disc to the main spindle. Turn the disc by hand, adjusting the speed dial from fast to slow. Plug in your machine and turn it on. Set the speed to 'G' or 'H'. Turn the eccentric bushing clockwise until the belt 'screams'. Now turn the bushing counterclockwise until the belt stops screaming. Carefully tighten the bolt and nut below to secure the bushing.



DO NOT overtighten the clamp bolt. Use no more than 20 in./lbs. torque.

10. Replace the belt cover and screws.
11. Replace the nameplate.

12. To reset the speed dial back to slow on a Poly-V machine, mount the sanding disk in the main spindle. Turn the sanding disk by hand, while turning the speed dial from fast to slow.



Never turn the speed dial without rotating the spindle by hand or without the motor running.

NOTE

If you have any additional questions or comments, please call our Customer Service Department at 1/800-762-7555 or visit our website at www.shopsmith.com.



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