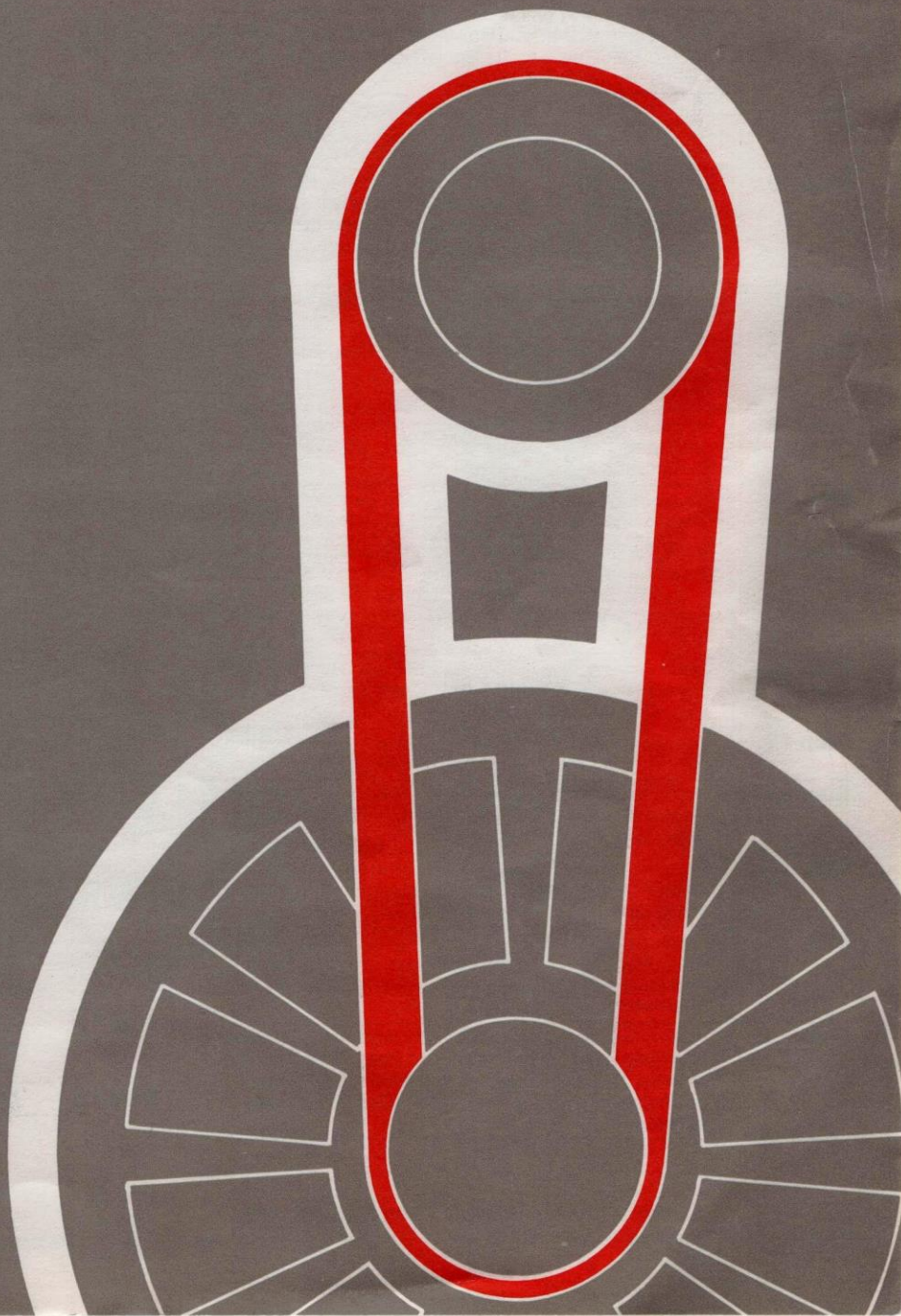




Shopsmith Inc.

The Home Workshop Company
750 Center Drive
Vandalia, Ohio 45377

How to Install the MARK V Poly "V" Belt



Disassembly Instructions

Re-assembly Instructions

Tools Required:

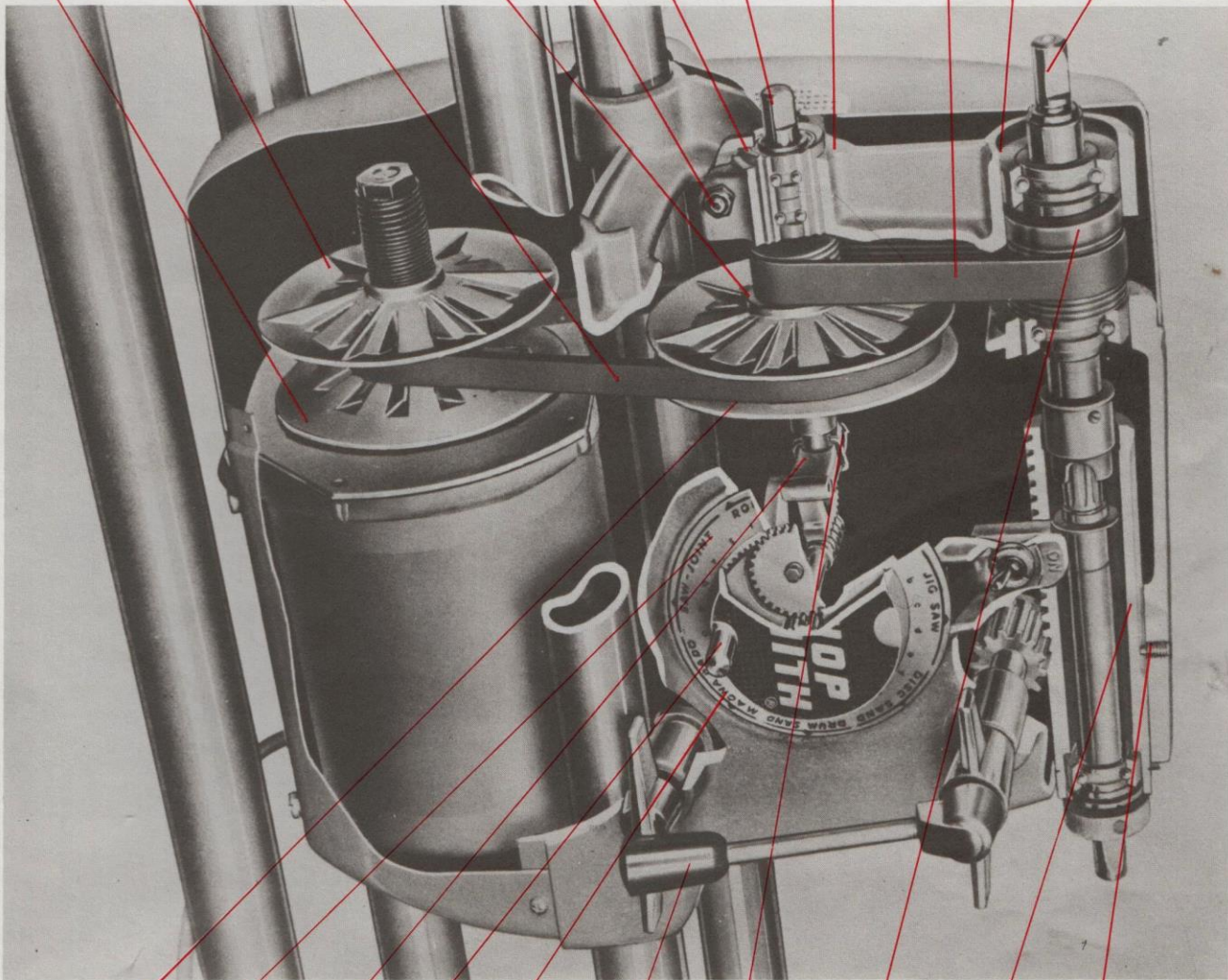
- Slotted Head Screwdriver
- Phillips Head Screwdriver
- 5/32" Allen Wrench
- 3/32" Allen Wrench
- 1/4" Allen Wrench
- Mallet (Leather or Rubber)
- Tape or String

Step 1.	With motor running, turn Speed Dial to "Slow" speed and DISCONNECT POWER TO UNIT.
Step 2.	With motor "Off" turn Speed Dial to "Fast" speed (this will loosen Drive Belt 504193).
Step 3.	Lock MARK V in drill press position and remove (2) slotted screws that hold Belt Guard. With tape or string secure Belt Guard to Tie Bar (which bridges the Way Tubes).
Step 4.	Remove Speed Control Handle 504229 — this is held by a set screw 145709. Use a 3/32" Allen wrench through opening in handle to loosen screw.
Step 5.	Remove (3) 448027 slotted screws (under Control Handle 504229) from Speed Control 504198 — be sure not to lose the (2) springs. Note position of springs carefully to insure proper replacement during re-assembly.
Step 6.	Remove Nameplate Assembly on opposite side of headstock by prying with screwdriver.
Step 7.	Reach in with hand and slip Retaining Loop 504187 off leaf spring on 504221 Quadrant. (This will allow Speed Control to drop out.)
Step 8.	Remove Drive Belt 504193 from motor sheaves by spreading the sheaves with hands and slipping Drive Belt around Floating Sheave 504208.
Step 9.	Remove Allen screw 502038 which clamps the Eccentric Bushing 504190 into the headstock casting.
Step 10.	Remove Phillips screw 501643 and washer that keeps Eccentric and Idler Shaft from slipping out. Turn Eccentric Bushing so slot on Eccentric is aligned with opening in bottom of casting. (This will loosen tension of Poly "V" Belt)
Step 11.	Loosen set screw 139367 in Eccentric Bushing (not shown in diagram) with 5/32" Allen wrench and pry Eccentric out with screwdriver.
Step 12.	Let Idler Shaft 504178 drop inside headstock and slip Poly "V" Belt 504170 from Idler Shaft.
Step 13.	Remove or loosen set screw 501634 in top of headstock with 5/32" Allen wrench (screw keeps Quill from extending too far).
Step 14.	Remove Retainer Ring 501299 from casting with slotted screwdriver (this can be done by lifting out of the groove and pulling out as a coil).
Step 15.	Extend Quill 504545 with Quill Feed Lever 513017 until Quill splines are out of Drive Sleeve 511546 and turn Quill about 1/6 of a turn so that splines are mismatched by one tooth's width.
Step 16.	Push Drive Sleeve 511546 out by moving Quill inward with Quill Feed Lever. (Make sure Poly "V" Belt is clear of Drive Sleeve so that belt won't wedge between casting and Drive Sleeve.) Return Quill to original position.

Step 1.	To install Poly "V" Belt: a. Insert Poly "V" Belt in opening at top of headstock casting so that Drive Sleeve 511546 can be pushed through belt. b. Push Drive Sleeve 511546 in casting (using light mallet taps if necessary). c. Replace Retainer Ring 501299 that holds Drive Sleeve in casting.
Step 2.	Feed Idler Shaft 504178 through Poly "V" Belt into casting.
Step 3.	Center Poly "V" Belt on hub of Sheave 504180.
Step 4.	Push Idler Shaft through casting and have outside edge of bearing flush with outside of casting, holding this firmly with hand, check Poly "V" Belt alignment with Drive Sleeve.
Step 5.	Insert Eccentric Bushing 504190 in casting and over Bearing on Idler Shaft 504178 — outside edge of Bearing should be flush with Eccentric.
Step 6.	Install set screw 139367 (not shown in diagram) in Idler Bearing groove with 5/32" Allen wrench. Seat screw in groove, but DO NOT OVERTIGHTEN , as that will make bearing run hot.
Step 7.	Install and tighten Phillips head screw 501643 and washer over Idler Shaft.
Step 8.	Install Speed Control Assembly 504198 using (3) 448027 slotted screws — be sure to install the (2) springs under dial.
Step 9.	Turn Speed Control Dial so that the highest speed is aligned with pointer on headstock casting.
Step 10.	Replace Control Handle 504229 and tighten set screw 145709 through opening in handle with 3/32" Allen wrench.
Step 11.	Slip Drive Belt 504193 between Drive Sheave 504180 and Control Sheave 504181.
Step 12.	Install Loop Retainer 504187 over leaf spring on Speed Control Quadrant 504221.
Step 13.	Replace Nameplate Assembly, making sure leaf spring is inside casting.
Step 14.	Replace Drive Belt 504193 on Motor Sheaves by using hands to open sheaves, and slipping belt around Floating Sheave 504208.
Step 15.	Turn Eccentric Bushing 504190 to put proper tension on Poly "V" Belt — belt tension should be very tight to touch, only 1/4" deflection when pressed from the side.
Step 16.	Use your 1/4" Allen wrench to install and tighten keeper Allen screw 502038, (with washer and nut) just enough to keep Eccentric from turning.
Step 17.	Align splines on Quill and Drive spindles to allow Quill to move freely.
Step 18.	Adjust set screw 501634 with 5/32" Allen wrench to allow Quill to move freely and to stop Quill at 4-3/8" when fully extended.
Step 19.	Replace Belt Guard and tighten (2) slotted screws.

Shopsmith Drive System

504207 Fan Sheave 504208 Floating Drive Belt 504193 Sheave
504180 Poly V Sheave 502038 Screw 504190 Eccentric Bushing 504178 Idler Shaft 501643 Screw 504170 Poly V Belt 501299 Retaining Ring 511546 Drive Sleeve Ass'y.



504181 Control Sheave Ass'y. 504198 Speed Control Ass'y. 504221 Quadrant 504229 Control Handle 145709 Set Screw Thru Opening 513017 Quill Feed Lever 504187 Loop 501285 Pulley 504545 Quill 501634 Set Screw

