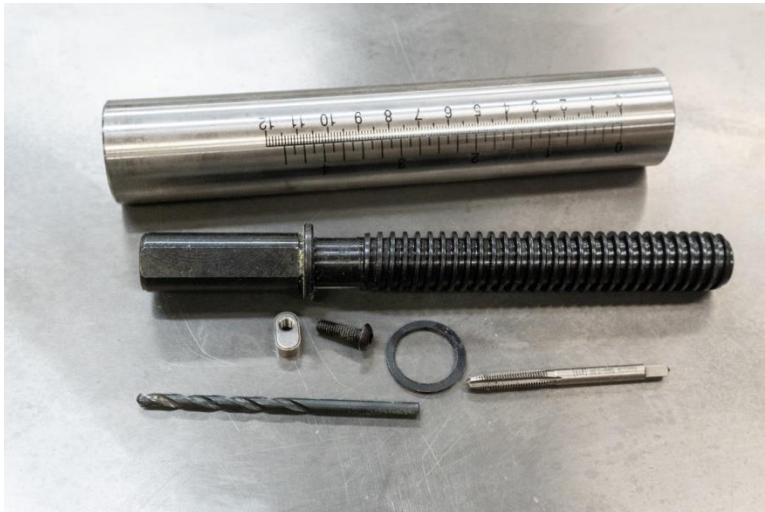


Powermatic 3520A Quill replacement

By John Lucas

When the Powermatic 3520C came on the market the tailstock had Acme threads instead of the standard screw threads found on my 3520A. I thought this was a remarkable improvement both in strength of the threads as well as speed in advancing the quill. Having done a lot of drilling on the lathe this makes a big difference. Even just every project tasks such as removing the live center before hollowing would be quicker.

I measured the quill on my friends 3520C and thought it could be done with minimal modification to my lathe. I contacted Powermatic and got the parts needed. You need the Quill, the lead screw, the Key and the allen screw that goes in the key. I also added a thin plastic washer to go between the lead screw and quill to keep the quill from locking up when you back it out all the way.



The handwheel of your 3520A will fit so you don't need a new handwheel. You need to grind a slot in the Tailstock body to hold the Key and you will need to drill and tap a hole for the Allen screw. After removing the parts from my tailstock I inserted the new Quill part way. I rotated it until the slot was at the 9 o'clock position. I colored the area on the tailstock with a black magic marker. I inserted the key in the quill slot and made mark on black area for the depth of the key. Then I marked the top and bottom of the Key. I transferred these marks to the side. Then I held the key on the outside and marked where the hole needs to be drilled.



I drilled the hole with a #20 drill. 5/32" drill would also work. I tapped the hole with a 5mm x .8 metric tap. To grind the slot for the Key I used a Dremel with a 1/8" straight bit.



I tilted the tailstock into the bed that made it good a solid and positioned so I could easily grind the slot.



With the Dremel held vertically I took very small bites opening up the slot. When I had it close I held the Dremel at about 45 degrees and gently went up and down the sides that squared up the slot and snuck up on the perfect fit. I would occasionally slide the quill in and push the key in place to see if I had it ground deep enough in depth and length.





There are probably enough threads to hold everything as is but the 3520C has a nut on the outboard side to create longer threads. I dug through my metric parts bin and found a nut to fit. I waxed the screw and then screwed the nut on. Applied some GB weld thick epoxy to the casting and then screwed the screw and nut into the casting all the way. I let it dry overnight.



I mixed a little brown into some yellow paint and got pretty close to the mustard color and painted it. I'm quite happy with the results.



Parts.

JT9-JWL1221VS-227 Key

JT9-3520C-223 Quill

JT9-3520C-227 Lead screw

JT9-F009674 10-32 x 5/8" BHSCS BO