Jet 1442 Belt and Bearing Replacement

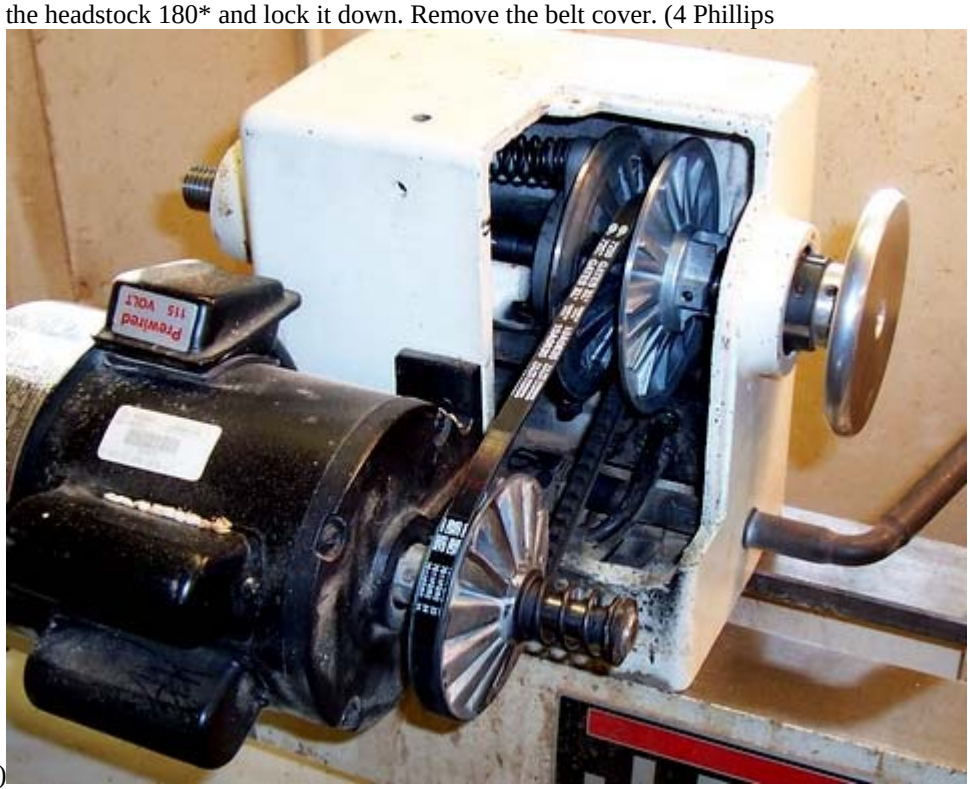
By Bill Bolen

I was pretty sure my belt was shot and after watching the drive action with the cover off I knew it. The belt was much more narrow than a new one and at high speed I thought for sure it was going to fly off. I also suspected the nose bearing was shot. With any axial pressure on a bowl there was a definite rumbling and a vibration that translated into chatter marks on the bowl blank. I debated taking the head into the service center for the pro's to fix but decided to do it myself. For me taking something apart has always been easy. Putting things back together right was a whole different story! With this in mind I made sure my mind set was one of precision rather than muscle. Made all the difference when I ran into some trouble and had to think it through rather than "force it in". This is how I did mine and I hope it helps you do the same.

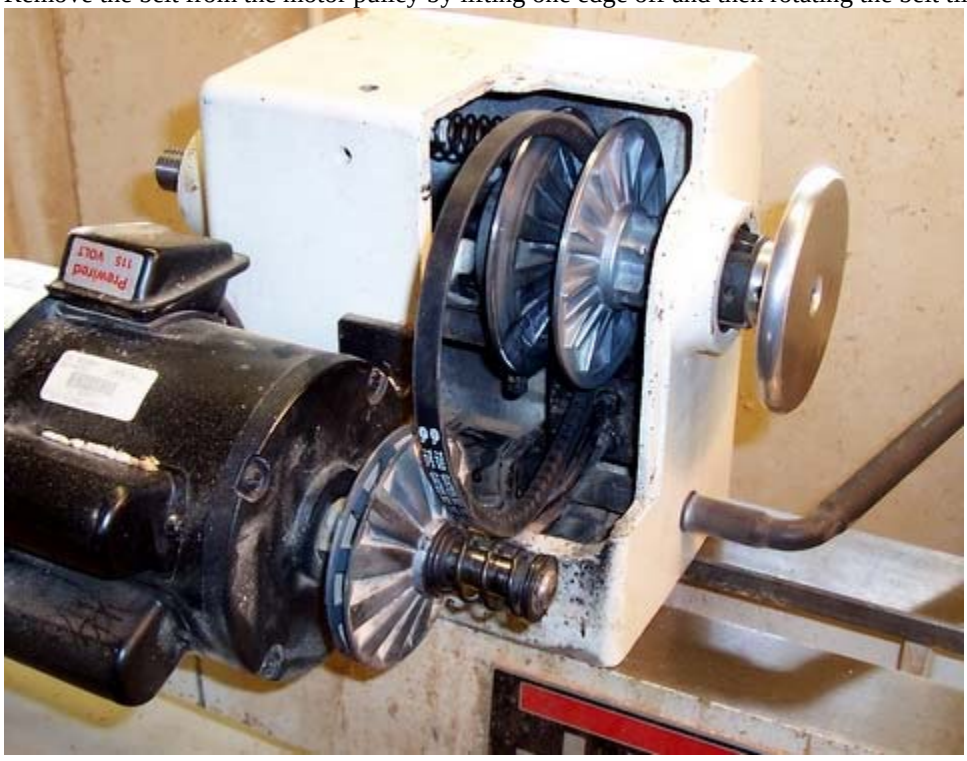
Firstly break out your owner's manual. On page 20 there are a few pictures and a description of the steps required and the parts involved. Look over the exploded parts diagram so you know where the parts being discussed are actually located.

Run the lathe up to maximum speed and unplug. Don't touch the speed lever again until we are completely done.

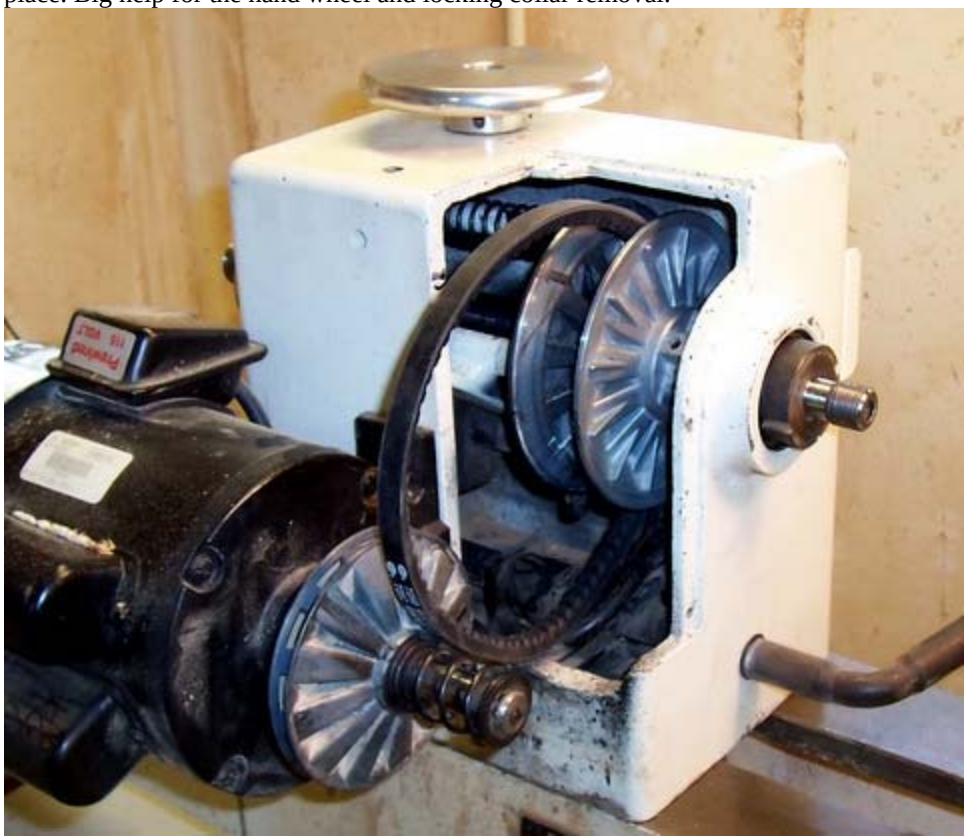
Swivel the headstock 180* and lock it down. Remove the belt cover. (4 Phillips screws)



Remove the belt from the motor pulley by lifting one edge off and then rotating the belt till it falls off.

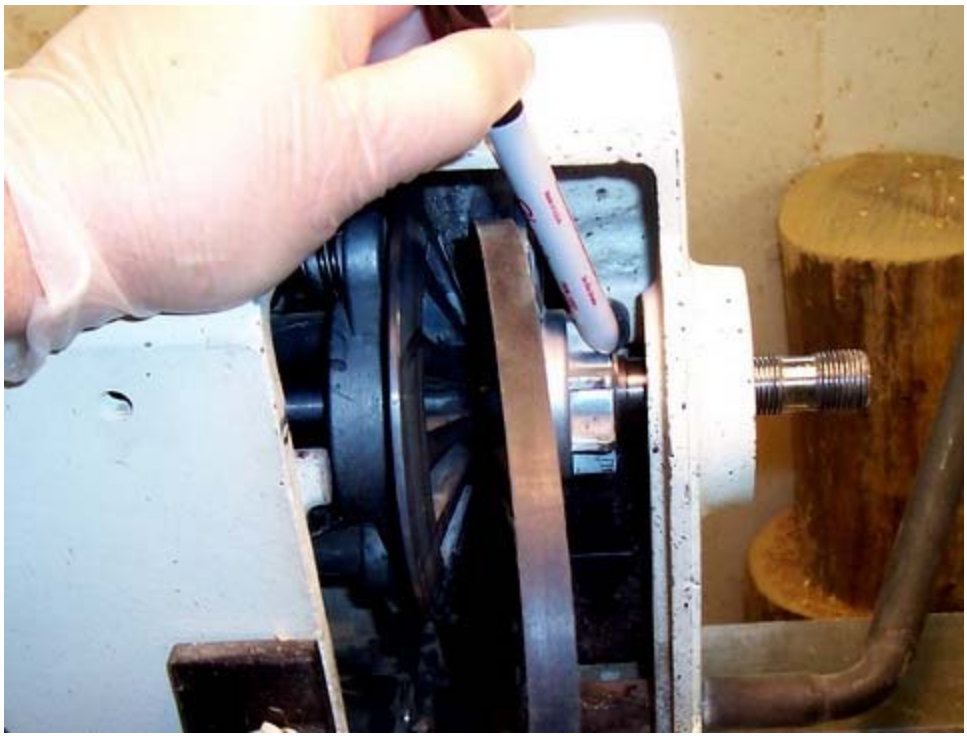


Loosen the two setscrews in the hand wheel (3MM hex) and unscrew the hand wheel. These are right hand threads so remove by turning clockwise. TIP: screw your indexing pin into the spindle so as to lock it in place. Big help for the hand wheel and locking collar removal.



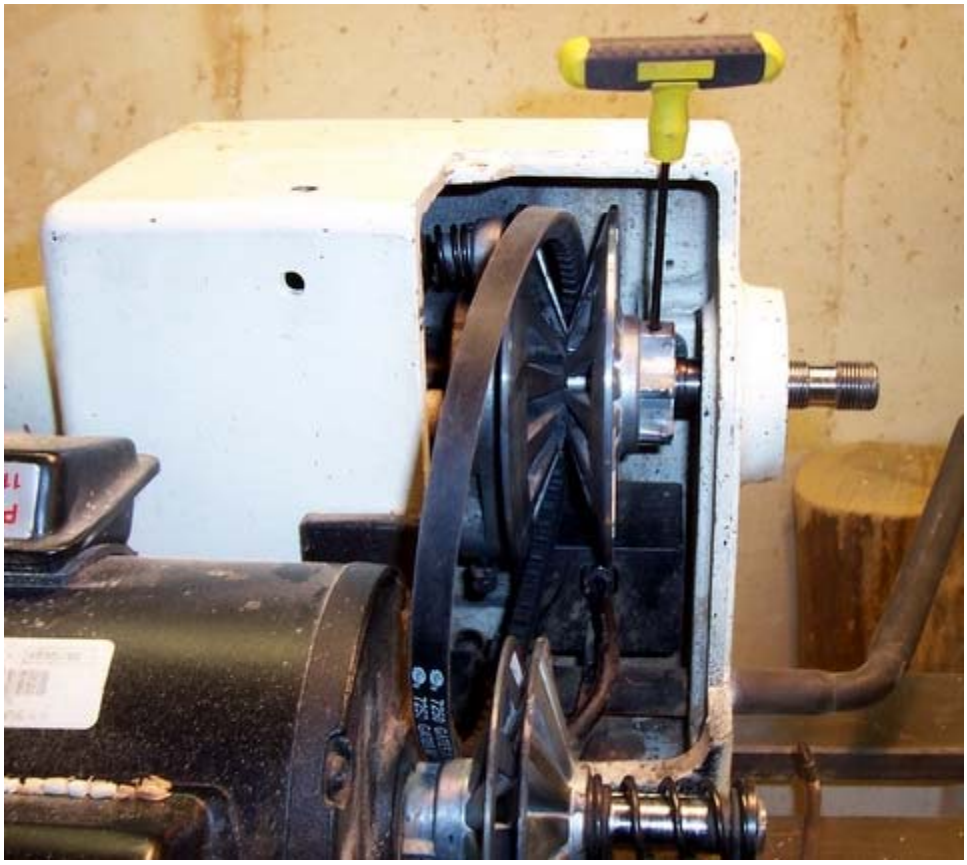
Loosen the hex screw from the locking collar (8MM hex) and unscrew it and remove from the spindle. Right hand thread again.

Locate and remove the locking snap ring from the spindle. This is a U shape ring and sits in a machined groove in the spindle. I tried pulling it off with needle nose vice grips to no avail. A round dowel was too large to contact just the snap ring and was blocked by the back edge of the fixed pulley. I ended up using a rectangular scrap of wood and with the open bottom of the ring facing up I tapped it off with a sharp blow from a small hammer. In hind site I should have loosed the two setscrews in the pulley first and then I could have slid the pulley to the left giving me all the room I needed in this cramped space.

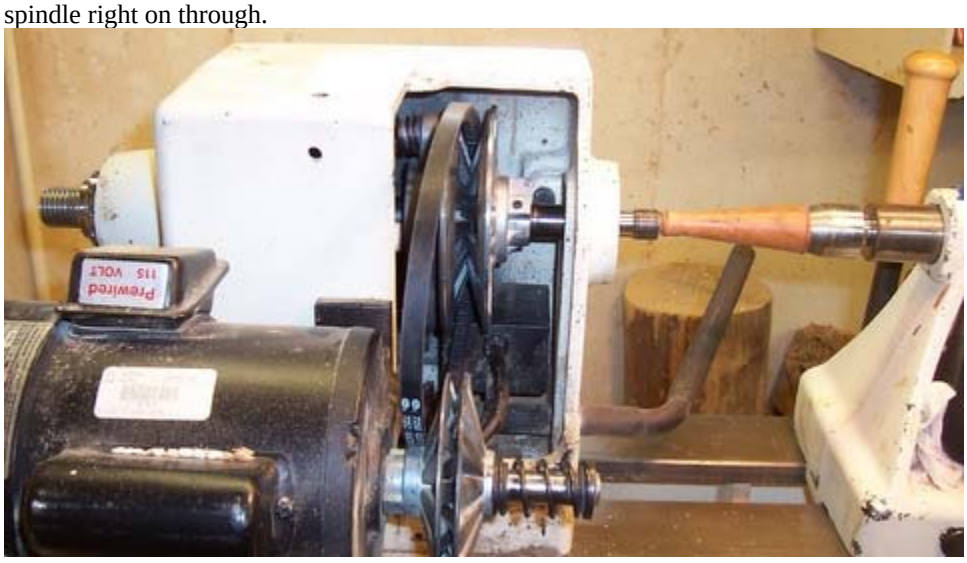


And the snap ring is off.

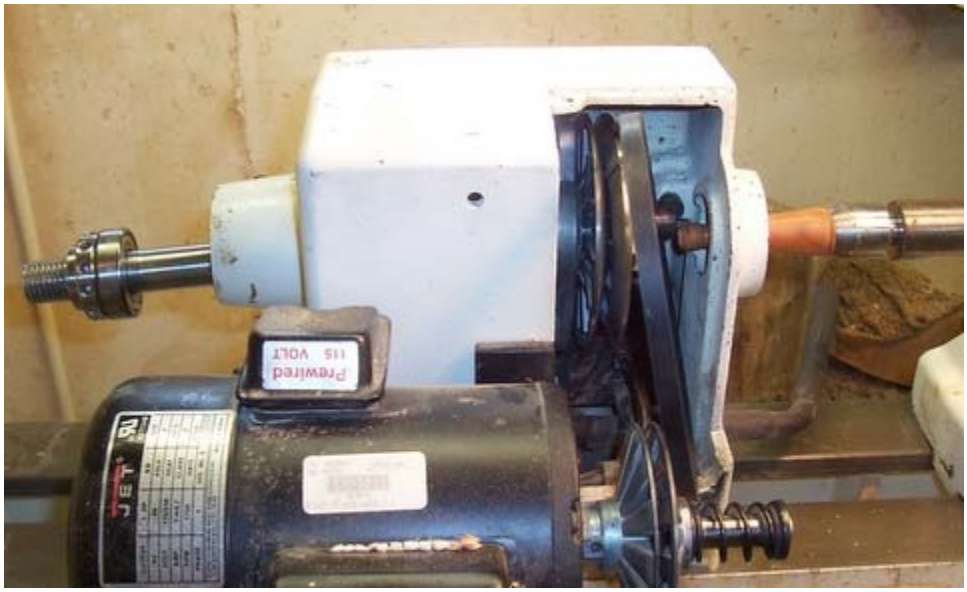
Loosen the two hex set screws on the fixed pulley (1/8” hex). These 2 set screws are standard ¼” X 20. One of mine was missing so a stop at home Depot for a replacement.



With the snap ring removed and the fixed pulley sitting loose the spindle can be pressed out. I originally tried pressing it out with the tailstock but the spindle would not budge. I used a block of wood and a small hand sledge with 2-3 hard blows to break it free. Once free I brought the tailstock up and easily pressed the spindle right on through.

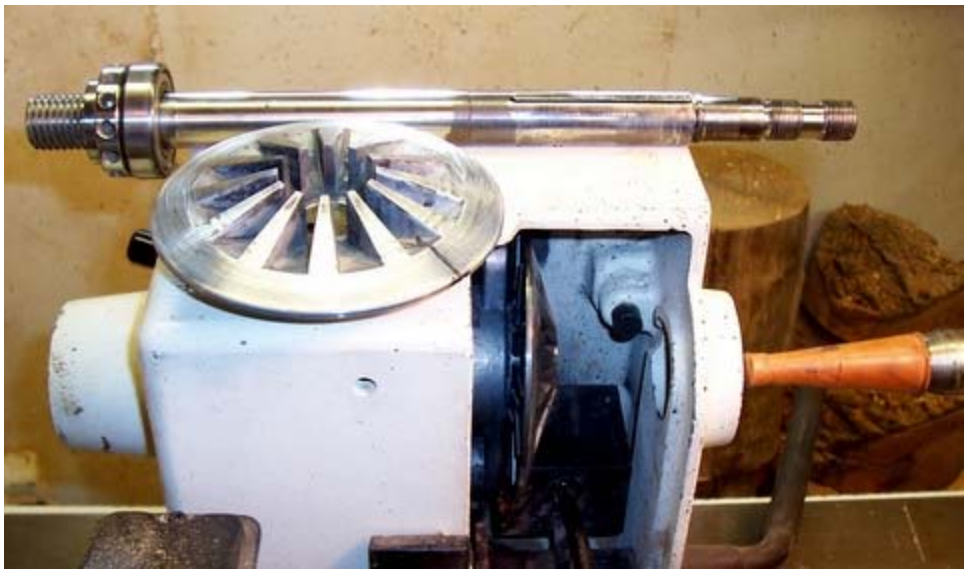


And the spindle is out.



If you are just replacing the belt you can stop here and skip ahead to the re installation. Slide the pulley off; put the new belt in place and lining up the keyway slot in the pulley with the key in the spindle slide the fixed pulley back into place. I took my old belt to O'Reiley auto parts and they matched up the numbers and gave me the new one. I bought the more expensive GATES belt hoping for a bit more duration. If you are replacing the bearings continue on.

Keep pushing until the spindle is completely loose. Slide the fixed pulley off of the spindle and pull the spindle all the way out.

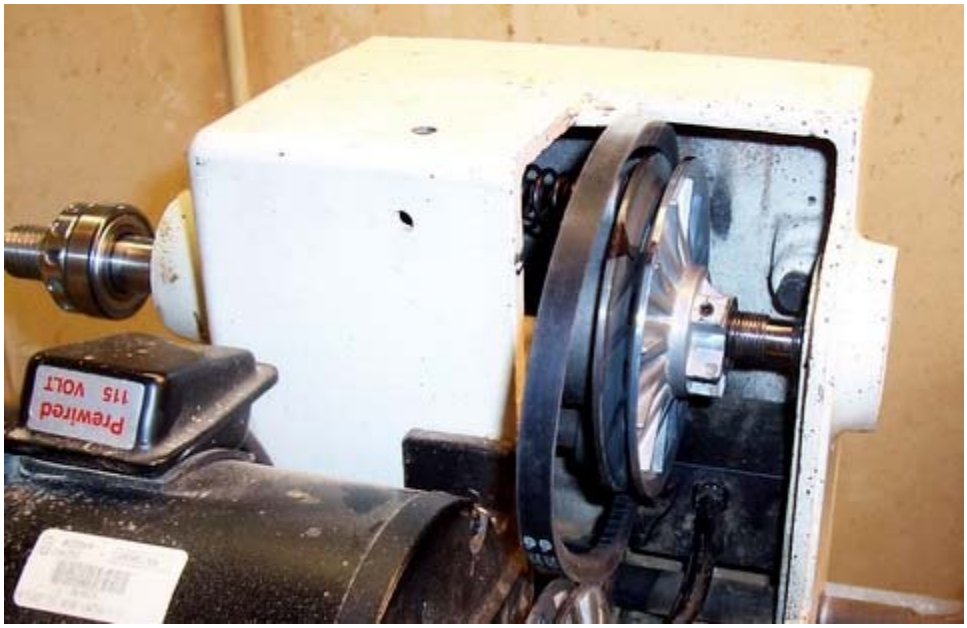


I used a long dowel and tapping the dowel with a small hammer got the hand wheel end bearing out. Careful here! When the bearing comes out the large wavy washer behind the bearing will likely jump right out and you will be on the floor looking for it! DAMHIKT!!

Pictured below are the old shielded bearing on the left, the new sealed bearing on the right and the wavy washer in the back.

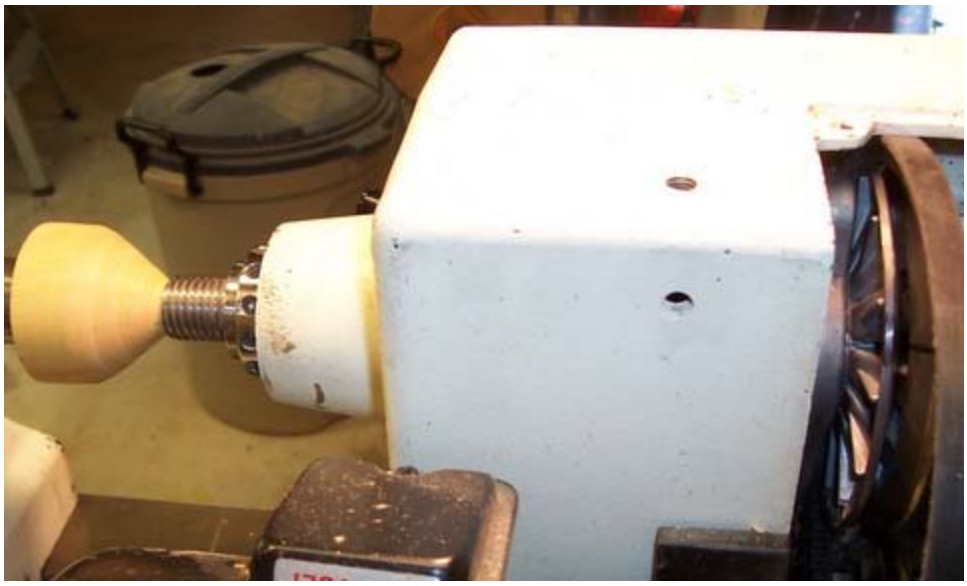
Here is where I ran into trouble. When I started the re assembly each time I tried to press the spindle and fixed pulley back into place the fixed pulley was forced off the spindle and I could not get the spindle into the end bearing. I pulled everything loose and took it to the bench. With the spindle in hand I should have been able to just slide the fixed pulley all the way up the spindle shaft. But, it would not even slide onto the spindle shaft. I looked at the bare shaft and noted some old scoring. A look inside the pulley shaft hole showed a bunch more scoring. I took some 400 grit paper wrapped around a dowel and lightly sanded the scoring and burrs from the pulley shaft hole. I also sanded the burrs and scoring smooth on the spindle. While I was at it I also sprayed on a coat of graphite on the spindle shaft and into the pulley hole. That got it. The pulley now slid right onto the shaft. Now is also a good time to do a little more work. Look at both your fixed and movable pulleys. Mine were very shiny from the belt wear. I took some100 grit and roughed up those surfaces to give that new belt a better grip. I also took a second to mark the key way slot location on the pulleys where I could see them at assembly time. Really glad I did that! The 1442 has a third bearing. This one is mounted on the movable pulley still in the lathe. Mine was ok so I did not replace it even though I took the pulley out for inspection. Sorry, no pic of that little step. I'm told that this bearing and pulley assembly will also need to be pressed off by a pro but don't know that to be a fact. I took my spindle and the new bearing to a local transmission shop and they pressed the old bearing off and the new one on. Took them just a few minutes and the gentleman who did the work told me to pay what I felt like. I gave him a twenty and was happily on my way!

Now onto the assembly. I slid the spindle thru the lathe nose and into the movable pulley. Lining up the key way slot with the key way I pushed the spindle thru the movable pulley. Standing on the back side of the lathe so I could get a good grip on the parts and move things in place I put the new belt in place. Then the fixed pulley is pushed onto the shaft matching the mark on the pulley with the nearly invisible hey. Keep sliding the spindle in while sliding the fixed pulley all the way up the shaft till both pulleys are fully mated. Barely enough room to keep the belt in place. You will need to hold this sandwich in place and keep the belt from binding against the inside of the lathe housing while tapping the spindle nose with a rubber dead blow mallet till the spindle threaded end is just inside the hand wheel bearing. 3 or 4 hands would be helpful here! Once this assembly is lined up bring the tailstock back up so as to press the spindle all the way into place.

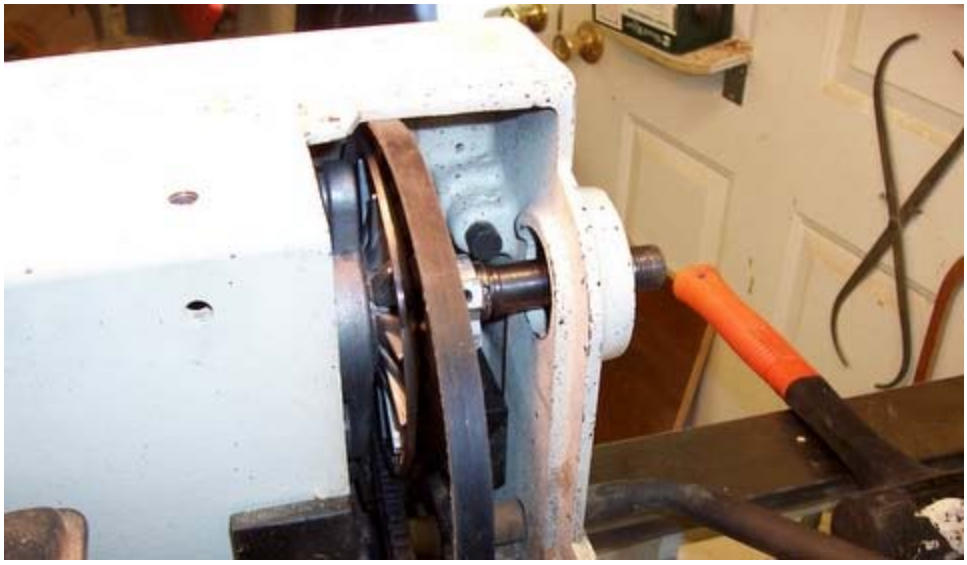


The setup for pressing.

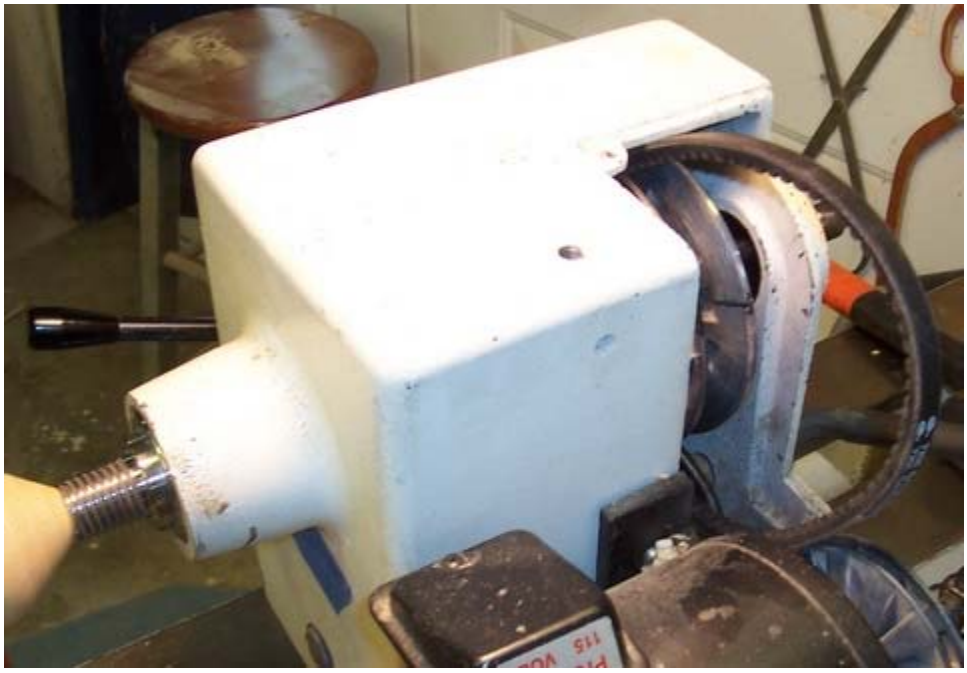
Left hand Pressing in the spindle and right hand keeping the parts sandwich in place while keeping the belt from binding against the interior lathe housing.



Almost there



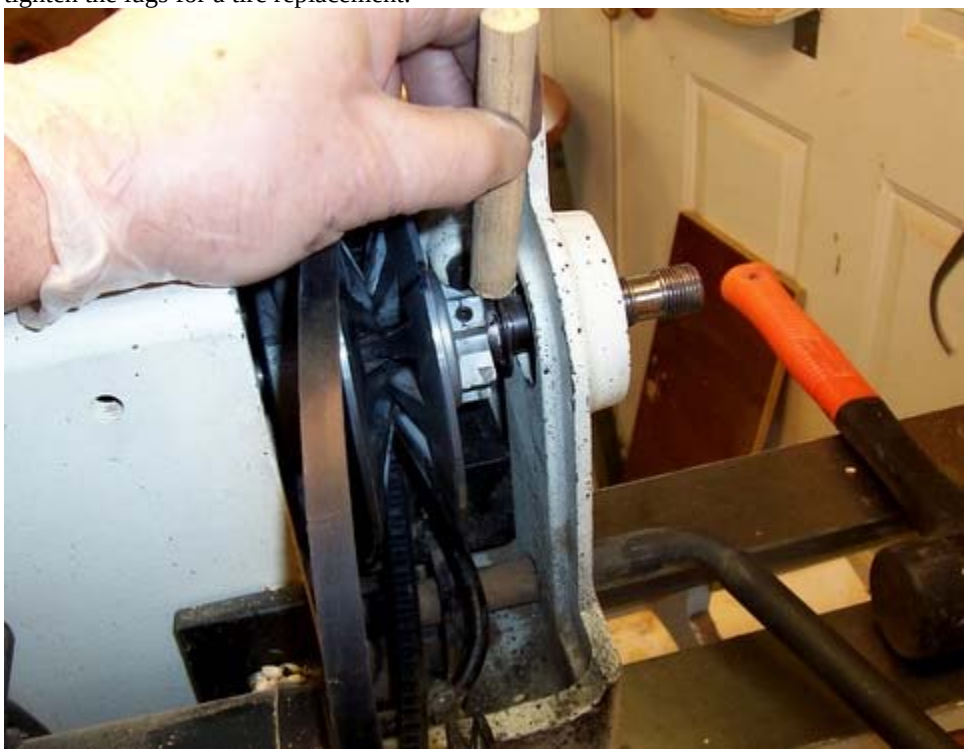
And we are in!



Now that everything is pressed in place break out your indexing pin. I used this referencing all three holes to insure the shaft was truly seated all the way. It was not. The bottom-indexing hole was out of place just a smidge. So another crank of the tailstock and she was fully in place.

Install the snap ring onto the spindle. I used a needle nose vice grip and held the ring in the groove then gave the vice grip a sharp tap to get it partially seated. Removed the vice grip and fully seated the snap ring with a dowel and hammer tap. Slide the movable pulley to the right till it touches the snap ring and tighten

the setscrews. I found it best to alternate the tightening from one screw to the next till tight. Kind of like tighten the lugs for a tire replacement.



Using just your hands (no screwdrivers or wedges please) pull the motor pulley apart and hook one edge of the belt over the pulley lip. Turn the pulley and the belt is back in place.

The locking collar has one embossed side and one smooth side. The smooth side goes towards the hand wheel. Insert your indexing pin again and screw the locking collar onto the spindle shaft. Right hand threads turn counterclockwise to tighten.

Screw the hand wheel into place and tighten both setscrews.

You are about done now. At this point I removed the indexing pin, plugged the lathe in and ran it through all the speeds for four or five minutes. Just making sure all was well before putting the belt cover back on. Notice in the pic that the lathe is now at it's slowest setting. The motor pulley is wide open and the spindle pulley is closed.

All done! I mounted up a long square spindle and turned it round. All the speeds were used and a bit of hogging out was also done just to make sure the job was right!

If you followed along with your own 1442 enjoy the fruits of your labor. My 2007 model runs stronger, quieter and with no vibration from the worn bearings.