

# Powermatic 1150A Variable Speed Drill Press Spindle Replacement



I picked up this powermatic for such a great price, but it had 0.01" of runout at the tip of the spindle JT33(taper). This would translate to huge amounts after the chuck was on and a drill bit installed.

Suggestions were made by skilled and knowledgeable people about using a bottle jack to nudge the taper. Other people may have been successful, but I was not. So I acquired the correct bearings and a new spindle.

After removal and inspection of the spindle I noticed that the lower spindle bearing had not been driven all of the way down to it's seat. I believe that my spindle may well have been perfectly good. It would be an easy thing to verify before ordering parts. I'm just sayin'



## Homework to do:

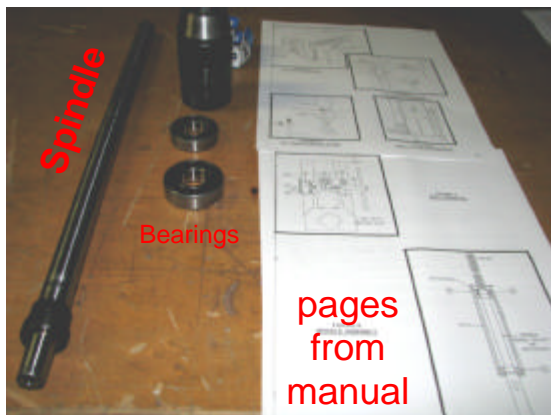
<http://www.owwm.com/mfgindex/pubdetail.aspx?id=889>

[http://www.owwm.com/files/PDF/FAQ/drill\\_press\\_tune-up.pdf](http://www.owwm.com/files/PDF/FAQ/drill_press_tune-up.pdf)

<http://owwm.org/viewtopic.php?t=41350>

<http://owwm.org/viewtopic.php?t=46088>

Get your parts ready, have diagrams from manual printed and handy



Familiarize yourself with the process in manual (*reproduced below with figures on last page*)

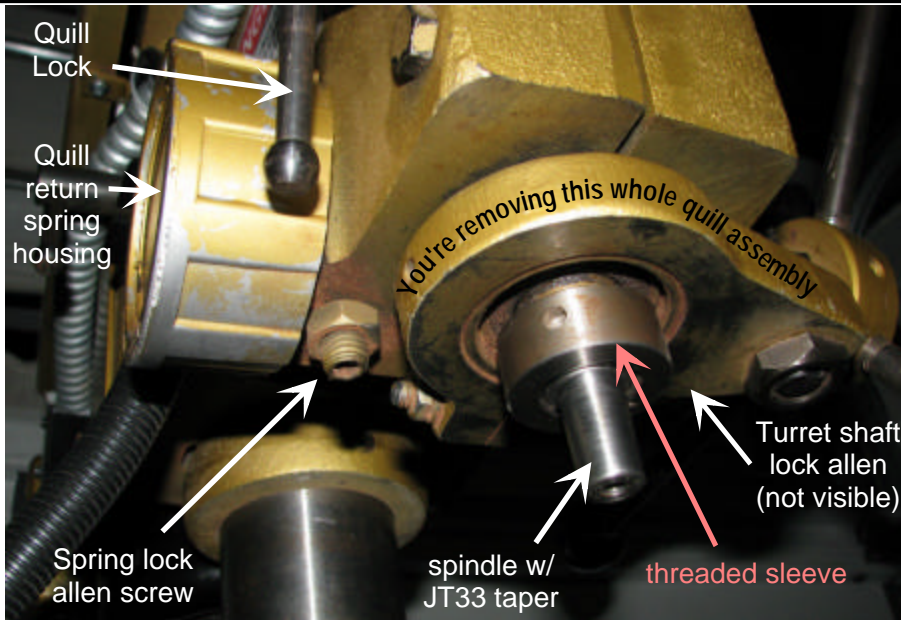
### REPLACING SPINDLES ON QUILL ASSEMBLY

To change the quill assembly for any reason, proceed as follows:

1. Hold quill return spring housing (B) in left hand (see Fig. 7)) and loosen lock screw (A). Let spring unwind slowly, by allowing housing to turn in hand. **3 Full turns**
2. Loosen setscrew (C) (Fig. 7) and remove nut (D) on bottom of depth stop rod. Unscrew and remove depth stop.
3. Lower quill assembly to the position where the turret pinion shaft can be removed (E). Entire quill assembly will then slide out of head.

To change spindles, follow the above steps, then (Fig. 8):

1. Loosen setscrew in collar (A) to reach this screw, insert a 5/32" Allen wrench through hole (B) in top of quill. **(2) set screws!!**
2. With hard rubber mallet or block of wood, tap spline end of spindle. The spindle, with bearing (C) will come out of the quill.
3. Use an arbor press to remove bearing (C).
4. To replace spindle, reverse above procedure.
5. When replacing collar (A), remove all end play from spindle.
6. When replacing quill in head casting, rotate spindle, if necessary, to engage spline in pulley driver.
7. If necessary, remove lock ring (F) and cover plate (G) (Fig. 7) from spring housing and make certain tongue on return spring (H) is properly inserted in slotted end of pinion shaft. Replace cover and adjust spring tension as instructed under heading "QUILL RETURN SPRING ADJUSTMENT".



Look at underside of head

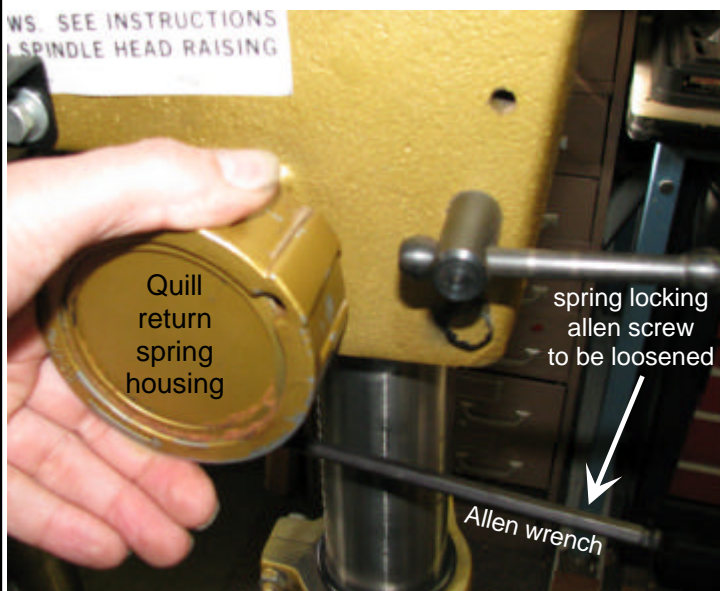
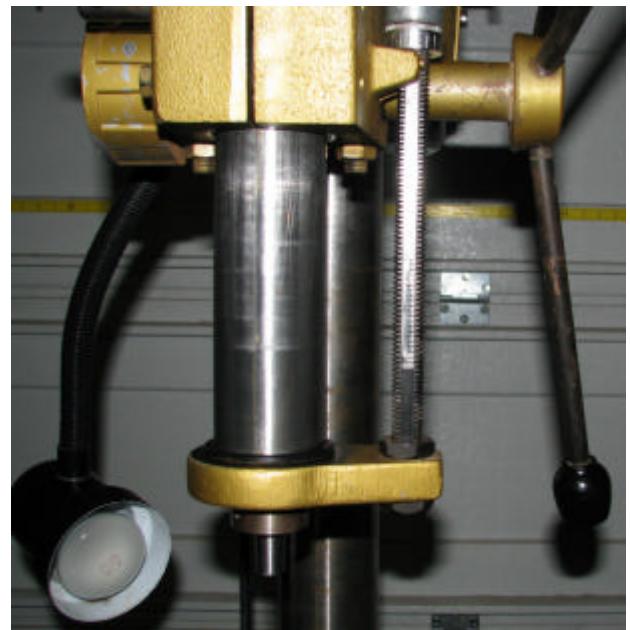
Take note of screws and parts

You're going to remove this quill to get access to the spindle and bearings

Threaded sleeve holds Jacobs 633-C chuck  
Is not a standard item on PM 1150A  
But it can be used to aid in pushing a chuck down off the taper\*

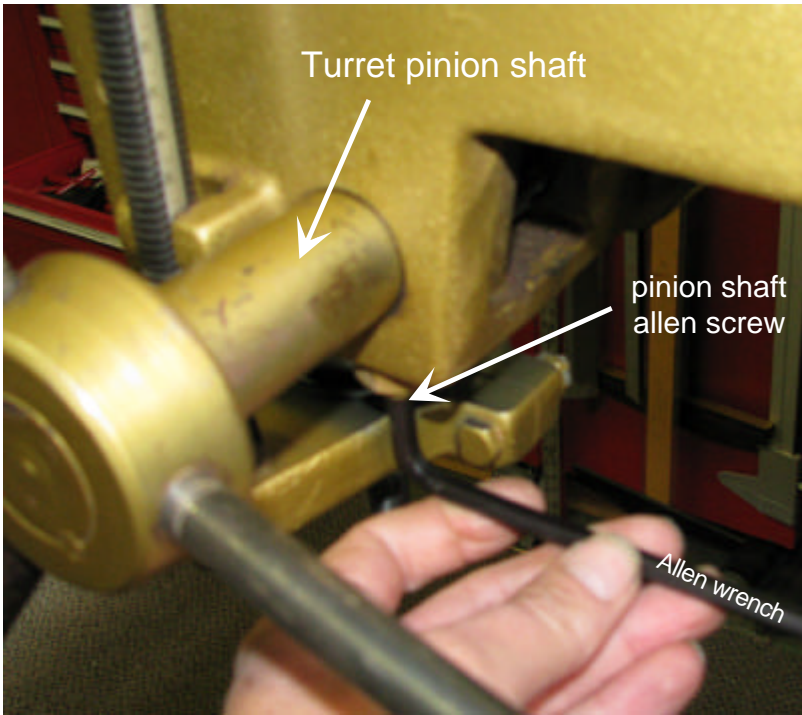
\*Note per Bob Vaughan

Lower quill all the way to bottom and lock in place with quill lock



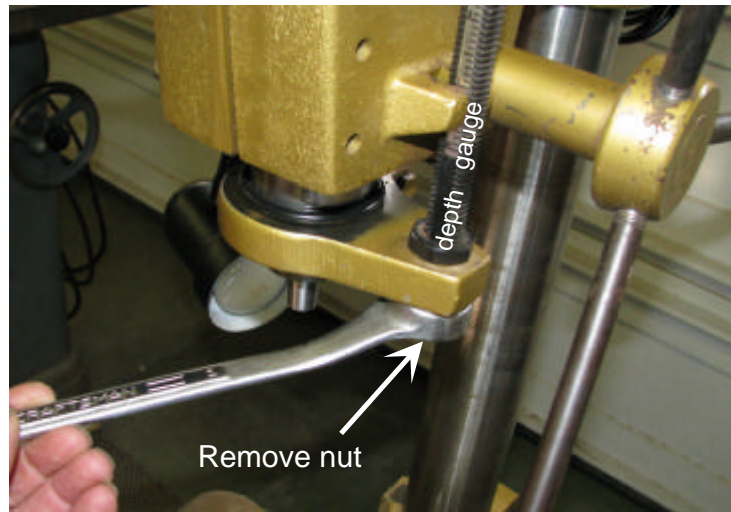
Loosen spring lock-screw using an allen wrench while holding the round housing so that it does not unwind.

Allow spring housing to unwind slowly approximately three turns until there is no tension left in spring. Gently doing this may save you from having to go inside of the spring housing to reattach the spring.

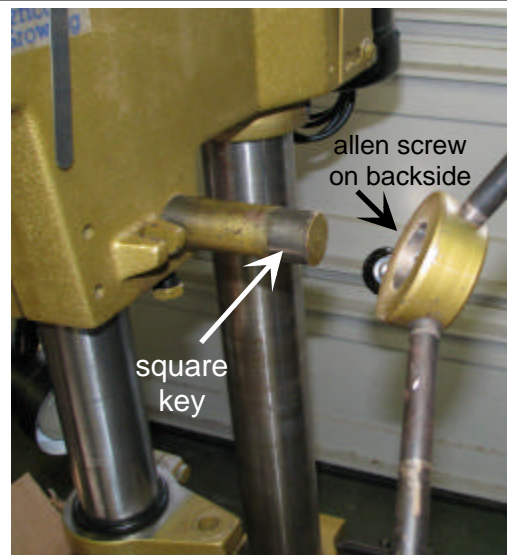


Loosen other allen screw on the other side of the turret pinion shaft

Remove depth gauge

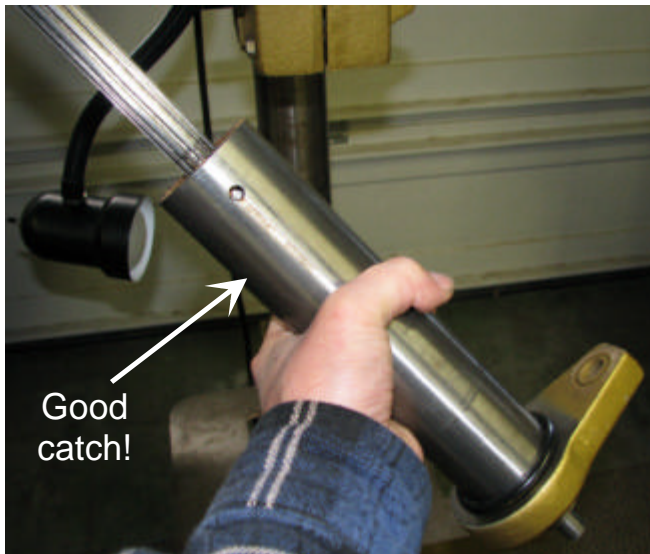
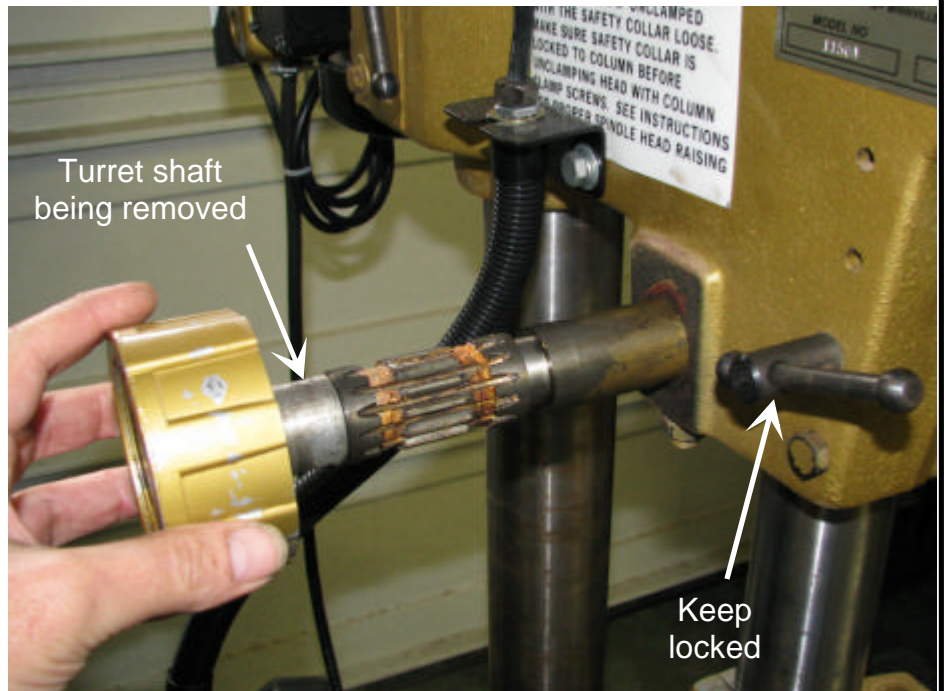


Remove Crank handle  
Held in place with allen screw on a shaft square key



Now you can pull out the turret pinion shaft keeping the return spring unit intact.

Keep quill lock tight because it could fall out and on to floor without the shaft to keep it in place.



The whole quill will come out through bottom of head when you unlock the quill.

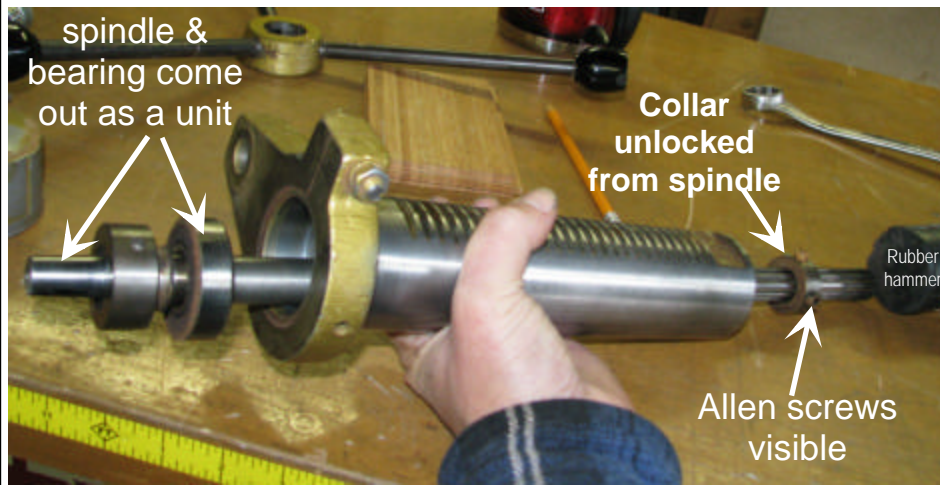
Be sure to catch it.

On work bench:  
loosen TWO set screws on spindle retaining collar.

Collar is inside of quill and screws are accessed via the hole.

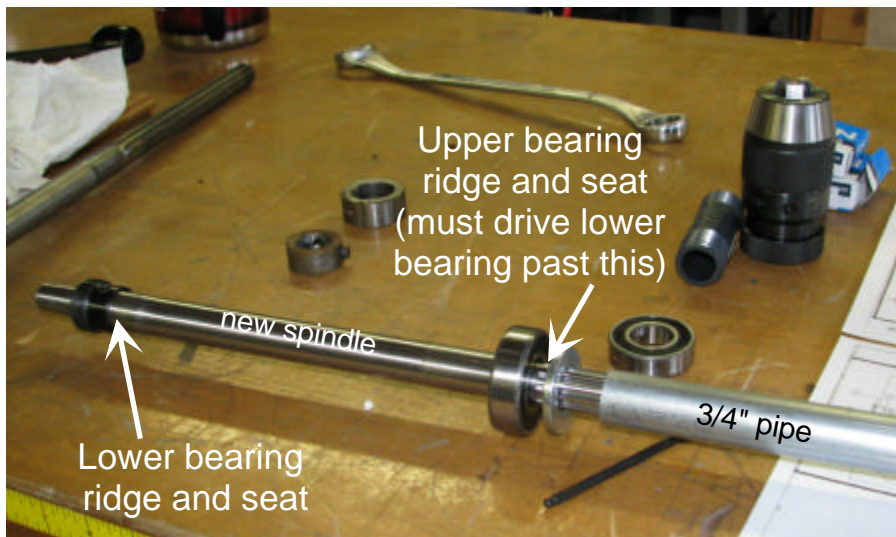
The two set screws are in separate locations 90 degrees to each other.





With collar removed, you can gently knock the spindle and bearing out through the lower end of quill by using a rubber mallet on the upper end of spindle

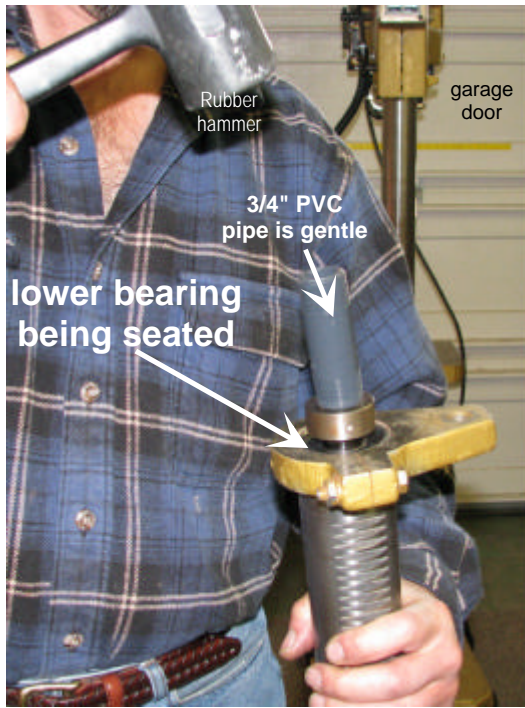
With spindle removed it should be easy to pull the upper bearing out of the top of the quill



Install new lower bearing. 3/4" pipe with a washer can be used to drive the bearing past the upper bearing ridge, down the spindle, and tightly onto the lower bearing ridge where it belongs.

*This is where my bearing was not properly seated all the way and resulted in my runout.*

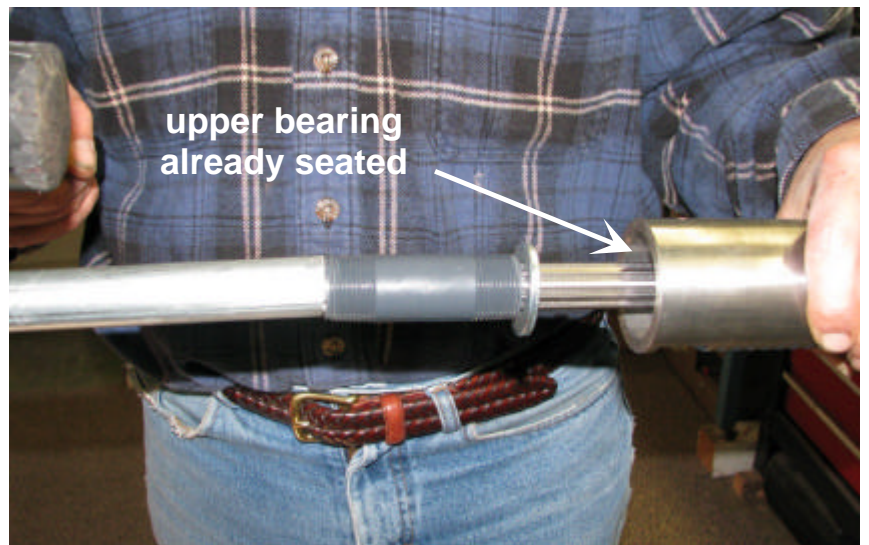
The bearings should seat against their seat rims



Insert spindle with installed lower bearing into the quill

Seat bearing into the quill with some gentle taps

Seat upper bearing using similar tricks



Re-install collar with two set screws.

Make sure there is no play or slop in spindle.

Everything should move freely.

Re-install quill unit in reverse order



**Sources:**

Allen Turner  
 Chuck Flohr  
 Bob Vaughn  
 Me, Tom Haney  
 Calvin Crutchfield  
 Keith Bohn

*for "Model 1150 15" Drill press manual posted in OWWW.com  
 for parts, instructions, and confidence  
 for so many things  
 for having the guts to try  
 for camera and moral support  
 for his general inspiration and letting me into the club*

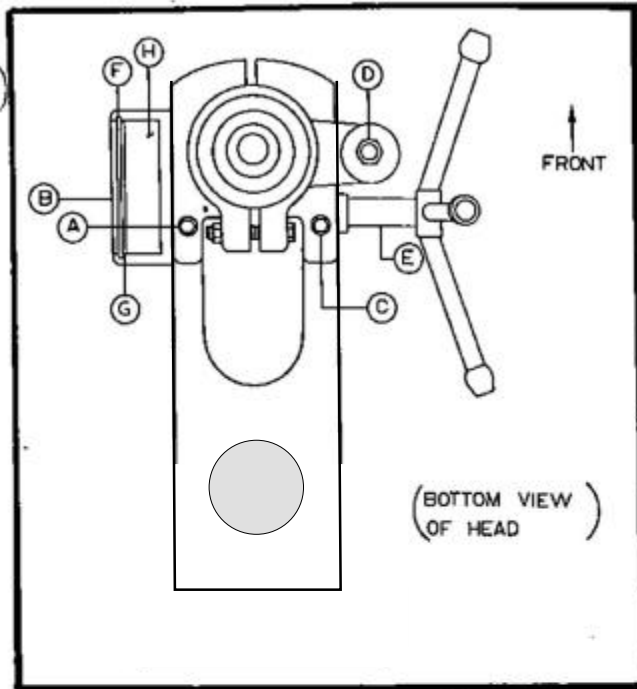


Figure 7  
QUILL REMOVAL



Figure 8  
SPINDLE ASSEMBLY

