

# RF-30 Mill/Drill Head Pictures, Version 1.1

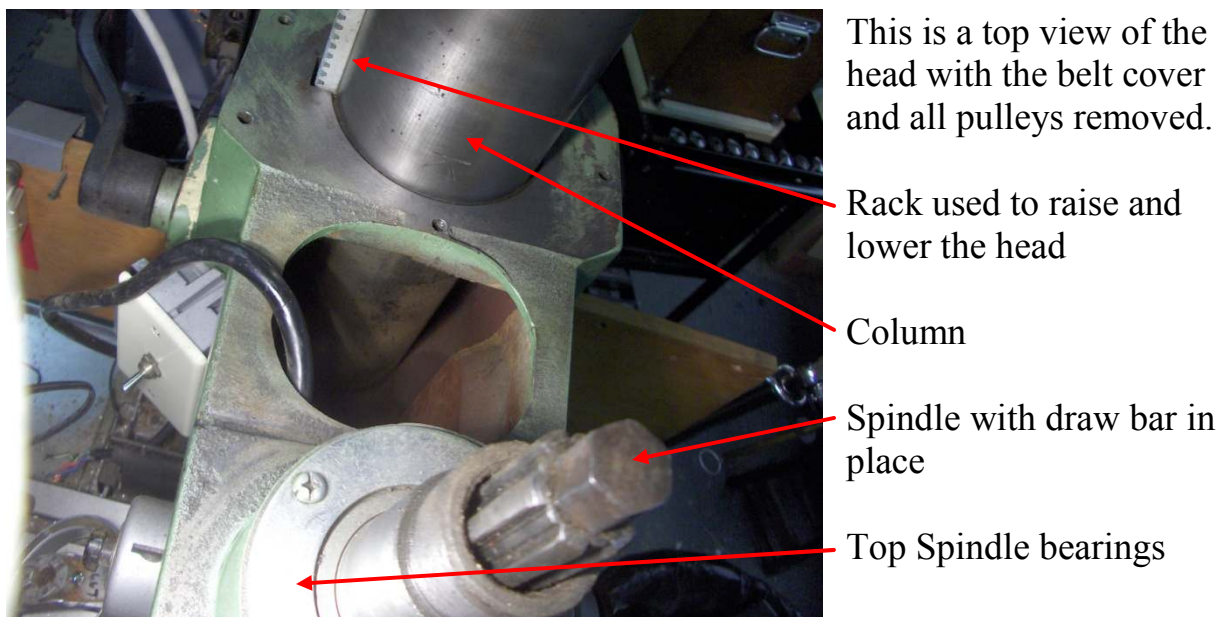
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**Pictures By John Herrmann**  
**Comments By R. G. Sparber**

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Sometimes it is really helpful to see pictures of your destination before starting out on an adventure. Such is the case when you want to take apart a RF-30 Mill/Drill. John has done a masterful job of documenting his journey with his RF-30.

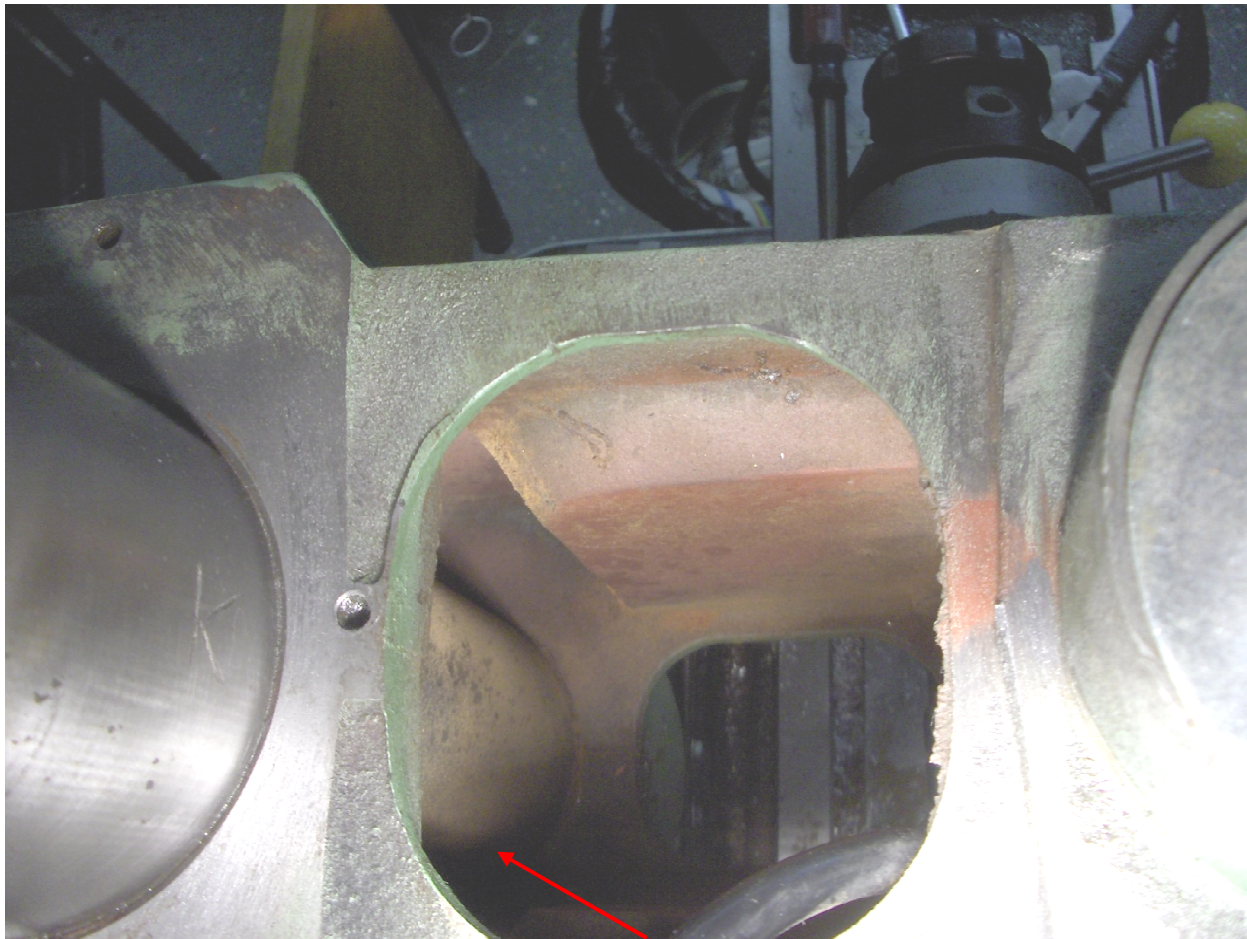
Please understand that many factories make this machine and variations are common.



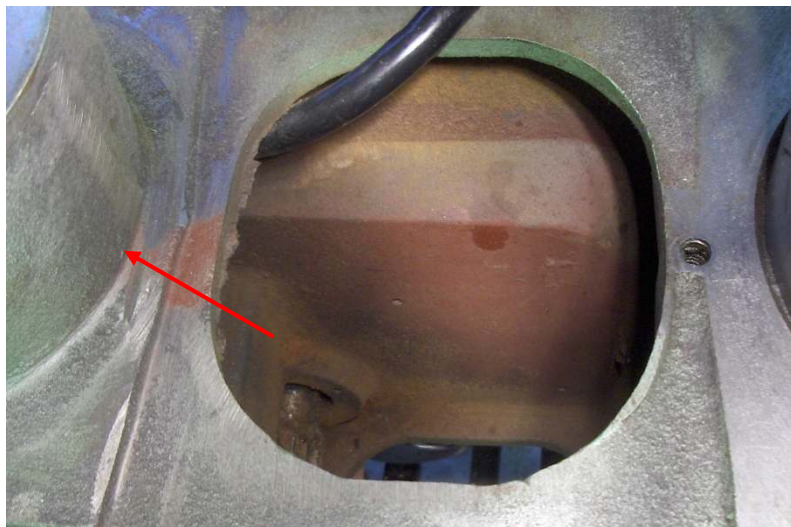
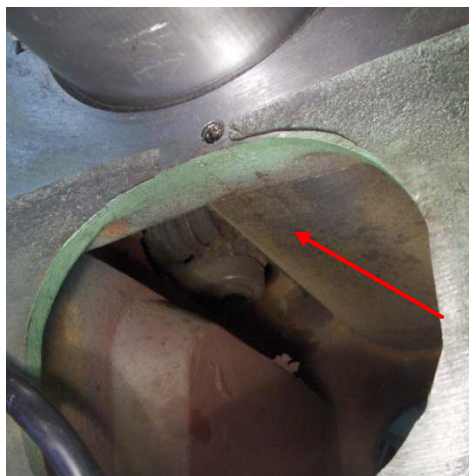
Note that much of the head casting is hollow. The contact between head and column is limited to the top and bottom of the head.

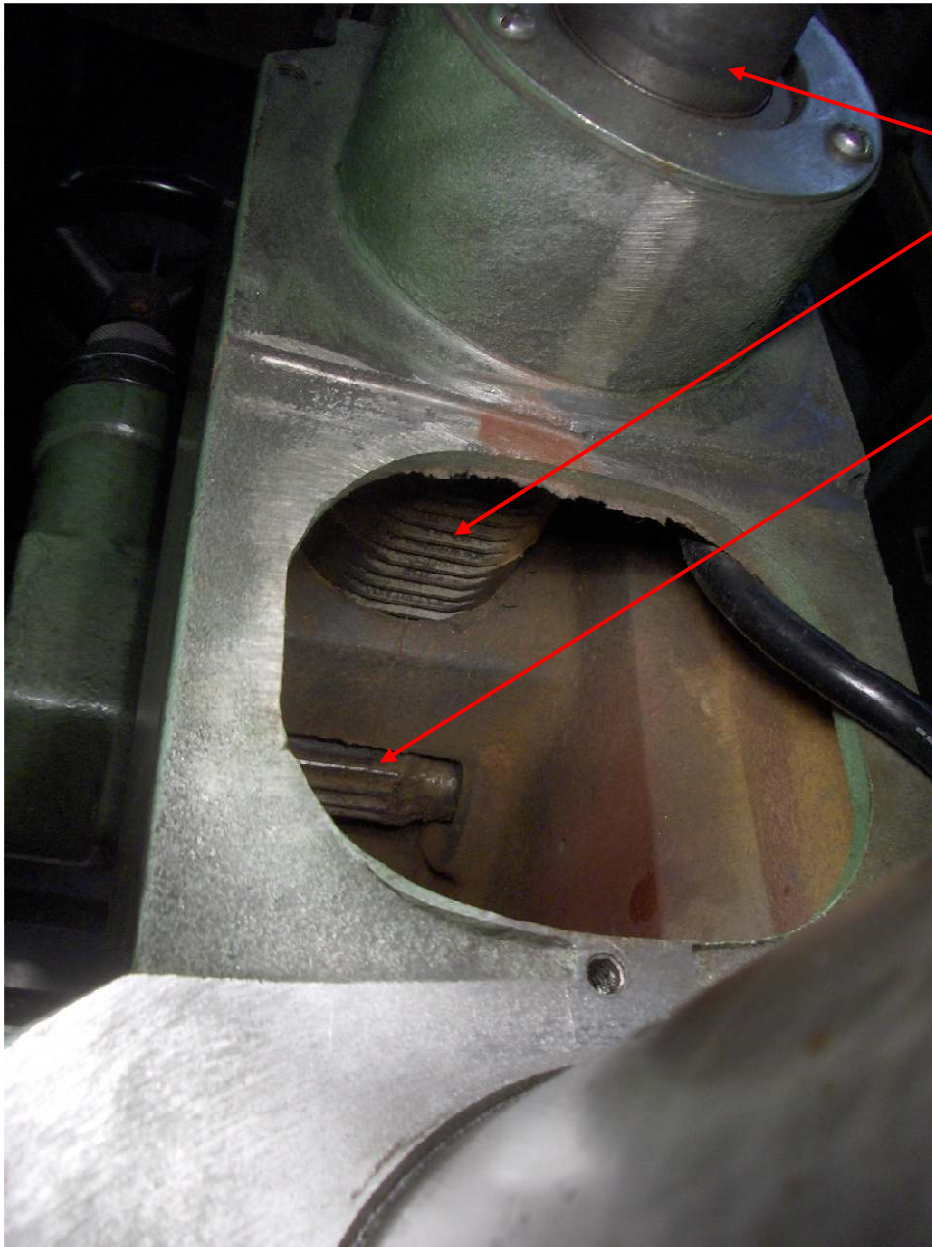
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<sup>1</sup> You are free to distribute this article but not to change it.



The column is mostly exposed inside the head.





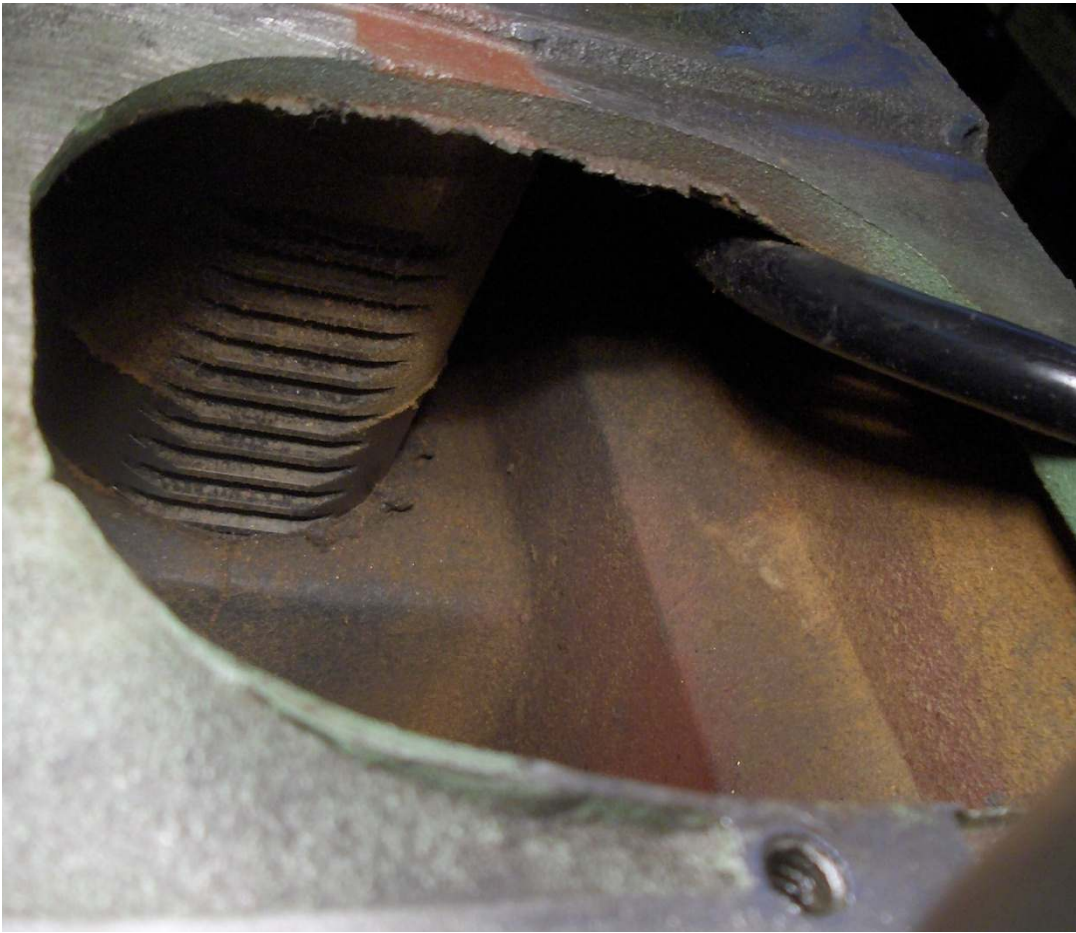
The spindle is held by the quill.

The quill has a rack cut into it.

The rack engages a pinion gear.

Teeth in both the rack and pinion were machined with a large circular cutter. This means that the depth of the teeth is greatest in the center and goes to zero depth at the ends.

Side play in the pinion gear translates to a variation in backlash because the percent engagement of the teeth varies.



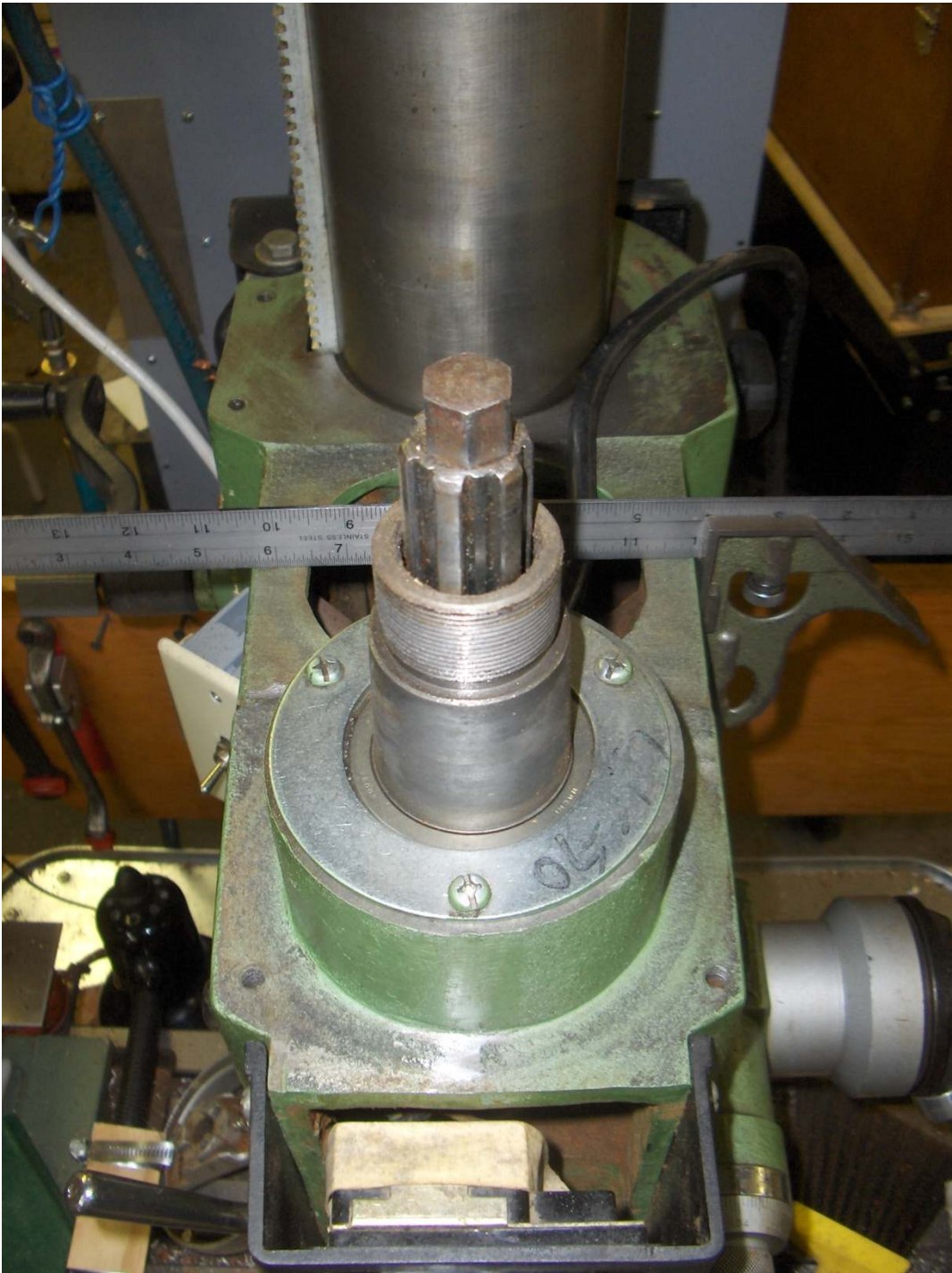
Because the rack in the quill was machined in, a simple round bore can pass both the quill and its rack.



You are looking at the top of the column. It is about 4 ½ inches in diameter and has a wall about ½ inch thick.

This may look like a piece of pipe but is actually a casting. The base is put on a large lathe and this column's outside diameter is turned.





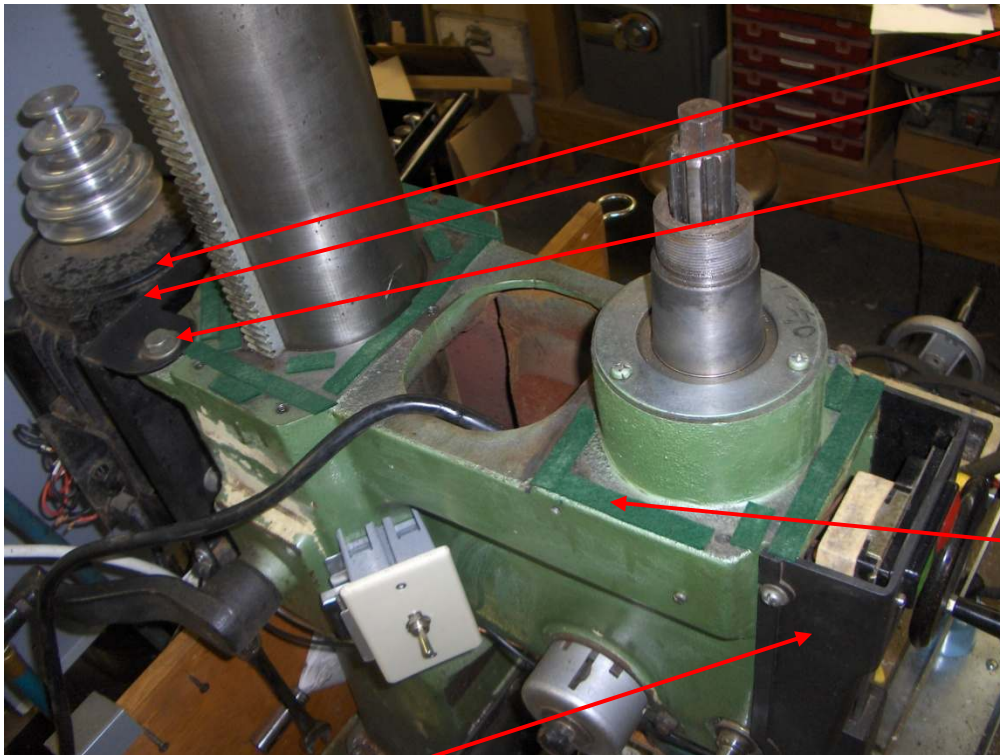
The opening in front of the column is about 4 ½ inches wide.

The head is about 6 ½ inches wide.





The flat to flat distance of the casting around the column is about 8 inches wide.



The motor and its mount can be seen on the back of the head. A bolt fed in from the top plus one from the bottom provide the pivot for the mount. A tensioning bolt, not visible, is on the opposite side of the mount.

The green rectangles are felt glued onto the head. They reduce vibration noise in the belt guard.

The front cover.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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