

Disassembling, cleaning, and reassembling a Ruger 10/22 rotary magazine

Update: Check out my new blog, [The Arizona Rifleman](#).

I posted this as comments in [this thread](#) in the LiveJournal guns community, but figured it warranted its own page.

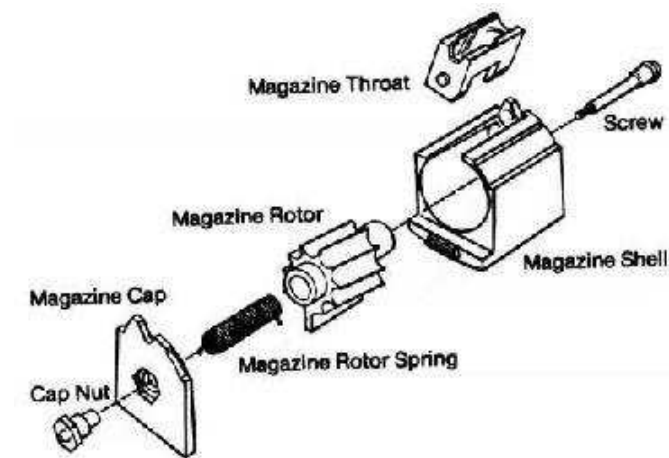
My Ruger 10/22 magazines were malfunctioning due to lack of cleaning, and had difficulty feeding rounds (the rotor wasn't rotating). Unfortunately, using a silencer like the excellent [Gem-Tech Outback II](#) increases the backpressure in the gun, making the action and magazines get very dirty, very quickly. Many people can go for years without cleaning their magazines, but I need to clean mine every few range sessions to keep them in good working order. Shooting a silenced 10/22 is [really fun](#), but requires that one clean the gun and magazines more often.

I looked around for some instructions online on how to properly disassemble and reassemble the magazines, but the information I found wasn't terribly useful. As a visual person, I decided it might be best to take pictures showing the processes so as to explain them better.

Although these instructions are made as clear and simple-to-follow as possible, they do involve disassembling mechanical components with small, spring-loaded parts. I am not responsible for any damage or injury that may occur while performing the actions described in these directions. Please be careful. If you have any questions, please feel free to contact me by email (address at the bottom of the page).

In reviewing my server logs, I've noticed that many people are coming to this site for general advice on disassembling and cleaning the 10/22 rifle itself. This page was made specifically for showing how to clean 10/22 magazines, but you can find an excellent guide for cleaning the rifle [here](#).

I've included an exploded diagram of the magazine itself. This should allow you to visualize the interior of the magazine before you start out. It also helps in verifying that you're putting the various parts back together in the proper way!



Enjoy!

Disassembling, cleaning, and reassembling the Ruger 10/22 10-round rotary magazine is very simple, provided you have the right tools, some manual dexterity, and a few minutes of time.

A 9/64th inch hex wrench is required. No other tools are necessary, though *gently* holding the magazine body in a vise or clamp may make it easier to work with. I didn't need one, but it might help some people.

You can click any of the images to embiggen them. They were taken with no flash, one-handed, so my apologies if they're blurry or unclear. Let me know if this is an issue, and I'll take better ones.

Video Disassembly Instructions

I made a brief video going through all the steps below with audio narration. I hope this helps.

Disassembly

Step 1: Pre-disassembly magazine. Ensure that the magazine is unloaded.	
Step 2: Using the 9/64th inch hex wrench, loosen the round side with the hex-wrench socket -- to loosen, turn the screw head counterclockwise. Just loosen it, don't completely remove it yet. While loosening the hex screw, push in on the screw head. You will notice the hexagonal piece (the "cap nut") on the opposite side of the magazine poking out. You may also notice the cap on the far side of the magazine popping out as well. For now, press the cap back into place so the hexagonal piece sticks out like so.	
Step 3: Remove the cap nut. Note that I bite my fingernails. I've done this for years. Oh well.	
Step 4: Remove the screw.	
Step 5: Remove magazine cap.	
Step 6: Remove the rotor. Note that one vane on the rotor is longer than the others. Keep this in mind. There's generally no need to remove the spring from the rotor hub.	

Step 7: Remove the metal feed lips ("magazine throat"). Note the angle it's at, which side is "up", and the different sized nubs on each end.



Step 8: Magazine is disassembled. Clean magazine thoroughly with a good solvent. I used Break-Free CLP, patches, and q-tips to remove fouling. Clean the vanes on the rotors, the feed lips, the magazine cap, and the main cylindrical body of the magazine. Be sure to wipe everything dry after cleaning. Having oil in the magazine will cause gunk to build up rapidly, requiring more cleaning in the future. As magazines are not high-friction devices involving lots of reciprocating motions or parts, it's all right to leave them dry.



Reassembly

Step 1: Disassembled (and hopefully cleaned) magazine.



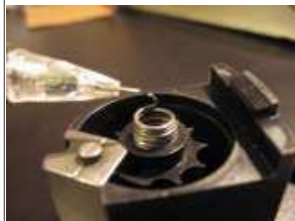
Step 2: Replace metal feed lips. Insert rotor. Note there are two ends to the rotor -- one with a small "shelf" where the vanes end, and one with a long "shelf". The long side goes in first and should fit into a depression in the magazine. Turn rotor clockwise until long vane is inside feed lips.



Step 3: Insert screw into the hole at the bottom of the magazine. While this can be done before Step 2, I did it in this order. Doesn't really matter. This prevents the rotor from falling out of its little depression. Note alignment of rotor vanes with long vane inside feed lips.



Step 4: Examine the small cap nut. Observe the small hole. Then examine the spring sticking out of the partially-assembled magazine. Note the small bit of spring that's vertical. Do nothing for now, just note their existence.



Step 5: Replace magazine cap. Ensure it fits properly on feed lips and that the spring protrudes from the hole in the center.



Step 6: Align the small hole on the cap nut and the small vertical spring bit. They should fit together like so.



Step 7: Note that the cap nut has six flat sides (duh, it's a hexagon!). Start with the spring untensioned, then rotate it eight notches clockwise. In other words, you're moving it one and one-third full revolutions, or 480 degrees. I find this easy to do when holding the cap nut with a pair of pliers, otherwise it slips through my fingers when under tension. When properly tensioned, use your finger to press the cap nut into the hexagonal depression in the magazine cap. Then, while holding the cap nut in place, use your hex wrench to tighten the screw on the other side. Ensure it's tightened firmly, but do not strip the threads or screw head.



Step 8: Magazine is reassembled. Verify spring tension and proper functioning by loading and unloading rounds. Ensure that each round springs smartly into position. Some magazines may require additional tensioning. If so, partially disassemble, adjust, and reassemble as described above. Enjoy!



I hope this was useful. I enjoyed writing it.

Feel free to post links to this page if you are so inclined. If you have any questions, please don't hesitate to email me.

Version History

- 11/1/05 - First public version, some minor grammatical and spelling errors found and corrected (these are generally corrected without updating the version history).
- 11/2/05 - Changed the instructions for the amount of spring tensioning from four notches to six notches based on comments received and range testing this evening. Four notches provides sufficient tension to feed most cartridges, but feeding problems were experienced on the last round or two causing the cartridge to be crushed by the reciprocating bolt. Further tensioning the spring allowed the last cartridge to be fed properly.
- 5/6/06 - Added Google Ad at the bottom of the page (sorry folks, I have to pay for the bandwidth somehow. Hopefully this isn't intrusive.). Added exploded magazine diagram and changed some of the explanatory text to match with the exploded diagram. Widened the tables to allow for more comfortable reading and viewing.
- 3/1/07 - Changed the instructions on spring tensioning from six notches to eight notches to increase reliability. I've had some failures-to-feed from the magazines, and at least one person has contacted me to let me know that six is sometimes too little. Also, I finally got around to including the size of the hex wrench needed for disassembling the magazine (9/64th of an inch). Finally, I added a few lines about my new silencer in the introduction.
- 3/2/07 - Posted video instructions.
- 4/4/07 - Minor updates.
- 4/4/08 - Added blurb to announce my blog.

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