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This document is intended to illustrate the tools and techniques necessary to service the gas system on the M14-type rifle and its variants.



Below are some common tools necessary to properly disassemble, clean and maintain your M14-type rifle. Only a few of the tools shown are necessary for gas system maintenance.



They consist of:

1. Grease of choice. I prefer Lubriplate 130-A which can be purchased from Brownell's. Other popular greases are Plastilube, Tetra gun grease, TW-25b and even wheel bearing grease
2. A small artist's paint brush for application of grease (optional)
3. A Chamber maid flexible bore brush handle (optional). This item is not an absolute necessity but will make cleaning the chamber much easier than using a GI chamber brush and a patch. GG&G also makes their own version.
4. A GI multi-tool
5. A 3/8" boxed end wrench (optional)
6. A multi-bit handle (optional)
7. A cleaning rod bore-guide. I consider this a necessity to properly protect the barrel crown from damage during cleaning.
8. A chamber cleaning port (optional)
9. Multiple bits consisting of standard allen sizes and screwdriver tips for use with item number 6. (optional)
10. A cleaning rod section with a 45cal bore brush used to clean the flash suppressor (optional)
11. A gas cylinder/gas lock wrench. (can be substituted with Items 24 and 25) The one shown is a BAD-T4 tool that can be used with GI gas locks and Smith Enterprise gas locks which include

- dovetails for front sights or gas locks with permanently integrated front sights. Smith Enterprise and Sadlak also sell versions and there are also GI gas lock wrenches available.
12. A BAD-T1 tool (optional). This tool can be used to disassemble the M14 rifle and includes integrated gauges to measure muzzle wear, throat erosion and flash suppressor alignment. It also includes a storage pot for grease and can also be used with multi-bits (allen and screwdriver bits). It also has an adapter to measure throat erosion on M1 Garands. The tool is very expensive but is well worth the money if you are in the habit of measuring and monitoring throat erosion and muzzle wear as well as frequent self-gunsmithing.
 13. A #15 long drill bit with handle. This is needed to clean inside the gas piston tail.
 14. A letter "O" drill bit. This will be used to clean the inside of the gas plug.
 15. A letter "P" drill bit. This will be used to clean the large opening in the gas piston.
 16. A GI chamber brush. (Optional with suitable substitute)
 17. A .30 caliber bore brush with brass shank.
 18. A 45 caliber bore brush used to clean the chamber in place of a GI chamber brush (optional).
 19. A 45 caliber bore mop (optional). This will make thorough removal of solvents much easier and quicker.
 20. If using an eyelet attachment to clean the bore, use an eyelet with a 30 caliber cotton cleaning patch.
 21. If using a cleaning jag, use a jag with a 22 caliber cotton cleaning patch or a 30 caliber cotton cleaning patch cut in half.
 22. A nylon cleaning brush.
 23. A set of castle nut pliers. The ones shown are home made but others can be purchased on gunbroker or Brownell's.
 24. A large crescent wrench as a substitute for a gas lock wrench (item number 11).
 25. A strip of leather for use with item 24.
 26. Solvent of choice.
 27. Oil of choice.
 28. A one piece cleaning rod. It doesn't have to be an expensive cleaning rod. The expensive ones are nice but I used a \$12 coated cleaning rod and it worked fine. When using a jag to clean the barrel instead of an eyelet, it will take more effort to push it through the barrel and you may bend it. The expensive ones won't bend but as long as you are careful, a cheap one will do fine.

Cleaning the M14/M1A gas system

The gas system on your M14/M1A should be cleaned after roughly every 500 rounds or if you begin to experience cycling issues. If your rifle does not pass the “tilt test”, it may be time for a cleaning as well.

First, begin by making a witness mark on your gas plug and gas lock so that you can apply the same torque upon installation. Use a sharpie or white out. If you have a torque wrench to set the torque, don't bother with the witness mark.

Secure the gas cylinder with a gas cylinder wrench or a crescent wrench with a rag or a strap of leather around the jaws. Using a BAD-T1 tool, USGI multi-tool or a 3/8" boxed end wrench, loosen and remove the gas plug.



If you have the BAD-T4 gas cylinder wrench, ensure the threads are clean on your gas plug and screw it into the BAD-T4 wrench as pictured. This will give the plug a nice handle when cleaning and will also prevent it from rolling around on the bench.



Using a nylon brush and some powder solvent, clean the exterior of the gas piston and wipe it completely dry when done. I also used a bronze brush gently on the stubborn carbon build up areas and the carbon came right off without much fuss.

Once the exterior of the gas piston has been cleaned, insert it into the "D" cut of the BAD-T4, BAD-T1, Sadlak gas cylinder wrench or Smith Enterprise gas cylinder wrench. This creates a handle for the next step. Obviously, if you have neither, then don't worry. You can get by without it.



Next, clean the inside of the gas piston with a letter P and number 15 drill bits. You use the drill bits to scrape carbon from the inside walls of the piston. Lots of black dust will come out. This is normal.

Note: when performing all scraping, be careful not to remove metal from the gas system components! To avoid cutting into the metal, you can grind about 2/3rds of the cutting tips off your drill bits to prevent damage to your gas plug and piston. I then smooth the grinding with an Arkansas stone.



Now use the letter "O" drill bit on the gas plug and do the same...



Use a bronze brush with powder solvent to clean the inside of the gas piston and dry thoroughly with q-tips or cleaning patches. The inside should be clean and dry





Do the same with the gas cylinder and dry thoroughly. Insert the gas piston into the gas cylinder and lock the bolt to the rear and make sure the gas piston sinks down all the way...(this means the gas piston tail is lined up with the "D" cut in your gas cylinder) *(Note: all gas system components should be completely dry and free of oils and solvents upon re-assembly. Oil can be used in a pinch to get a seized gas system to work but it should be disassembled and re-cleaned during your next maintenance session)*



Ensure the threads of the gas plug are thoroughly cleaned and dry. Apply some anti-seize to the threads.



Using your gas cylinder wrench and tool of choice, torque the gas plug to match the witness mark you made before you disassembled the gas system. *If you are using a torque wrench, the minimum recommended torque is 120 inch pounds (10 foot pounds) and the maximum is approximately 23 foot pounds. The popular ranges are 120 inch pounds to 150 inch pounds. Gas plug torque may affect accuracy so play around with what torque works best in your rifle. German torque is also acceptable (Good-N-Tight).*



The gas components pictured have just under 700 rounds through them and they cleaned up very nicely. It was a USGI gas system with a Sadlak TiN gas piston (no groove). YMMV