



## Rifle Maintenance

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August 2022

This article has been written as there are many misconceptions and mistakes regarding cleaning and maintaining rifles, especially in the Guiding industry. Many of the teachers in this industry are not owners of personal rifles and only pass on what they have been told.

It is very clear that cleaning of any piece of equipment will have numerous “recommended” methods and especially “the very best” cleaning material.

This article is not to be an absolute but should direct you in maintaining what is now become a very expensive piece of equipment and should be seen as one that should last well past your lifetime if it is regularly and properly cared for.

The article is written to ensure that specifically bolt-action rifles are treated, cleaned, and maintained correctly especially in an environment where you or others’ lives could depend on the fact the rifle has been properly maintained and is in perfect working order.

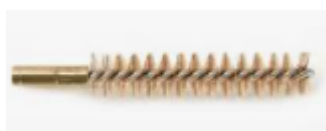
## Equipment

The following should be available before attempting any maintenance.

1. **Cleaning rod** – this is not a ramrod, which is used to load a muzzle loading firearm, and should be of a sturdy design and one piece. They are available for specific calibres and the latest ones for heavy calibres have a brown plastic covering. The yellow cleaning rods are useful up to .30 calibres.



2. **Phosphor bronze brush** – these are calibre specific and when dirty can be cleaned by washing in a solvent such as thinners.



3. **Jag** – these are calibre specific and are used to hold the 2x4 cloth. This must have the correct thread to screw onto the cleaning rod.



4. **Oil** – this should be a good quality thin oil specifically for metal surfaces.



5. **Solvent** – this should be specifically for removing or dissolving burnt powder residue. Trisol is often substituted but does not have the property to dissolve burnt powder residue and is simply a combination oil and agent. They are available in several different styles. (A new South African product that is purpose made for this job is KONTA KLEEN A41 gun treatment, distributed by Menter Agencies)



6. **2x4 cloths** – these come in rolls usually marked with red lines showing where they can be cut. About 4 or 5 should be used when doing a good clean and discarded once used.



7. **Screwdriver** – this should be of the correct size to correctly fit the action screws on the rifle. Good quality hollow-ground such

as the one shown below are expensive but worth the money as they contain a variety of bits.



8. **Scissors** – these are used to cut the cleaning cloths to the correct size according to the calibre being cleaned. It is discouraged to tear the cleaning cloths as threads will be created and can easily be lodged in the working parts of the rifle.



9. **Rifle rest** – these can be purchased or made, but whichever option is chosen they should be used when cleaning so that the rifle is held securely and is accessible so that cleaning can be done without the rifle falling.



10. **Damp cloth** – this should be slightly dampened with water and will be used to clean off excessive sweat and grime off the stock.

To ensure reliable functionality of your rifle it is imperative that it is maintained correctly. This section will concentrate on the specific maintenance, or cleaning of bolt action rifles after the following activities:

- After a walk and without being caught in rain, or dust storm. This will involve a Minor Clean.
- After shooting. This will involve a Comprehensive Clean.
- After a walk when caught in a rainstorm or dust storm. This will involve a Major Clean.

#### *Preparation before any cleaning*

- Store ALL ammunition in a safe. There should be no ammunition anywhere near the cleaning table!
- Hands should be washed prior to cleaning to remove any salt or sweat.
- Ensure the working surface is clean and free of any non-firearm objects.
- Locate all the cleaning components and assemble the rifle rest.
- Cut several 2x4 cleaning cloths according to the calibre being cleaned. It is possible to use up to 10 for a major clean, but generally about 5 or 6 are enough.
- Take the rifle from bag and immediately remove the bolt. This turns the rifle into a non-rifle and means that folk can walk around the muzzle without feeling the “rifle” is pointing at them.
- Place the non-rifle onto the rifle rest and ensure the bolt is placed near the rifle.

#### *Minor Clean*

- Use a damp cloth to wipe off sweat and dirt from the stock.
- Place a clean 2x4 onto the jag and screw the jag onto the cleaning rod.

- Push the cleaning rod with the jag from the action to muzzle to remove any dust. If the jag is too tight, do not force it, rather remove the 2x4 and cut it slightly smaller. This will be necessary when cleaning a .30 or smaller calibre rifle bore.
- A clean 2x4 should be coated with a few (3 or 4) drops of gun oil and rolled between the hands to distribute the oil.
- All external metal surfaces and the bolt should be wiped down.
- The magazine should be opened and wiped down with the oiled 2x4.
- The inside of the action should be wiped down with the oiled 2x4 by winding it around a finger so that it can be pushed through the receiver area.
- Wipe down the trigger, trigger guard and magazine plate.
- Using a screwdriver check that the action screws are tight with absolutely no movement whatsoever. If a torque wrench is available, it can be used to ensure the screws are tightened to a maximum of 35-foot pounds.
- Confirm that the serial number of the bolt matches the serial number of the rifle. The extractor may need to be rotated to see the serial number on the bolt.
- Replace the bolt and close it without holding the trigger and while pointing in a safe direction, ensure that the trigger works.
- Store the rifle in a safe while trying not to get hands on any of the metal surfaces.

### *Comprehensive Clean*

- Use a damp cloth to wipe of sweat and dirt from the stock.
- Place the phosphor bronze brush onto the cleaning rod and apply a few drops of solvent onto the brush.

- Push the cleaning rod from the action side through the barrel. This should be done twice at least.
- Allow about 5 to 10 minutes for the solvent to activate with any burnt powder residue.
- A clean 2x4 should be coated with a few (3 or 4) drops of gun oil and rolled between the hands to distribute the oil.
- Screw the jag onto the cleaning rod. Roll the oiled 2x4 onto the jag. Push the jag into the barrel from the chamber. If the jag is too tight, do not force it, rather remove the 2x4 and cut it slightly smaller. This will be necessary when cleaning a .30 or smaller calibre rifle bore.
- Push the cleaning rod with the jag vigorously backwards and forwards from the action to muzzle. It helps to have someone hold their thumb over the muzzle to stop the jag from going too far. If this happens, the jag will have to be unscrewed from the cleaning rod and reinserted again from the action side.
- If the 2x4 is too dirty, remove and replace with another lightly oiled cloth and repeat this process until the cloth comes out clean.
- Once the 2x4 is considered clean enough, use a clean 2x4 to push through the barrel as there should not be any oil inside the barrel.
- A clean 2x4 should be coated with a few (3 or 4) drops of gun oil and rolled between the hands to distribute the oil.
- All external metal surfaces and the bolt should be wiped down.
- The magazine should be opened and wiped down with the oiled 2x4. The magazine spring can be detached and wiped down.

- The inside of the action should be wiped down with the oiled 2x4 by winding it around a finger so that it can be pushed through the receiver area.
- Wipe down the trigger, trigger guard and magazine plate.
- Using a new lightly oiled 2x4 to wipe the crown of the muzzle. A degree of pressure should be applied when doing this to ensure that all burnt powder residue is removed from the crown.
- Confirm that the serial number of the bolt matches the serial number of the rifle. The extractor may need to be moved to see the serial number on the bolt.
- Using a screwdriver check that the action screws are tight with absolutely no movement whatsoever. If a torque wrench is available, it can be used to ensure the screws are tightened to a maximum of 35-foot pounds.
- Replace the bolt and close it without holding the trigger and while pointing in a safe direction, ensure that the trigger works.
- Store the rifle in a safe while trying not to get hands on any of the metal surfaces.

### *Major Clean*

All the actions of the Comprehensive clean should be done as well as the following.

- Turn the rifle upside down on the rifle rest.
- Unscrew all action screws. Most rifles have three action screws, but some Mauser-type rifles may only have two.
- Remove the action from the stock.
- Ensure that the spacers around the action screws are retained. These are sometimes loose and fall out of the stock as the action is removed from the stock.



- Lightly rub down all metal surfaces with a lightly oiled 2x4. If there is surface rust, this can be removed with fine wire wool soaked in oil.
- Ensure that the stock is dry, and that excessive dust, dirt, or water is completely removed from the stock before reassembly.
- When all the parts are thoroughly cleaned and lightly oiled, reverse the process and install the action back into the stock.
- Ensure that the spacers are correctly replaced before inserting the action screws. When three action screws are in place, they go from smallest to longest from the barrel back to the trigger guard.
- Action screws must be tightened with absolutely no movement whatsoever. If a torque wrench is available, it can be used to ensure the screws are tightened to a maximum of 35-foot pounds.

### Inspection

The following inspection should be carried out if you are issued a rifle that is not yours, however it is probably a good precaution to do this before going out on a walk to ensure the rifle is in working condition.

- Point rifle in a safe direction.
- Remove bolt.
- Check that the serial number on the bolt matches the rifle.

**DO NOT ACCEPT A RIFLE IF THE SERIAL NUMBERS DO NOT MATCH!**

Now start at the top and work down the rifle. This way it becomes easier to do this quite quickly but without missing any checks.

- Is the crown damaged?

- Is the front sight damaged, missing, or loose?
- Is the barrel damaged?
- Is the rear sight damaged, missing, or loose?
- Is the magazine spring working?
- Is the magazine spring attached correctly?
- Are there any cracks in the stock (around the action)?
- Is the recoil pad in good condition?
- Is the calibre correct for the ammunition that has been issued?
- Replace the bolt, cock the rifle, point in a safe direction, and dry fire the rifle. Does it work?

These checks will not rule out every possibility but should advise whether there is a problem so that you can take the necessary precautions to ensure you go out with a functional rifle.

If any of the issues are noticed to be faulty, DO NOT accept the rifle!