**Ruger 10/22 Maintenance and Customization Guide**

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Introduction

The Ruger 10/22 is a .22LR caliber, box-magazine fed, blowback action, semi-automatic rifle. It was first sold in 1964. The 10/22 is an excellent example of firearm design: easy to operate, quite accurate, reliable, light, inexpensive to build - and therefore to buy, and simple to maintain including disassembly and reassembly. It is no wonder that over five million of these rifles have been sold by Ruger as of 2013. Properly maintained, a 10/22 should last you many hundreds of thousands, if not millions, of rounds.

This guide provides step-by-step instructions for maintaining your 10/22. It also provides suggestions for several ways to customize the 10/22 to improve its performance and ergonomics. To see how creatively one can customize the 10/22, browse through the Ultimate 10/22 section of the rimfirecentral.com discussion forum on the Web.
Operating Tips

The 10/22 is simple to operate, but there are a few common things that shooters new to it should keep in mind:

- **Don’t be gentle inserting the magazine.** Insert it decisively, making sure it clicks into place. You can’t hurt it. If the mag is not fully inserted, the rounds will not feed.

- **The magazine faces down to remove it.** Don’t hold the rifle sideways or upside-down and try to pry the magazine out with fingers. Let it fall free, into your hand or onto the table. Gravity is your friend. If the magazine does not fall out freely, make sure it is clean and that there is nothing blocking the mag well. If the magazine continues to stick, you may need to widen the mag well slightly with some sandpaper.

- **To operate the OEM bolt lock, use the 4-step method.** The four steps are:
  1. Bolt Back: pull the bolt handle back with index finger or thumb.
  2. Bolt Forward: pull the bolt handle back, then release it to spring forward. Don’t “ride the bolt” forward, as this can cause misfeeds.
  3. Blade In: Press the bolt lock lever (a scalloped or triangular “blade” between the trigger guard and the magazine release) in towards the trigger guard.

  **To lock the bolt back: Do the steps in this order: 1-3-2-4.** After Step 3, holding the blade in, allow the bolt to creep forward. As you feel it catch on the raised bolt lock, release the blade.

  **To release the bolt: Do the steps in this order: 1-3-4-2.** When you release the blade with the bolt fully back, the bolt lock descends below the bolt, allowing the bolt to pass over it.

You can operate the bolt one-handed with the right hand if you hook your thumb over the bolt handle, allowing your fingers to curl under the trigger guard; you can then operate the blade with your middle or ring finger. If you have iron sights, you can even do it left-handed.

- **When shooting, hold the rifle firmly into the pocket between your shoulder and collarbone.** If you do not hold the buttstock solidly against your body, the rifle will move under recoil. This will cause inaccurate shots; it will also cause failures to eject as the fired case gets caught in the receiver instead of being thrown freely to the side.
### Typical Malfunctions

Most malfunctions are caused by a dirty rifle or by improper installation of parts. Following is a list of the typical malfunctions and their usual diagnoses:

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<th>Failure to Feed</th>
<th>Symptoms:</th>
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<td>- Round does not feed from magazine into chamber</td>
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<td>- Round may catch vertically in the magazine feed lips</td>
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<td>- Round may catch on the breech face</td>
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<td>- Bolt may not close more than halfway</td>
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**Causes and cures:**
- Magazine is not fully seated. Press it in until it clicks.
- Magazine is dirty. Clean it.
- Magazine spring has insufficient tension. Disassemble magazine and ensure the spring has 1 ½ turns of pre-tension during reassembly.
- Magazine sticks up too high, contacts bolt. Normally happens with non-Ruger magazines, or when resting the 25-round mag on the ground or bench while shooting which pushes the mag up into the well. Try different magazine and keep it up.

<table>
<thead>
<tr>
<th>Failure to Fire</th>
<th>Symptoms:</th>
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<td>Safety Notes</td>
<td>Misfire (dud): round does not fire at all.</td>
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<td>Hangfire: round fires after a delay due to slow primer or powder ignition</td>
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<td>Squib: round fires weakly, with an unusually quiet sound and little or no recoil. Caused by defective ammo with no or insufficient powder in the case. The bullet may be lodged in the barrel. DO NOT FIRE ANOTHER SHOT, make rifle safe and inspect the barrel. until the barrel is cleared. Firing a follow-up shot behind a squib can destroy the barrel or receiver and cause severe injuries to the shooter or bystanders.</td>
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**Causes and cures:**
- Duds most often are due to a void in the primer within the case rim. Rotate round so
that a new part of case rim faces up, and it should fire. If not, look for other causes.

- Bolt face and/or breech face is dirty, causing round to chamber incompletely. Firing pin energy wasted in driving round forward rather than crushing case rim.
- Firing pin obstructed by sludge in its channel. Disassemble and clean bolt assembly.
- If hammer strut spring was replaced with lighter spring, insufficient force on hammer. Replace with OEM hammer spring.
- Very dirty trigger group impeding hammer travel.

### Failure to Eject

**Symptoms:**

- **Stovepipe:** fired case caught between bolt and receiver, sticks sideways from ejection port.
- Fired case caught inside receiver, above new round

**Causes and cures:**

- Bolt is cycling too slowly, fired case hits bolt and is stuck inside rather than being thrown free.
- Action gummed up.
- Scope base mount screws too long, rubbing on top of bolt.
- Action not properly lubed.
- Magazine seated too high, catching on bolt or fired case catching on feed lips
- Hammer strut incorrectly installed.
Maintenance

Like any machine, the 10/22 requires regular maintenance in order to provide reliable, consistent service. Maintenance is comprised of three categories:

- **Cleaning:** The action is the most important part to clean. Most failures are caused by dirty bolts, receivers, and magazines. Because of the blow-back operation, burned gases, unburned powder, and bullet lube are forcefully sprayed into the action and magazine.

  The barrel is the least important. A .22 doesn’t make enough pressure or bullet velocity for barrel fouling to be much of a problem.

- **Lubrication:** There are only a couple of places that get a little dry lube. Many failures are due to too much oil, or oil in the wrong places, which turns into a sticky sludge after a short time of shooting. A dry Teflon-type lube that does not attract and hold dirt is recommended for the action. Some owners put a small dab of grease on the sear/hammer interface and the slot at the rear of the hammer, but these are the only places where grease should be used. It is better to run the rifle dry than to over-lube it.

- **Rust Protection:** Especially if you live in a humid or salty environment, certain parts need protection from rust. The bore, barrel, and charging handle are especially vulnerable.

Because the 10/22 is so simple to work on, you can complete a basic yet thorough cleaning in less than twenty minutes. A complete disassembly, cleaning and reassembly takes less than an hour. So there is no excuse for failures to feed, fire or eject due to a dirty rifle.

**How often should you clean?**

This can be a controversial subject, and people often hold strong opinions on it. A good answer depends on how you use your rifle. If you are a benchrest shooter going for .25” groups, it might be every 100 shots. Other competitive shooters might clean after each day. Some owners clean when their groups open up, or when the rifle begins to malfunction. Others follow the rule that “one does not go to bed with a dirty rifle.”

Visual inspection will also help you decide. Some brands of ammunition are dirtier than others, in both the powder soot and the lube on the bullets. If you see gunk in your action, you probably need to clean.

The answer also depends on what kind of cleaning you do. If you clean the bore, breech, bolt and action frequently with patches and solvent, you will not get the heavy fouling that requires a brush. The trigger group does not get very dirty and can easily go for several thousand shots between disassembly and cleaning.

I shoot my 10/22s about once a week. My preference is to clean the bore, breech, and bolt face after every shooting day – not only for cleanliness, but to renew the rust protection while the rifle sits in the
cabinet for up to a week or two at a time. Keeping these action parts clean ensures reliable feeding, ignition, and ejection and consistent point of impact. Once a month, the bolt is removed and the inside of the receiver cleaned and lubed. Two or three times per year I will disassemble the trigger group for a full cleaning and lube.

Magazines get dirty rather quickly. This make sense when you consider that the magazine is directly below where all the gas and unburned powder come out the breech after each shot. I number my magazines, and as soon as a particular mag gives one failure to feed, it gets set aside for a full cleaning.

Before you start

Tools Required: You don’t need any specialized tools to work on your rifle. You will need:

- Flat-blade screwdriver, 1/4 or 5/16 inch width. Ideally, a hollow-ground or parallel face gunsmith driver, but a normal one will do.
- A punch or drift to push the pins out, could be steel, brass or wood. Kebab sticks are often 1/8” diameter, just right for non-marring pushing of pins.
- Small hammer for the punch if the pins are sticky
- 5/32 inch hex key (Allen wrench) if you plan to remove the barrel
- 9/64 inch hex key for disassembling the magazine

Work area: Not required, but you would like to have:

- A well-lit bench or table, large enough for your rifle, with designated spaces to put tools and parts.
- A pad or towel to rest the rifle on (a light, solid color is best so it is easy to find small parts)
- Dish to hold small parts as they are removed

Cleaning Supplies:

- Boresnake, patch worm, or cleaning rod with a patch holder and brass brush and patches, sized for .22 caliber.
- Muzzle guard (bore guide) to protect the muzzle crown if you are using a cleaning rod from the muzzle end.
- Small brush, either brass or plastic (used toothbrush works fine).
- A few Q-Tips.
- A few clean rags.
- Gun cleaning solvent;
- Gun oil;
- Or, a combination solvent/oil such as Break-Free CLP or Ballistol.

Now you’re ready to begin working on your rifle.
Disassembly, Cleaning and Reassembly

If you are going to replace action parts, have your new parts ready on the work area to substitute for the OEM parts during reassembly.

As a general rule, pins are driven out from the left side to the right, and inserted from right to left.

Task 1: Ensuring Safety

The first thing you do when picking up your 10/22, and every time you pick up or are handed a firearm, is clear it and ensure it is in safe condition.

1. KEEPING THE MUZZLE IN A SAFE DIRECTION, push the safety to SAFE. If it does not go all the way to the right, do the next two steps and then repeat this one.
2. Remove the magazine, if there is one in the well.
3. Lock the bolt back.
4. Check the chamber to ensure there is no round in it.
5. Make sure there are no loaded magazines or loose ammunition anywhere near your work area.
6. If you are transporting the rifle away from your bench, or are not working on the action, insert a chamber flag. This allows you and others nearby to quickly recognize that the rifle is in a safe condition, and prevents anyone from accidentally inserting a round. The post of the chamber flag should go into the chamber, not merely lie in the receiver. Keep your chamber flag clean so it does not pick up dirt that would scratch the chamber.

Task 2: Removing the Stock

1. If your rifle has a barrel band, loosen its screw so it is quite loose, then slide it forward off the stock and over the muzzle. If you do not sufficiently loosen the barrel band it may scratch the stock as you slide it forward.
2. On the underside of the rifle, just in front of the magazine well, is a 5/16” flat-slotted screw. 2013 and newer 10/22s have a hex-head screw. Loosen this screw until it is free of the receiver. The screw is captured in the stock, so you don’t have to remove it completely unless you want to add some Loc-Tite to the threads.
3. Release the bolt, set the safety to Fire, then pull the trigger to de-cock the hammer.
4. Push the safety in to the right – it will only go halfway. Holding the safety in this centered position, lift the barreled receiver away from the stock. If the safety is all the way left or right it will hang up on the side of the stock and prevent removal, and possibly scratch the stock.
5. Lay the stock safely to the side of your work area. Do not stand it up – chances are it will fall and get scratched.
Task 3: Remove the Trigger Group

1. Cycle the bolt to cock the hammer and set the safety to SAFE. If the hammer is forward (in the fired position), its pressure on the bolt will make it hard to remove the pins in Step 2.
2. Working from the left side of the receiver, push out the two receiver cross pins and set them aside. The pins are easier to push out if you do the front one first.
3. Pull the trigger group down out of the receiver. Set it aside.

Task 4: Remove the Bolt

1. With a punch, push the bolt stop pin, from left to right, out of the receiver.
2. Turn the receiver upside-down. Pull the bolt handle all the way to the rear.
3. Life the bolt out of the receiver. On some newer rifles, the bolt may hang up on a burr at the corner of the bolt guide shelf (a ledge cast into the receiver, see Photo 4.2). If this happens, turn the receiver over and tap it gently against the top of your bench. This will allow the back of the bolt to fall free and the front will follow. Later, you can file the burr from the bolt guide shelf to solve this problem.
4. Pull the bolt handle/guide rod assembly out through the ejection port.
Task 5: Cleaning the Receiver and Barrel

1. If necessary, clean the bore with your boresnake, patch worm, or cleaning rod and patches, and your favorite solvent. If the barrel and chamber are heavily fouled, use the brass brush with solvent. Be sure to push the brush all the way through – do not reverse brush direction while it is still in the barrel.

**TIP:** If you use a cleaning rod from the muzzle, you must use a muzzle guard to protect the muzzle crown from scratching. Scratching the crown can ruin the accuracy of the rifle.

2. Use your brush and solvent to clean the breech face (end of the barrel facing the bolt). Be sure to clean the extractor channel on the right side of the breech.
3. Use your brush or rags, Q-Tips and solvent to clean the inside of the receiver.
4. Dry the breech and receiver with a clean rag.
5. Oil the bore lightly to prevent corrosion.
6. If you desire, put a thin coat of dry lube on the inside of the receiver; do not forget the bolt guide shelf above the ejection port. Allow this lube to dry before re-assembly.
**Task 6: Disassemble, Clean and Lube the Trigger Group**

Photo 6.1: Trigger group before disassembly.
Numbered pins are:
1: Mag release/bolt lock pin
2: Ejector pin
3: Hammer pivot pin
4: Trigger pivot pin

1. Turn the trigger group so the left side faces up. Note that the hammer pivot pin is larger (.154") than the other three pins (.122").
2. If the hammer is uncocked (up and facing forward), push it back to the cocked position and set the safety to SAFE. This will give you room to work in the front of the housing while preventing the hammer from springing forward if you should accidentally brush the trigger.
3. Locate the magazine latch/bolt lock pivot pin at the lower left of the housing (pin 1 in photo), just above the bolt lock lever. With a punch, push the pin out.
4. Push the magazine catch all the way in, and pull the magazine release straight down to remove it. Gently allow the magazine catch to move forward and remove it.
5. Locate the bolt lock/ejector pin near the top of the housing (Pin 2 in photo). Use your punch to push the pin out. This will also release the tension from the bolt lock spring. Remove the bolt lock and ejector.

Photo 6.2: Ejector (top), ejector pin, and bolt lock (bottom). Note the rounded hole at the right of the bolt lock, which makes it an auto bolt release.

6. Set the safety to FIRE. Put your thumb or fingers over the hammer to cushion its movement, and pull the trigger to decock the hammer. Allow the hammer gently to fall forward until the hammer strut falls free of its slot in the back of the hammer. Remove
the hammer strut; if may fall out if you turn the housing over, or you may have to push
it from the hole at the rear of the housing with your punch.

7. Locate the hammer pivot pin at the center of the housing (Pin 3 in photo 6.1). Push this
pin out. Turn the housing over and allow the hammer and bolt lock spring to fall out. If
you have an older 10/22, the hammer bushings are cast into the hammer; on newer
models, the polymer bushings are separate from the hammer.

8. Locate the trigger pivot pin (Pin 4 in photo 6.1). Push it out slightly to the right. TIP: Put
your left hand over the trigger guard to catch any small parts or springs, and with your
right hand pull the pin the rest of the way out. The sear and sear spring are likely to pop
out into your left hand. Pull the trigger/disconnector assembly out of the top of the
housing, being careful not to allow the disconnector pin to fall out.

9. Remove the trigger return plunger and its spring from the rear of the trigger guard.

10. With Q-Tips and solvent, clean the inside of the trigger housing, including the hole for
the magazine catch. Then dry it.

11. With a rag and solvent, clean the trigger group parts thoroughly, then dry them.

12. If you desire, put a very small dab of grease or dry lube on the hammer sear surface and
the lower part of the slot where the hammer strut rides in the hammer

**Task 7: Re-Assemble the Trigger Group**

**Part 7A: Trigger/Sear Assembly:**

1. Gather the trigger return plunger and spring, trigger, disconnector, disconnector pivot
pin, sear, and sear spring. (Photo 7.1)

2. Insert the trigger return plunger and spring into the hole at the back of the trigger
guard.

3. Insert the disconnector into the top of the trigger, line up the holes, and insert the pin. If
the pin is a loose fit and falls out easily, you can hold it in place with some masking tape
on each side.
4. Insert the sear spring into its hole in the sear. Place the sear in position under the disconnector, and insert the other end of the spring into the hole in the disconnector. Press the disconnector down onto the sear and release it slowly; this should hold the sear and disconnector together. If it does not, you can use a short “cheater pin” to hold them together while you work.

5. Hold the trigger group housing vertically. Remove any masking tape and lower the trigger assembly into the housing. Once it is inside the housing the sides of the housing will prevent the disconnector pin from falling out. Line up the holes for the trigger pivot pin and insert the pin.

**Part 7B: Hammer Assembly**

![Photo 7.2 showing parts of hammer assembly in relative positions](image)

1. Gather the hammer, bushings, bolt lock spring, hammer strut, and hammer pivot pin. (Photo 7.2)
2. Insert the bushings into the hammer, if needed. Place the bolt lock spring on the right side of the hammer so that the hammer is in the middle of the V with the dogleg arm facing forward.
3. Insert the hammer assembly into the housing, line up the holes, and insert the hammer pivot pin. You may have to set the safety to FIRE and pull the trigger slightly to line up the holes.
4. Set the safety to FIRE. Pull the hammer forward to make room for inserting the hammer strut. Place the hammer strut, with the open part of the C-clip facing upward, into its hole at the rear of the housing and press it in place.
5. Pull the hammer up and back and insert the end of the strut into its slot in the rear of the hammer. Press the hammer all the way back until it cocks.
6. With your left-hand fingers over the hammer, press the trigger to test the function of the trigger and hammer assemblies.
Part 7C: Bolt Lock and Ejector
1. Gather the bolt lock, ejector, and bolt lock/ejector pin.
2. Pull the bolt lock spring back and insert the bolt lock into the housing; the main part of the bolt lock goes flush against the left side of the housing. Push the spring down; the dogleg should go into its slot in the right side of the bolt lock.
3. Press the straight arm of the spring forward and down below the pin hole on the right side of the housing. Insert the pin part way to capture the spring.
4. Place the ejector over the pin, with the point of the ejector at the top, facing forward. Push the pin all the way in. Place the ejector in its slot at the front of the housing.

Part 7.D: Magazine Catch and Release
1. Gather the magazine catch, mag catch spring, magazine release, and mag release/bolt lock pivot pin. (Photo 7.D)
2. Place the mag catch spring over the shank of the mag catch. Insert the mag catch into its hole at the front of the housing.
3. Press the mag catch all the way in. Insert the mag release into the bottom of the housing so that the vertical part goes to the right of the mag catch and above the shank. Release the mag catch. The mag release should now be captured in place by the mag catch.
4. Line up the holes and insert the pivot pin from the right side. You may have to insert the pin part way, keep light pressure on it, and then wiggle the mag release to clear its hole, and then wiggle the bolt lock to align it and fully insert the pin.
5. Test the mag release and the bolt lock to ensure they function correctly.

Task 8: Re-Assemble the Action
1. Turn the receiver upside down. Insert the bolt guide rod in through the ejection port and place its point into the anchor well in the receiver.

Photo 8.1 showing guide rod placed in anchor well inside receiver.

2. Put a finger in front of the bolt handle inside the receiver and pull the bolt handle all the way back. If it binds, push slightly forward on the outside part of the bolt handle with your other hand to straighten it on the guide rod.
3. Holding the bolt handle in place, drop the bolt in. Put slight downward pressure on the bolt and ease the bolt handle forward a fraction of an inch. You will hear and feel the bolt handle snap into its groove in the bolt. Ease the bolt handle the rest of the way forward.

![Photo 8.2 showing how bolt handle fits into slot in bolt.](image)

4. Install the bolt stop pin. **TIP:** If you are using a polymer bolt buffer, it goes in easier with a little lube at the end and a twisting motion as you push it. You may also need to align the end with a finger from inside the receiver to get it into the second hole.
5. Pull and release the bolt handle to test the function of the bolt assembly.
6. With the hammer cocked and the safety on SAFE, insert the trigger group into the receiver. Insert the receiver cross pins.
7. Work the bolt and dry-fire to test the function of the completed action.

### Task 9: Install the Stock and Protect from Rust

1. Wipe down the barrel with a lightly oiled rag to prevent rust. (Gun oil, or your favorite rust preventative)
2. Decock the hammer and put the safety in the halfway position.
3. Insert the barreled action into the stock.
4. If you desire, remove the action screw and put a little blue Loc-Tite on the threads. Tighten the action screw so it is snug. I prefer to use Loc-Tite than risk overtightening the screw.
5. Wipe down the barrel where you touched it, and the bolt handle, with a lightly oiled rag to keep them from rusting.
Task 10: Cleaning the Magazine

Disassembly and Cleaning

1. Clean the outside of the magazine, including the magazine throat, with a rag and some solvent.
2. With your hand over the cap nut at the other end of the mag, use a 9/64 hex wrench to loosen the screw. Once the screw is loose, push the screw in; the cap nut should press out of the magazine cap.
3. Remove the cap nut and the screw.
4. Remove the magazine cap.
5. Remove the magazine rotor and spring as an assembly; they should stay together and do not need to come apart.
6. If the magazine throat does not pop off during steps 4 or 5, remove it now. Note that it has a large nub on one end and a small nub on the other, and which end of the magazine each fits into.
7. With a rag or Q-Tip damp with solvent, clean out the magazine shell, the magazine cap, and the surfaces of the magazine rotor. The inside of the rotor, where the spring is, does not get dirty.
8. Dry all the parts you cleaned. No oil is needed in the magazine. Oil will just attract gunk to create sludge.

Reassembly of the Magazine

Photo 10.1 showing rotor position and mag throat inserted after Step 3
1. Insert the screw into the mag shell.
2. Insert the rotor with the long vane facing the top edge of the magazine shell, at the 1 o’clock position. See Photo 10.1.
3. Insert the mag throat.
4. Insert the mag cap.
5. Inspect the mag cap nut. Note that there is a hole in its shank. Insert the mag cap nut inside the spring, so that the pointed end of the mag spring seats into this hole.
6. Hold the mag in one hand with the screw head towards the palm. With your other hand, grasp the cap nut between two fingers and turn it 1.5 turns, then press it into the hexagonal hole in the mag cap. This preloads the spring so that rounds will feed properly. The spring tension should hold the cap nut in place now but press a finger over it to be sure.
7. Tighten the screw so that it is snug, but do not overtighten.

YOU ARE NOW DONE. ENJOY SHOOTING YOUR CLEAN, RELIABLE 10/22.
Customization

The 10/22 can be customized easily to optimize it for nearly any application, or to give it nearly any appearance. It is possible to make a 10/22 out of aftermarket parts such that the only part made by Ruger is the magazine. This guide will cover only the most popular functional modifications that owners typically make.

There are many makers of aftermarket customization parts for the 10/22. The guide below mentions only a few of the most popular ones. You can see a wider range of suppliers in the Sponsors Area of rimfirecentral.com.

| Sights | The OEM blade sight system can be hard to use in low light and for those with aging eyes. Replacing it with a red dot sight, scope, or aperture sights is an easy solution. The most popular aperture sights are made by Tech-Sights, Nodak Spud, and Williams. If you install a scope, make sure to get scope mounts that place the scope far enough forward to give you proper eye relief for the scope. For most scopes, you want the back of the scope to be no farther back than the rear edge of the receiver. You may need to install a rail that extends out over the barrel to get the scope far enough forward. You also need scope rings that are high enough for the objective lens to avoid contacting the barrel. |
| Stock | The OEM stock, or an aftermarket stocks with the same buttstock profile, is designed to give you a good cheek weld using the OEM sights. If you install a scope or aperture sights, you will probably find the comb of the stock is now too low by .5 – 1.5 inch. You can replace the stock with a raised comb type ($80-$200+), or add a comb riser such as the Accu-Riser ($35). Or at no cost you can used to having a “jaw weld” rather than a cheek weld. |
| Magazine release | The flat OEM mag release has to be pressed upwards into the stock to operate, which requires gripping your hand over the stock. There are many different models of extended mag release that you can push forward with a finger. These are much quicker and ergonomically efficient. |
| Auto Bolt release | The OEM bolt release requires manipulating the lever for both locking and releasing the bolt – a two-finger, if not two-hand, operation as described on Page 2. With an auto bolt release, you can release the bolt simply by pulling it back and releasing it to spring forward, without pressing the blade. You can buy an aftermarket auto bolt release, or you can make your own by filing out the heart-shaped hole in the OEM bolt lock to a rounded profile. There are a number of Youtube videos that show how to do this yourself. |
| Enhanced Triggers | The OEM trigger is notoriously heavy and creepy. I have seen pull weights from 5 – 10 pounds. There is a wide range of aftermarket solutions. |
| **Accurizing the barrel and bolt** | You can spend $200 or more on a complete trigger group. Or for about $100, you can get a replacement hammer, sear, and spring kit. For about $50 you can get a replacement hammer and spring kit. Installing an enhanced trigger can give you a crisp, light trigger pull of 1.5 - 3.5 pounds. The most popular makers of trigger components are Kidd, Rimfire Technologies, and Volquartsen.

You can also have your OEM trigger group modified by a gunsmith (a “trigger job”), or if you are experienced and knowledgeable at gunsmithing, can do it yourself (but then you wouldn’t be reading this guide). Brimstone Gunsmithing (brimstonegunsmithing.squarespace.com) is a nationally well-known specialist in 10/22 trigger jobs.

Some owners install thin shims between the rotating trigger and hammer parts. These eliminate any sideways motion of the parts, and act as bushings to smooth the rotation of the trigger, disconnector and hammer around their pivot pins.

Finally, you can upgrade from the OEM plastic trigger to a metal (aluminum or titanium) trigger; several different profiles are available, and many different colors. Some aftermarket triggers also have adjustable overtravel stops to limit rearward movement after the shot fires.|
| **Bolt Guide and Handle** | Ruger barrels are very well made and quite accurate. However, the chambers are typically rather loose to ensure reliability with a wide range of ammunition. A more precise fit of the round in a “match” chamber can improve accuracy and consistency. There are many makers of replacement barrels with match-grade chambers; the most popular include Feddersen, Green Mountain, Kidd, Shilen, Tactical Solutions, and Volquartsen.

The Ruger OEM bolt is also known for being a loose fit in the receiver and has many machining marks both on the top where it slides against the top of the receiver, and on the face where it seals against the breech face of the barrel. To smooth operation, you can polish the sliding surfaces of your bolt yourself but this does not improve the headspacing or sealing against the breech. Kidd and Volquartsen make replacement bolts that are manufactured to high-precision tolerances and very well finished.

Less expensive (by about half) than buying a new barrel or bolt is to have your OEM parts modified by a gunsmith. Well-known specialists in this kind of work include Que’s Bolt and Barrel Rework (https://sites.google.com/site/quesplace/) and CPC (www.ct-precision.com) |

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**Action Polishing**

For safety reasons we will not cover sear/hammer modifications here. But you can lighten your trigger pull and improve the function of your 10/22 by polishing and removing sharp edges and burrs from certain parts. Keep in mind that you don’t want to remove too much material from these parts – you only want to make them smooth.

**Hammer Strut:** The hammer strut is a stamped part. One side of it has a rounded edge, and the other is sharp. Smooth the sharp edge of the round end (which rides in the hammer slot) so that it does not catch on the hammer.

**Hammer Surface:** The forward surface of the hammer may also be rough finished. Polishing this will improve contact with the firing pin and also help the bolt glide over the hammer.

**Bolt:** The top of the bolt slides against the receiver, and the bottom rear of the bolt slides over the hammer. These are both typically rather rough with many tool marks from machining. Polishing these surfaces to a mirror finish will reduce friction.

**Radius the bolt:** The bottom rear edge of the bolt is rather square with a small radius. This section contacts the hammer to cock it as it slides rearward. By sanding this edge to a larger radius (making it more round) the bolt will glide more easily over the hammer. This improves bolt function while shooting and also makes it easier to work the bolt by hand. There are Youtube videos

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**Sling**

A sling is not only a handy way to carry your rifle, but is a highly effective shooting aid that helps you hold the rifle steady in any position. It is essential if you want to compete in position shooting (Appleseed, CMP 3-Position or NRA position events). The most effective slings for this purpose are the GI web sling (1.25” width, made of cotton canvas, about $15) and the 1907 type (leather) sling ($50-60).

If you buy a GI sling, avoid the narrow, slick nylon slings, which tend to slip down your arm while shooting. The 1.25” width, 1907 leather sling used in high-power rifle competition can visually overwhelm the 10/22 stock, but Boyt Harness makes a nice one in 1” width that looks great on a 10/22. If you buy a leather sling, make sure it is real leather and not “bonded leather”, which is the leather equivalent of chipboard. Another excellent sling is the Riflecraft, which works similarly to the 1907 sling but is made of a coarse-woven nylon canvas that holds very well.

If your 10/22 did not come with swing swivel studs (or the built-in swivel on the Mannlicher stock) you will need to install studs and purchase swivels to attach the sling. This involves drilling into the stock which must be done with great care.
Resources for 10/22 Owners

This list below is not meant to be a complete roster of all available resources, and reflects the personal judgments of the author.

Parts and Accessories Suppliers

shopruger.com: Ruger factory website for OEM parts and accessories.

Brownells.com: Online dealer of OEM parts, upgrade parts, and accessories from a number of manufacturers. Known for large selection and outstanding service.

Rimfiresports.com: Virginia-based online dealer of upgrade parts and accessories for all kinds of rimfire firearms. They have all-metal dummy rounds that are the best snap caps I have seen for ball-and-dummy training.

Coolguyguns.com: Website of Tony Kidd, maker of very high quality upgrade parts for 10/22s including barrels, actions, receivers and small parts.

Tech-Sights.com: maker of Tech-Sights, the most popular peep sight upgrade for 10/22s, also sells good web slings.

Nodakspud.com: maker of the Nodak sight system, another popular peep sight for the 10/22. Also makes upgraded receivers.

Boytharness.com: makes a fine 1.00” width 1907-type leather sling that fits well on the 10/22. Some 10/22s such as the Deluxe Sporter and Mannlicher come with 1” swivels pre-installed, but this is the only high-quality leather sling I have seen in this width. Opticsplanet.com sells it at a discount price.

Volquartsen.com: probably the largest maker of upgrade parts including everything except magazines.

Internet Discussion Forums

Rimfirecentral.com: the most comprehensive site for discussion of gear - especially 10/22s – customization and maintenance how-to, competitions, anything involving rimfire rifles and pistols. Conducts on-line matches in a variety of disciplines. Best of all, no off-topic or political discussions allowed. This is where the experts hang out.

Rugerforum.net: A good forum for all things Ruger.