



Mauser 45acp/7.6*39 Conversion Kits

By Rhineland Arms

Spanish 1916 owners-please see special notes



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The Mauser 45acp Conversion By Rhineland Arms Inc.

The Mauser 45acp is a fun and quiet rifle to shoot which retains enough power and accuracy for small game and target shooting. The conversion is rapidly becoming a favorite of all those who shoot it and it is sure to be a favorite at your local gun range.

The conversion is very easy to do with a minimal number of tools and skills. Included in this booklet are the steps needed to build a Mauser 45acp:

1. Read all warnings before beginning
2. Install barrel and headspace.
3. Test fit the adapter, bolt and receiver. Make any needed changes to receiver.
4. Install the adapter and ejector.
5. Test the design for safety and make any needed corrections.
6. Ready for use.

Additional tools needed for the Mauser and kit may be needed. Below is a list with part numbers of additional tools available from FAC.

<i>ITEM</i>	<i>Part number</i>
Mauser receiver wrench	808771
Mauser barrel vise	465185
Spanner wrench for barrel lock nut	CS1545

Step 1: GUNSMITH SAFETY

Before proceeding read all safety rules and warnings.

1. Do not work on any firearm that does not have a safety, unless a new one is to be installed.
2. Before working on a Mauser, or purchasing one. Make 100% certain that the cocking piece and sear are correct; in serviceable condition and that the parts interact correctly and safely.
3. Always record the changes you have done to the rifle or any parts used on it.
4. Do not attempt to use or work on a rifle that is not in good working order.
5. Remember a firearm is always loaded.
6. Never point a firearm at anything but a target.
7. Always check for yourself to make sure a firearm is unloaded.
8. Always check the barrel for obstructions and bulges.
9. Always wear safety glasses
10. Wear hearing protection when shooting.
11. Always heed all warnings when using chemicals.

Do not allow live ammunition in the work area

Step 2: Installing the Barrel

This is very easy to do, just follow the step-by-step procedures:

1. Insert a dummy round into the chamber of the barrel
2. Remove the extractor from the bolt
3. Insert bolt into receiver and close it all the way
4. Screw barrel in all the way, until it comes to a stop.
5. Cycle the bolt to make sure the dummy round is seated in bolt face properly and that the bolt will close all the way.
6. Re-check the barrel to make sure it is in tight; now back out 1/8 - 1/4 turn.
7. Remove dummy round
8. Insert a NO-GO gauge into the chamber and try to close the bolt.
 - a. If the bolt does not close, then the rifle is head-spaced, proceed to next step.
 - b. If bolt does close, rifle is not head-spaced—See **Trouble Shooting**
9. Use the locking ring to secure the barrel, use a small drop of blue LOCK-TIGHT on the threads and use a spanner wrench to finish tightening the locking ring. Spanner wrenches are available from FAC. If the slot ends up where it is visible you can remove the ring and sand the back side of it some, this will cause it to rotate, keep trying this until it ends up on the bottom side of the barrel where it is not seen.
10. If you are not using the original military sights you are finished.

*If you are using the military sights, then follow the steps below.

Test the location and tightness of the rear sight. If it is too loose, then use very low temperature solder to tighten it and use the setscrew to secure it.

-Use the same method for the front sight.

WARNING ON BARRELS

If you have any question about the head-spacing, please contact Rhineland Arms or visit a professional gunsmith, this is an easy operation for them.

STEP 3: Test fitting

Receiver rails

The receiver magazine feed rails are a little too wide on some receivers, see diagram. You can easily tell if you need to modify yours by taking a 45acp dummy round and checking to see if it will pass from the magazine area to the bolt area of the receiver without rubbing the sides of the receiver. If it does rub against the receiver, then use a file or Dremmel to file about 1-2 millimeters from both sides of the rails. Most receivers will need a little bit of work.

Firing Pin Modifications

The firing pin may be a little long, Check the primers of the first rounds that you fire. If the firing pin hole is too deep and or the primer is flattening out, then you should reduce the length of the firing pin. It can be reduced to .020 past the bolt face and still work. This can be done by grinding the firing pin head back and then rounding the edges. Be careful to not get it too hot as this is a heat treated part.

STEP 4: Installation of the Adapter

1. Test fit the adapter into the magazine well.
 - a. Some mag wells may be a little tight, but will clean up easily with a file.
2. Use a marker to identify the areas on the mag well that will need to be removed for the magazine catch to work.
 - a. Install the magazine catch assembly into the adapter.
 - b. Cut the area marked with a Dremmel and test fit the adapter to make sure it works. Clean up the Dremmel cuts with a file or sand paper.
3. Insert the adapter in the mag well, then with a block of wood on both the top and bottom of the assembly, use a C-clamp to clamp the adapter and mag well together. There should be no gap between the sides of the adapter and the trigger guard.
4. Using a drill and good 1/8" drill bit, drill one hole and then install a tension pin. Now repeat that 2 more times. Make sure the C-clamp does not come loose. Use WD40 on the drill bit for easier cutting.
5. Modify the magazines by using some needle-nose pliers and bend the tip of the magazine follower down so that it will not catch on the bolt vent holes. Install the trigger guard and insert a magazine. Now test a couple dummy rounds to see if they cycle. **NOTE:** this is only needed on some magazines. Chip McCormick brand magazines are ready to use.

Modify the Extractor

This step that can help with the feeding of the rounds, as well as the extraction. *Only do this if you are having problems with feeding.*

1. Remove the extractor by lifting up on the front of the extractor and pushing it towards the front. Installation is the same.
2. Grind the lower half of the extractor face so it is rounded.
3. Bevel the underside so that the 45acp cartridges can slide into the bolt face easier.
4. Smooth the front of the extractor using fine grade sandpaper or a file. This will help with any problems of it rubbing against the barrel.
5. Reinstall and test.
6. You may need to repeat this procedure.

Installing the new ejector

Simply remove the ejector box and pull out the old ejector. Now, reinstall the new ejector and reinstall the ejector box. Next, check the ejector slot on the bolt. Most will have a slight protrusion in the slot, towards the side. This needs to be removed, use a Dremmel. Now test to make sure the bolt easily slides back and forth. The rifle should now be capable of normally ejecting empty cases.

STEP 5: Testing

At this point, the rifle should be built up and the action properly installed in the stock. Now you want to make sure that the conversion works safely. The first item to test is the feeding and extraction. Insert a dummy round into the magazine and insert magazine into the mag well. Test to see if the round will feed and extract easily. If it does, then it is time to test the firing pin protrusion. Using a brass case with a live primer only (no bullet or primer) insert it into the chamber and pointing the barrel at a safe target, fire. Extract the case and inspect the primer. The firing pin should not have penetrated the metal primer and it is safe to proceed. Now re-inspect the bore to make sure it is clean and unobstructed. Using a live round and aiming at a safe target fire the round and again inspect the primer and case for any deformations. If the case and primer appear normal, the rifle is ready for use. If you experience any problems during any of the testing, stop work and contact Rhineland Arms or a professional gunsmith.

Trouble Shooting

Here are some tips for problems you may run into.

1. Rounds don't want to feed correctly.
 - a. Has the extractor been modified?
 - i. If not, do so.
 - ii. If yes, try the next step.
 - b. Check forward trigger guard screw.
 - i. The forward trigger guard screw can easily be overtightened, causing the bolt and round to bind against the magazine. Usually you can back the screw out a ¼ turn to solve the problem.
2. Rounds feed good, but the bolt will not close.
 - a. Check the headspace, See **Headspace page** if you are not familiar with this.
 - i. If it is, good proceed.
 - ii. If it is not good, re-headspace.
 - b. Check to see if the bolt will close with the extractor removed.
 - i. If it does, then your barrel is set too far back (most likely). Remove the barrel and remove some material from the rear of the barrel, usually less than 1mm will do. Re-install the barrel and re-headspace.
3. Rounds do not extract.
 - i. Check to see if the headspace is too great. If chamber is too far forward, this will cause extraction problems.

Extractor may be worn out; this can be checked by removing bolt and inserting a dummy round into bolt face. You should be able to wiggle the bolt around just a little bit without the dummy round coming out. If the dummy round will not stay in, then get a new extractor.

Headspace

Headspace---This is the relationship of the cartridge between the bolt face and the inside shoulder of the chamber of the barrel. In other words, the distance between the closed bolt face and the end of the chamber. If it is too short, it will crush the rounds or not allow the bolt to close. If too great, then the firing pin may not hit the primer, or the round will not get under the extractor claw and fail to extract. Accuracy will fail also.

How to Headspace

This is only a basic overview of how to use the Rhineland Arms type Mauser barrels. It is best to use both a GO and a NO-GO gauge, obtainable from Brownells. Follow the steps below.

1. Remove extractor from bolt
2. Insert Go gauge into the chamber and close the bolt.
 - a. If it closes, proceed to the next step.
 - b. If it does not close, then your chamber is too far back, the chamber needs to be reamed deeper or in the case of our barrels, just back it out some.
3. Insert the NO-GO gauge and try to close the bolt.
 - a. If it does close, then the chamber is too deep. Screw the barrel in more and if that is not enough, then remove material from the back of the barrel and then screw the barrel in more.
 - b. If the bolt does not close, then you are head spaced properly.

Supplement

This is a set of instructions to fix the problem of the bolt hitting the magazine adapter, this seems to be a problem in 1 out of 5 rifles. Variation to materials/procedures is ok. Insert 2 shims on the trigger guard slot in the stock. 1 each near the screw holes, the thickness is around .080 and can be metal or wood shims. Once they are installed install the trigger guard and tighten the screws as tight as you can get them. After this has been done, test the action with dummy rounds. You want to make sure the rounds cycle into the chamber easily. If the rounds nose dive into the feed ramp, make the rear spacer a little thicker. Once the rifle is working the way you want it, use epoxy to secure the spacers.



How the ejector should look when installed correctly

Special notes

Spanish 1916 Mausers- Please note that these can be used but the bottom of the bolt will have to be modified to a round shape. This will remove the bolts surface heat treat and it will not be suitable for high power cartridges again. Most Spanish 1916 Mausers have soft receivers and should not be used for high power.

Parts list, Mauser 45acp conversion kit



Mag Adapter



Adapter Pins



Ejector



Lock Ring



Barrel

Parts needed, not included.

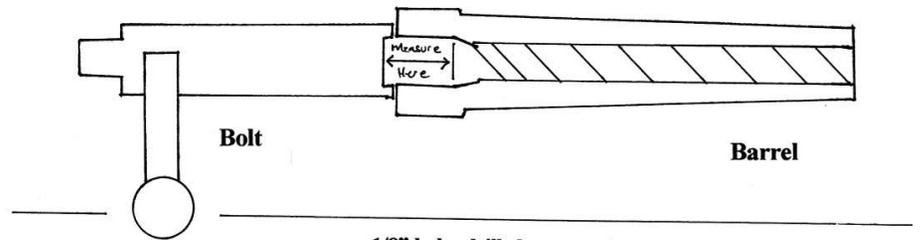
Magazine catch assembly from a 1911 style pistol. The use of Chip McCormick Brand is recommended.



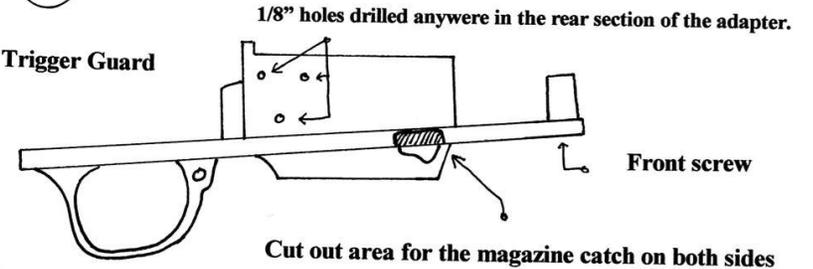
Mag catch Mag catch spring Mag catch Pin

To install the mag catch assembly, simply insert the pin inside the spring, then insert that into the magazine catch. Now with a small screw driver, turn push the pin into the catch all the way and rotate the head until the pin is locked to the rear position. Now insert the mag catch assembly into the magazine adapter all the way and then with the screw driver turn the pin clock wise until the mag catch is locked up. Now with a magazine test to see if it can be inserted and it will lock in correctly.

Head spacing Diagram



Trigger Guard



Extractor front view



unmodified

Modified

