



**McMILLAN®**

**OWNER'S MANUAL**



**MCMILLAN® TAC-50  
MCMILLAN® TAC-50 A1™  
MCMILLAN® TAC-50 A1-R2™**

**S H O O T   T O   W I N®**



Congratulations. You are now the owner of the finest firearm that technology, craftsmanship and art can build. Please take a few minutes and get acquainted with the proper operation of your new firearm.

  
**McMILLAN<sup>®</sup>**

**Shoot to win.<sup>®</sup>**

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## **PART 1 – EQUIPMENT INTRODUCTION**

### **PURPOSE**

The McMillan TAC®-50 Tactical Rifle System provides professionally trained personnel with the capability to effectively perform the tasks of a tactical marksman for combat and internal security operations. The rifle system can also be used in both advanced regional and national marksmanship competitions by civilians and professionals.

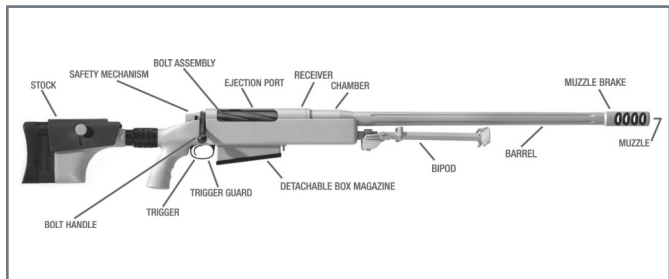
### **DESCRIPTION**

The McMillan TAC-50 Tactical Rifle System is a heavy barrel, manually operated bolt action, detachable box magazine system with five shot capacity. It is fitted with a TAC-50 McMillan Fiberglass Stock, equipped with a detachable butt, spacer system, and adjustable cheek rest.

The system utilizes a Remington type trigger set to 3.5 lbs, with an optional Jewell trigger upgrade. The 29" barrel is a match grade fluted chrome-moly barrel (stainless steel optional) with a 1 in 15 twist. All metal parts are finished with a matte corrosion resistant polymer finish with nickel/Teflon\* on the bolt assembly.

The McMillan TAC-50 Tactical System is capable of shooting sub-MOA in the hands of qualified marksmen with applicable match ammunition.

*\*Teflon is a Dupont trade name. PTFE is generic.*



## **PART 2 – PREPARATION FOR USE**

### **SAFETY RULES**

#### **WARNING: READ THESE BASIC SAFETY RULES**

Learn how to handle your rifle safely. Failure to follow these rules can result in serious personal injuries or death. Only you can prevent accidents.

#### **KNOW YOUR FIREARM**

To use it correctly and safely, read and follow the instructions in this manual.

1. Treat ALL firearms as if they are loaded.
2. Never point your firearm at anything you are not willing to destroy.
3. Keep your finger off the trigger until your sights are on target and you are ready to fire.
4. Be sure of your target! Know what is in front of and behind the target.
5. Never make changes to/or alter any parts in your rifle, especially the trigger. Use only original McMillan rifle parts.
6. Make yourself safe at all times by wearing eye protection, such as shooting glasses or impact resistant sunglasses, when shooting. Wear ear protection, such as ear plugs or earmuffs, if not both. Repeated exposure to shooting noise can cause permanent hearing loss.
7. Take care of your rifle system and keep the barrel and muzzle brake clean and free of obstruction. Keep the rifle clean and have

it checked periodically to verify and maintain proper function. Any worn, missing, or damaged parts may cause an unsafe condition resulting in possible injury or death.

8. Use only ammunition that exactly matches the type marked on your firearm. Handloads can be dangerous. McMillan is not responsible for any accidents or damage caused by handloads or improperly loaded ammunition. If for any reason the bolt closes with difficulty or increased effort, **“DO NOT FIRE THE RIFLE!”** If fired, the bolt may become stuck and require excessive means to open, causing possible damage to the rifle.
9. Never load a firearm until you are in a location where it is safe to fire and you are ready to shoot.
10. Know the range of your firearms! Remember, centerfire bullets can travel out to 5.5 miles.
11. If a firearm fails to fire, keep it pointed in a safe direction, wait one minute and carefully unload, avoiding exposure to the breech. If the firearm discharges, but the report or recoil seems weak, unload and ensure there are no barrel obstructions.
12. Unload your firearm whenever you are not shooting. Never carry or store a loaded firearm in a building or vehicle. Unload your firearm before climbing up or over a fallen obstacle, fence, or slippery area.
13. Store your firearm and ammunition safely, especially away from children. Lock unloaded firearms and ammunition securely in separate locations.

**CAUTION:** Never drink alcoholic beverages before or during shooting.

## NEW RIFLE BREAK-IN PROCEDURES

For the best results and longest life of your rifle barrel, we suggest the following break-in procedure.

1. Thoroughly clean the barrel before shooting. We recommend a good quality bronze brush (never use stainless steel brushes as they can damage the bore), coated cleaning rod, bore guide, brass jag, and soft clean patches. As for solvents, for initial cleaning we prefer a good copper fouling remover. Note that ammonia type fouling removers are caustic and can cause damage if left on surfaces. Follow all warning labels on any solvent or cleaners used.
2. Always clean the barrel from the chamber end towards the muzzle. With the bore guide in place, start by pushing a patch wet with solvent through the bore, followed by twenty (20) strokes of a solvent soaked bronze brush. Dry patch the barrel until patches come out clean. Once the barrel is clean and dry, the rifle is now ready for the first shot.
3. **WARNING:** Before firing the rifle, make sure that the barrel and the muzzle brake are clean and free of any obstruction, and **NEVER** fire the rifle without the muzzle brake.
4. Fire one round and reclean the bore as stated in step 2. In order to break in the barrel correctly it is critical to remove all traces of fouling. After the initial bore cleaning has been completed, run

several patches soaked in copper fouling remover completely through the barrel. Dry patch after each wet patch. Once there is no trace of copper in the bore and the patches come out clean and dry, fire the next round. Repeat this procedure for the first 10-12 rounds.

5. When you have completed this initial single shot sequence, you may proceed to the next step. Shoot two (2) shots and clean, for a total of twenty (20) rounds. At no time should the barrel be allowed to get so hot that you cannot hold it comfortably in your hands.
6. **CAUTION: Do not use any kind of abrasive cleaner in the bore of your rifle.**
7. To continue to get the best accuracy and longest life from your custom barrel, we recommend that you clean the barrel every 30-40 shots.

## **PART 3 – ASSEMBLY OF THE MCMILLAN TAC-50 RIFLE SYSTEM**

1. Your McMillan TAC-50 Tactical Rifle System can be broken down into two major components: the stock assembly and the action/barrel assembly.
2. Remove the stock and make sure there is no grit, dust, or any foreign matter in the recoil lug recess or bedding (action) area. This is absolutely critical to achieve accuracy.

3. Carefully inspect the action/barrel assembly and check that it is clean and free of any foreign matter.
4. Gently place the action/barrel assembly into the stock. Be careful not to damage or chip the bedding material in the recoil lug area.
5. Use the 5/16 x 24 hex head screws supplied to fasten the . action/barrel to the stock assembly. **NOTE:** The screws are marked on the end with a letter (i.e., “F” for front, “R” for rear).
6. With the action/barrel assembly in place, use a torque wrench to tighten the screws to 80-85 inch-pounds. Always tighten the front screw first (the screw closest to the muzzle). This is accomplished when the handle “clicks,” indicating the torque setting has been reached.
7. Insert the complete bolt assembly into the rear of the action. Ensure that the bolt stop clicks into the guide track in the bolt body.
8. Once the bolt is past the bolt release, you will have to depress the magazine follower to allow the bolt to go into battery.

## **BIPOD**

1. Remove the bipod from the case/packing carton.
2. Ensure that it is clean and free of any foreign matter, especially in the latches and spigot area.
3. Loosen the 3/8" bipod clamp bolt so the bipod clamp will slip over the bipod spigot.

4. Tighten the bipod clamp bolt. The bipod should not come off the spigot and should tilt from side to side. This unique feature of the McMillan M2 Bipod allows the shooter to maintain a perfect perpendicular reticle even though the ground may be uneven.

## **PART 4 – DESCRIPTION OF RIFLE SYSTEM CONTROLS**

### **SAFETY LEVER**

1. The safety lever provides protection against accidental or unintentional discharge under normal usage when properly engaged.
2. To engage the safety, move the safety lever to the rear (SAFE) position.
3. Always move the safety lever to the rear (SAFE) position before handling, loading, or unloading the rifle.
4. When you are ready to fire the rifle, move the safety lever to the forward (FIRE) position.
5. Avoid touching the trigger when moving the safety lever.



## **BOLT ASSEMBLY**

### **REMOVAL OF THE BOLT ASSEMBLY**

6. Point the rifle in a safe direction.
7. Move the safety lever to the rear (SAFE) position.
8. Avoid touching the trigger while moving the safety lever.
9. Raise the bolt handle.
10. Pull the bolt all the way to the rear.
11. Depress the bolt stop release.
12. As you depress the bolt stop release, slide the bolt from the rifle. The butt stock may have to be removed for clearance.



### **INSTALLATION OF THE BOLT ASSEMBLY**

13. Point the rifle in a safe direction.
  14. Move the safety lever to the rear (SAFE) position.
  15. Align the lugs on the bolt at 12 and 6 o'clock.
- NOTE:** The magazine follower must be depressed to allow the bolt to enter the receiver.
16. Slide the bolt assembly into the receiver approximately halfway and rotate it until the bolt stop/guide clicks into its track.
  17. To lock the bolt assembly into position, push the bolt handle down.

## **PART 5 – BARREL GROUP**

### **BARREL INSPECTION PROCEDURE**

The inside of the barrel must be clean and free of obstructions.

1. Point the rifle in a safe direction.
2. Move the safety lever to the rear (SAFE) position.
3. Raise the bolt handle.
4. Pull the bolt all the way to the rear.
5. Remove any ammunition from the chamber and/or magazine.
6. Remove the bolt.
7. Look through the barrel from the chamber end to the muzzle.

### **TO REMOVE AN OBSTRUCTION FROM INSIDE THE BARREL**

8. Use the correct size cleaning rod.
9. Push the cleaning rod from the chamber end all the way through the barrel until the rod comes out of the muzzle. Verify the muzzle brake is free of patches and other debris.
10. If an object cannot be easily pushed out of the barrel with a cleaning rod, return the rifle to McMillan.

**NEVER** try to remove an object from the barrel by loading another cartridge and firing.

## **PART 6 – CLEANING OF THE .50 CAL RIFLE BARREL MOLY COATED OR COPPER JACKETED BULLETS**

Clean the rifle after 30 to 40 rounds in order to maintain “benchrest accuracy.”

### **REMOVING AND INSTALLING THE MUZZLE BRAKE**

1. The rifle can be cleaned with the muzzle brake on or off.
2. To remove the muzzle brake, use a 12-inch or 300mm adjustable wrench with two layers of masking tape on the jaws. Clamp barrel in padded vise just behind the brake. You may have to use a wood mallet and/or nylon hammer, and give a sharp rap on the end of the wrench to break it loose. The brake is installed with standard right-hand threads.
3. To reinstall the muzzle brake, put 2 or 3 drops of gun oil on the barrel threads. For the last 1/4 turn, use the adjustable wrench and give it a fast turn to properly tighten the muzzle brake. For “Pinch Clamp” muzzle brakes, screw brake on to barrel until it stops. Back brake off until level and tighten cross-bolt to 80-85 inch-pounds. (Check the muzzle brake for looseness every 50 rounds, then tighten as necessary.)

### **CLEANING PROCEDURE**

4. Ensure the rifle is unloaded.
5. Remove the magazine, buttstock, and bolt from the rifle.
6. Ensure the muzzle is lower than the action.

7. Roll one patch all the way around the brass jag. The cotton patch should be 4"x6" for maximum effect. Wet the patch with solvent. Roll the cleaning rod with the wet patch in the chamber and neck area.
8. Unroll approximately 2" of the wet patch, leaving the other 2/3rds on the jag. Push the remaining wet patch through the bore and remove it at the muzzle.
9. Install the bore guide in the receiver. Replace the brass jag with the phosphor bronze brush, wet it with solvent and run it through the barrel and out the muzzle. Once the brush is forward of the muzzle, pull the brush back through the bore and out of the chamber. Do this a total of ten (10) times. After the tenth time, reapply the bore solvent and run the brush back through another ten (10) times. (Up and back is one time.)

**NOTE: NEVER** reverse the brush while inside the bore.

10. Replace the bronze brush with the brass jag and roll a 4"x4" patch on to the jag. Dry patch the bore until the patches come out clean and dry.
11. Roll a 4"x4" patch onto the jag. Wet the patch with copper fouling remover and push it through the bore and out the muzzle. Remove the old patch. Repeat once more and clean up with dry patch. The wet patches can be worked back and forth with short 4"-6" strokes to increase effectiveness. Repeat this process until all copper fouling is removed. Once all fouling has been removed from the barrel, remove the bore guide and dry patch the chamber, neck, and bore until clean and dry.

**WARNING:** Ammonia-based solvents should never be left in the barrel for more than 5 minutes, as they could permanently etch the bore.

**NOTE:** Do not ever use any type of copper fouling remover on bronze brushes. It will attack them the same as fouling in the bore. Copper remover may be used with a nylon brush for heavily fouled barrels.

12. Wrap a 4" square patch around the jag. Wet the patch with bore solvent (not copper remover) and run it through the bore, followed by one or two dry patches. Copper fouling removers will leave the bore dry and totally stripped of any oil. Many standard bore cleaners/solvents have some traces of oil that will stay in the bore.
13. The barrel should now be clean and the rifle ready to fire or store.

**NOTE:** For barrels using moly coated bullets, additional cleaning may need to be done to remove the moly fouling.

14. To remove moly fouling, wrap the brass jag with a dry patch. Install bore guide into receiver. Apply a bore paste to the patch and work the patch down the bore in the same manner as the copper remover. Repeat as necessary but do not over do. Once all moly fouling is removed, dry patch bore until patches come out clean. Excessive or improper use of abrasives can shorten service life and/or cause loss of accuracy.
15. Repeat steps 7 through 10 twice to remove any residue paste from the chamber and barrel.

**NOTE:** To perform step 14 the muzzle brake must be removed. Moly will build up on the rifling and will not come out with normal cleaning. It will prevent a rifle from firing at its peak, thus the reason to perform step 14.

## **PART 7 – OPERATING PROCEDURES**

### **LOADING THE MAGAZINE AND CHAMBER**

1. Point the rifle in a safe direction.
2. Move the safety lever to the rear (SAFE) position.
3. Raise the bolt handle.
4. Pull the bolt all the way to the rear.
5. Insert the required number of cartridges into the magazine.
6. Insert one cartridge into the chamber.
7. Using your finger, depress the cartridges in the magazine, and slowly slide the bolt forward so the bolt rides over the top cartridge in the magazine.
8. Finish closing the bolt on the cartridge you inserted into the chamber.



### **THE RIFLE IS NOW LOADED**

9. To fire the rifle, move the safety lever to the forward (FIRE) position.

## **THE RIFLE IS READY TO FIRE**

### **LOADING SINGLE CARTRIDGE ONLY**

10. Point the rifle in a safe direction.
11. Move the safety lever to the rear (SAFE) position.
12. Raise the bolt handle.
13. Pull the bolt all the way to the rear.
14. Insert one cartridge through the loading/ejection port and into the magazine.
15. Push the bolt forward and chamber the cartridge. Lock the bolt closed.
16. If you choose to insert the round directly into the chamber, the magazine follower must be depressed to allow the bolt to move forward. Once depressed the bolt may be closed over the chambered round.

**WARNING:** Always check the cartridge for the correct headstamp which matches the rifle. NEVER force the bolt closed on a cartridge. If extra effort is ever needed to close the bolt, stop. Open the bolt, remove and discard the round. Failure to do so may result in damage to the firearm and injury or death to the shooter.

### **THE RIFLE IS NOW LOADED**

17. To fire the rifle, move the safety lever to the forward (FIRE) position.

## **THE RIFLE IS READY TO FIRE**

## **UNLOADING UNFIRED ROUNDS FROM THE RIFLE**

18. Point the rifle in a safe direction.
19. Move the safety lever to the rear (SAFE) position.
20. Depress the magazine release latch and remove the magazine from the rifle.
21. Raise the bolt handle.
22. Put one hand over the top of the ejection port.
23. Slowly pull the bolt to the rear with your other hand to remove the cartridge from the chamber.
24. Take hold of the cartridge and remove it from the rifle.

**NOTE:** If the cartridge you are trying to remove slides into the chamber, normally the cartridge will slide back out by elevating the muzzle. If the cartridge remains in the chamber, push the bolt all the way forward and depress the bolt handle, locking the cartridge into the chamber and repeat steps 18 through 24.

## **PART 8 – CARE AND CLEANING PROCEDURES**

### **LUBRICATION**

1. Wipe the rifle down with a clean soft cloth. A thin coat of light oil may be applied to all steel surfaces. Apply gun grease (non melting grease, not heavy oil) at the rear of the locking lugs located at the front of the bolt, and the cocking cam located at the rear-underside. Keep grease from getting into the trigger as this may create an unsafe condition. Do not over lube.

2. When the rifle is to be stored, it should be carefully cleaned and thoroughly oiled. A soft 1" paint brush may be used to clean dust and dirt from hard to reach areas. The bore should be coated with a very light layer of oil. Avoid over oiling the bore as it will work its way down into the action.
3. When the rifle is to be reused, all excess lubrication must be removed. The chamber and the bore must be thoroughly cleaned and wiped dry.

**NOTE:** **NEVER** use WD-40 on any part of the rifle. WD-40 is a water displacing oil and will dry out, leaving a sticky varnish behind.

### **CLEANING THE RECEIVER AND TRIGGER ASSEMBLY**

4. Move the safety lever to the rear (SAFE) position.
5. Remove the bolt assembly.
6. Turn the rifle upside down.
7. Remove the two action screws.
8. Carefully lift the stock away from the receiver and trigger assembly.

**NOTE:** Clean the receiver and trigger assembly as a unit with a degreaser. Do not leave any degreaser on coated surfaces any longer than necessary.

9. Wipe the receiver down with a light coat of oil. Let stand for 15 minutes, then wipe or blow off all excess lubricant with a clean rag or air.

10. Before replacing the bolt, make sure the barrel is free from obstructions. Grease bolt as per step 1.
11. After cleaning the trigger assembly, check to be sure there are no cartridges in the rifle, close the bolt, move the safety lever to the forward (FIRE) position, and pull the trigger. The firing pin must fall. Repeat at least 5 times.

**WARNING:** If the firing pin does not remain cocked, when the bolt is closed smartly, return the rifle to McMillan.

12. Cleaning should also be performed after long term storage, or after being subjected to rain, sleet, dust, snow, sand, mud or saltwater.

### **CLEANING THE BOLT ASSEMBLY**

13. Remove the bolt assembly from the rifle.
14. Use a good quality solvent and a rag to wipe down the bolt body. Ensure that all fouling and residue are removed.
15. With a good quality bristle brush and solvent scrub the bolt face and remove all fouling and loose brass from the bolt face.
16. Lift the extractor upward and clean under the extractor notch with the brush and solvent.
17. Dry thoroughly and lubricate bolt body with a small amount of gun oil.
18. Activate the ejector and the extractor and ensure they move freely without sticking.

19. If the ejector or the extractor sticks, return the rifle to McMillan.
20. A light film of grease should be applied behind the bolt locking lugs. **DO NOT OVER GREASE.** This will facilitate smooth bolt movement and less grease will be needed as the rifle is broken in.

## **PART 9 – TRIGGER ADJUSTMENTS AND BOLT MAINTENANCE PROCEDURES**

### **TRIGGER ADJUSTMENTS**

The McMillan TAC-50 rifle comes supplied with an adjustable trigger assembly. It can be adjusted and maintained safely only by McMillan.

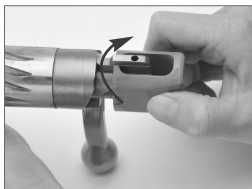


### **BOLT MAINTENANCE**

1. Remove the bolt from the receiver.
2. Hold the bolt in your left hand with the bolt handle towards you, bolt face to the left, cocking piece housing to the right, and with the cocking piece facing up.
3. Holding the bolt firmly in your left hand, grasp the cocking piece housing with your right hand, and give the cocking piece housing a 1/8 turn away from you (clockwise). This unlocks the firing pin assembly from the bolt.

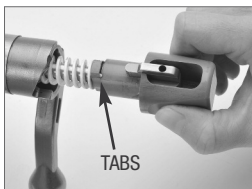


4. While still holding the bolt in your left hand, pull the firing pin assembly out to the right. Then lay the bolt body aside.



5. Remove all grease, dirt, powder residue, and solvents from the firing pin assembly and inside bolt body.

6. To reinstall the firing pin assembly, first apply grease at both locking tabs located on the cocking piece housing. Grasp the bolt with your left hand with the back of the bolt facing to the right.



Install the firing pin assembly into the back of the bolt while aligning housing tabs with the notches in the bolt body. When aligning the tabs, the cocking piece should be positioned to the right of the cocking cam and notch (LH models will be to the left). With the palm of your right hand, firmly press the firing pin assembly in until it bottoms out on the rear of the bolt. Once fully depressed, rotate the firing pin assembly counter clockwise.

7. You will feel the firing pin assembly lock in place.

8. Grease the locking lugs and cocking cam of the bolt. Install bolt in receiver making certain the bolt stop/guide has “clicked” into its track in the bolt body.

# TO LEARN HOW MUCH CONFIDENCE A COMPANY HAS IN ITS PRODUCTS, READ ITS WARRANTY.

## 100% Guaranteed Satisfaction

Every McMillan rifle carries an "Unconditional Lifetime Warranty" against manufacturing defects. This does not include normal "wear and tear" of the firearm including barrel life, internal components and damages resulting in operator misuse. If a problem occurs with the firearm, which is covered under warranty, the defective item will be repaired or replaced.

OR

If for any reason you are not 100% satisfied with your McMillan rifle, return it within 30 days of purchase in good condition for a full refund or exchange.

Items that are purchased but are not manufactured by McMillan, such as scopes and cases, are not covered under the McMillan warranty.



**McMILLAN®**

**Shoot to win.®**

Visit our website at: [www.mcmillanfirearms.com](http://www.mcmillanfirearms.com)

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