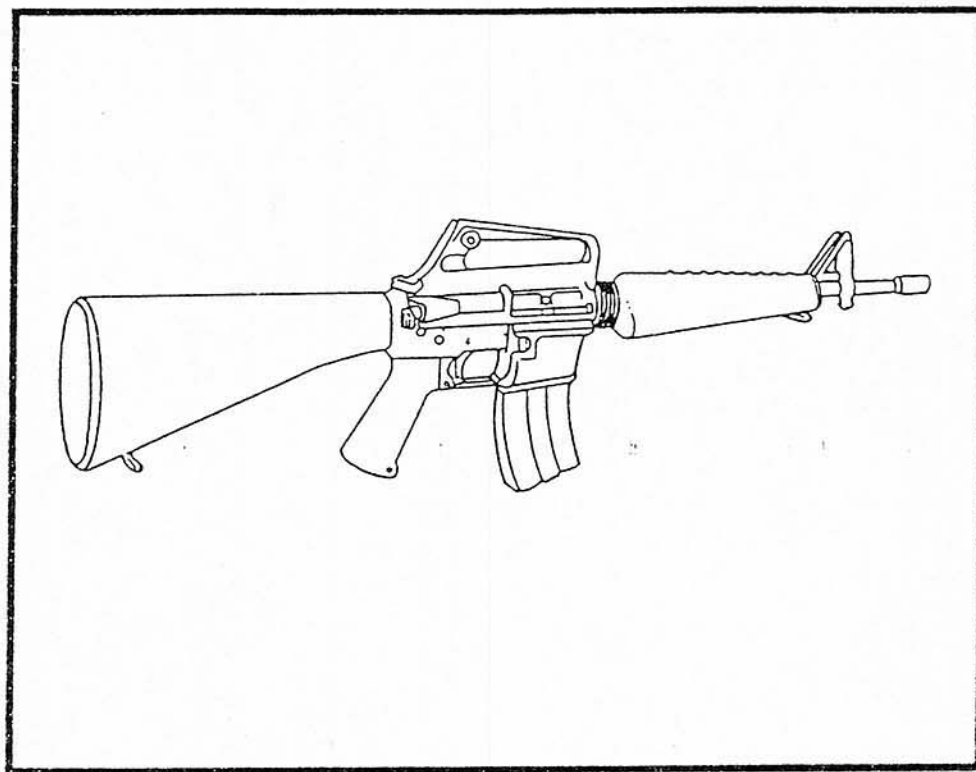


CLEANING AND LUBRICATING THE M16A1 RIFLE



PRODUCED BY
US ARMY QUARTERMASTER
SCHOOL
FORT LEE, VIRGINIA



January 1982

Digitized by:

January 1982

STUDENT/SUPERVISOR INSTRUCTIONS

AUDIENCE

- MOS 76Y
- Skill levels 1 and 2

TRAINING OBJECTIVE

Given the equipment and materials required, the soldier will be able to:

- Clean the M16A1 rifle
- Lubricate the M16A1 rifle

MATERIAL/EQUIPMENT/PERSONNEL REQUIRED TO COMPLETE THIS LESSON

- Pen or pencil
- Lesson booklet
- M16A1 rifle and magazine
- Cleaning and lubricating Job Aid No. 551-101-8353-J
- GTA No. 10-8-6, M16A1 Layout Chart
- Punch, 1/16 pt. dia in., NSN 5120-00-240-6082
- Cleaning and lubricating materials and supplies for the M16A1 rifle

TIME REQUIRED

- Soldier must complete the task within 2 hours

REFERENCES

- TM 9-1005-249-20

STUDENT INSTRUCTIONS

- Before taking this lesson, complete TEC Lesson No. 551-101-8352-A, "Dissassembly and Assembly of the M16A1 Rifle."

- Take the pretest. If you pass the pretest, you need not take this lesson.
- Insure that you have all material, equipment, or personnel required to complete this lesson.
- Read this lesson. Practice each step in the lesson until you can do it without looking at the book.
- Take the posttest. If you do not pass, read the lesson again and repeat the test.
- It is very important that you read every step in this lesson. Do not skip around and do the steps out of order. You could hurt yourself or harm the equipment. Do not do anything that is not explained in the lesson booklet, and observe all safety warnings. Safety warnings are printed in red. These are cautions or warnings you must observe so that you do not injure yourself or harm the equipment.
- Keep track of all dummy rounds. Keep them locked in your tool kit or some other location separate from live ammunition.
- Always clear any weapon before you work on it.
- Read all CAUTIONS printed in red BEFORE doing the next step.
- Be extra careful when working with springs that can fly out. Wear safety goggles.
- Do not write on this lesson booklet.

SUPERVISOR INSTRUCTIONS

- Insure that the student has completed the prerequisites listed above.
- Insure that the student has all material, equipment, or personnel required to complete this lesson.
- This lesson is self-teaching and self-paced. The soldier will learn the task by reading and doing the steps in the lesson. He can use as much time as needed, within reasonable limits, to learn the task.

- As a supervisor, you should be familiar with the lesson material so you can answer questions, score tests, and insure that all safety precautions and warnings are followed.
- Although this is a self-teaching program, it may be necessary for you to assist the soldier if he has difficulties. Everything the soldier needs to know to pass the test is in this booklet. When a soldier does not understand a step, it is usually because he is going too fast and skips a step. Reading the section again will often solve the problem. Occasionally, a soldier will not understand the whole lesson. If you are familiar with the weapon, you may explain the steps; or, if you will read the lesson yourself, you should be able to explain it to the soldier. If the weapon becomes jammed or is disassembled beyond organizational level, and neither you nor the soldier can remedy the problem, take it to direct support maintenance for repair.
- Allow the student to read the lesson and practice the task before testing.
- Follow set-up and scoring instructions for the test.
- Do not aid the soldier in taking the test.
- Observe the soldier's performance in the pretest/posttest.
- Score each performance measure as GO/NO GO.
- Be sure the soldier completes the task within the required time limit.

CORRESPONDING JOB PERFORMANCE AID ATTACHED

PRETEST/POSTTEST

Type of Lesson: Quartermaster

TEC Lesson No.
551-101-8353-A

Cleaning and Lubricating the M16A1 Rifle

General Information

This pretest/posttest covers cleaning and lubricating the M16A1 rifle. The test has three parts: the upper receiver group, the bolt carrier group, and the barrel. The soldier must complete all the performance measures for one group before going to the next group. In order to pass the test, the soldier must receive a GO on all performance measures and must complete the task within 2 hours. If he fails the test, the lesson must be repeated and the test retaken. The following items must be arranged on a table for the soldier's use during the test:

M16A1 rifle and magazine

TM 9-1005-249-20

GTA No. 10-8-6, M16A1 Layout Chart

Cleaning and Lubricating Job Aid No. 551-101-8353-J

Punch, 1/16 pt. dia in., NSN 5120-00-240-6082

Cleaning and lubricating materials:

Cleaning compound, rifle bore (RBC), NSN 6850-00-965-2332

Dry cleaning solvent (SD), NSN 6850-00-281-1985

Lubricant, solid film, NSN 9150-00-142-9309

Lubricating oil, semi fluid (LSA), NSN 9150-00687-4241

Lubricating oil, weapons (LAW), NSN 9150-00-292-9680

Cleaning and lubricating supplies:

Two (2) rags, wiping (cotton), NSN 7920-00-205-1711

Bore brush, NSN 1005-00-903-1296

Pipe cleaners, NSN 9920-00-292-9946

Crocus cloth, NSN 5350-00-221-0872

Cleaning rod, NSN 1005-00-089-3994

20 cleaning swabs, NSN 1005-00-299-3565

The scorer must have a watch, a pen or pencil, paper and the list of performance measures.

Test Instructions:

Your task is to clean and lubricate the M16A1 rifle. All the tools, parts, materials, and supplies you need are also on the table. You will have 2 hours to complete the test.

NOTE TO SUPERVISOR/SCORER:

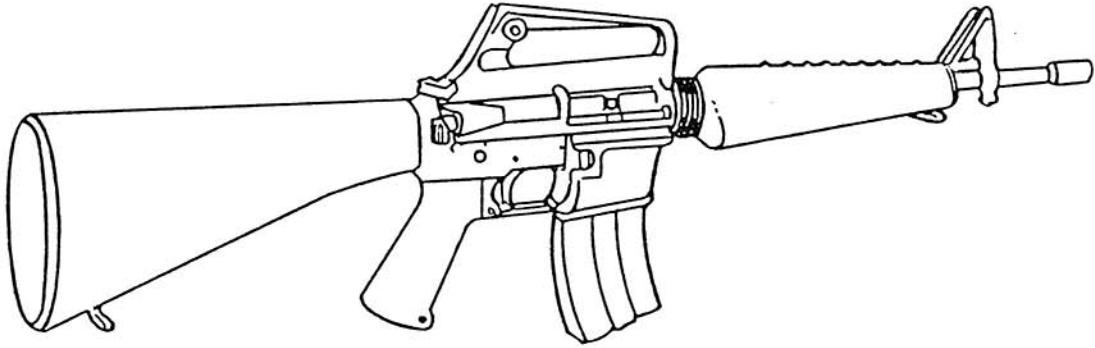
Please review the supervisor instructions at the beginning of this lesson and the information printed above and on the preceding page. Be sure that all of the items listed on the preceding page are available for use during the test. Read aloud the test instructions to the soldier, and begin timing his performance. Do not let the soldier continue past the time limit. On a separate sheet of paper, write GO or NO GO for each of the performance measures listed below and on the next page.

DO NOT WRITE ON THIS TEST.

<u>Performance Measures:</u>	<u>GO</u>	<u>NO GO</u>
Upper Receiver Group		
1. The soldier wipes all <u>outside surfaces</u> of upper receiver group with rag and RBC.	_____	_____
2. The soldier cleans outside surface of protruding gas tube with bore brush dipped in RBC.	_____	_____
3. The soldier coats inner surfaces of upper receiver with LSA.	_____	_____
4. The soldier applies light coat of LSA to outer surface of upper receiver group.	_____	_____
Bolt Carrier Group		
5. The soldier wipes all components of bolt carrier group with rag and RBC.	_____	_____

	<u>GO</u>	<u>NO GO</u>
6. The soldier uses a bore brush dipped in RBC to		
a. Scrub dirt from bolt locking lugs	_____	_____
b. Scrub extractor	_____	_____
c. Clean firing pin recess	_____	_____
d. Clean firing pin	_____	_____
e. Clean ejector and spring	_____	_____
7. The soldier uses a worn bore brush or pipe cleaner dipped in RBC to clean bolt carrier key. (Turns brush clockwise).	_____	_____
8. The soldier dries bolt carrier key with pipe cleaners. (Turns pipe cleaners clockwise).	_____	_____
9. The soldier applies generous coat of LSA to outside of bolt body and rings.	_____	_____
10. The soldier applies one drop of LSA in bolt carrier key.	_____	_____
Barrel		
11. The soldier pushes bore brush dipped in RBC through the bore until it extends beyond muzzle, without reversing direction of brush inside bore.	_____	_____
12. The soldier pushes clean swabs through the bore, without reversing direction inside the bore, until the swabs come out clean.	_____	_____
13. The soldier pushes chamber brush dipped in RBC into chamber.	_____	_____
14. The soldier applies a light coat of LSA to bore, chamber, and lugs in barrel extension.	_____	_____
15. The soldier applies heavy coat of LSA to front sight past screw, detent, and spring.	_____	_____
16. The soldier presses detent to work lubricant into spring.	_____	_____
17. The soldier completes the test within 2 hours.	_____	_____

CLEANING AND LUBRICATING THE M16A1 RIFLE



The M16A1 Rifle

INTRODUCTION:

This is TEC Lesson No. 551-101-8353-A, "Cleaning and Lubricating the M16A1 Rifle." This lesson will show you how to clean and lubricate the M16A1 rifle. Cleaning and lubrication keeps the M16A1 rifle in good working order.

EQUIPMENT/MATERIALS REQUIRED:

Items listed in Student/Supervisor Instructions on page i.

HOW TO CLEAN AND LUBRICATE THE M16A1 RIFLE

PREPARE THE WEAPON

STEP 1: Clear the rifle. Go back to TEC Lesson No. 551-101-8351-A if you don't remember how to do this.

STEP 2: Disassemble the rifle to major groups and assemblies:

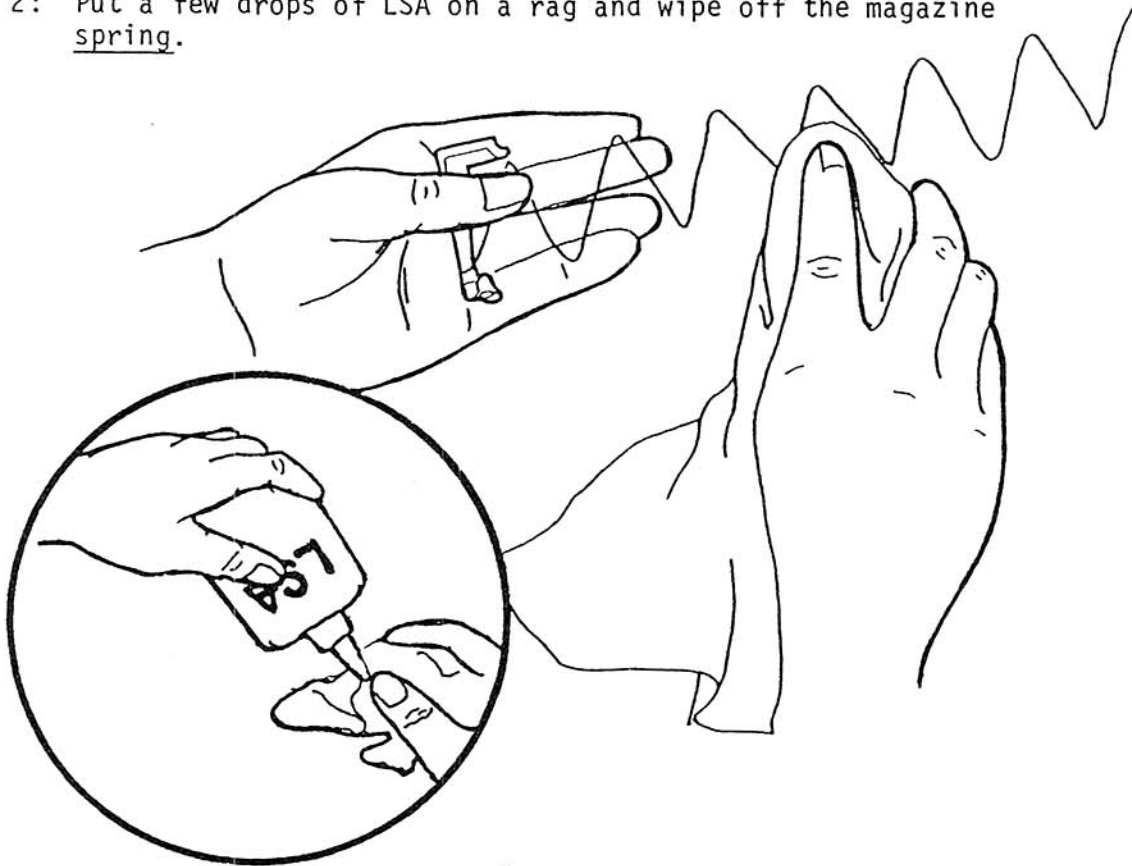
1. Remove handguards.
2. Separate upper and lower receiver groups.
3. Remove bolt carrier group.

Go back to TEC Lesson No. 551-101-8352-A if you don't remember how to do this.

CLEAN AND LUBRICATE THE MAGAZINE ASSEMBLY

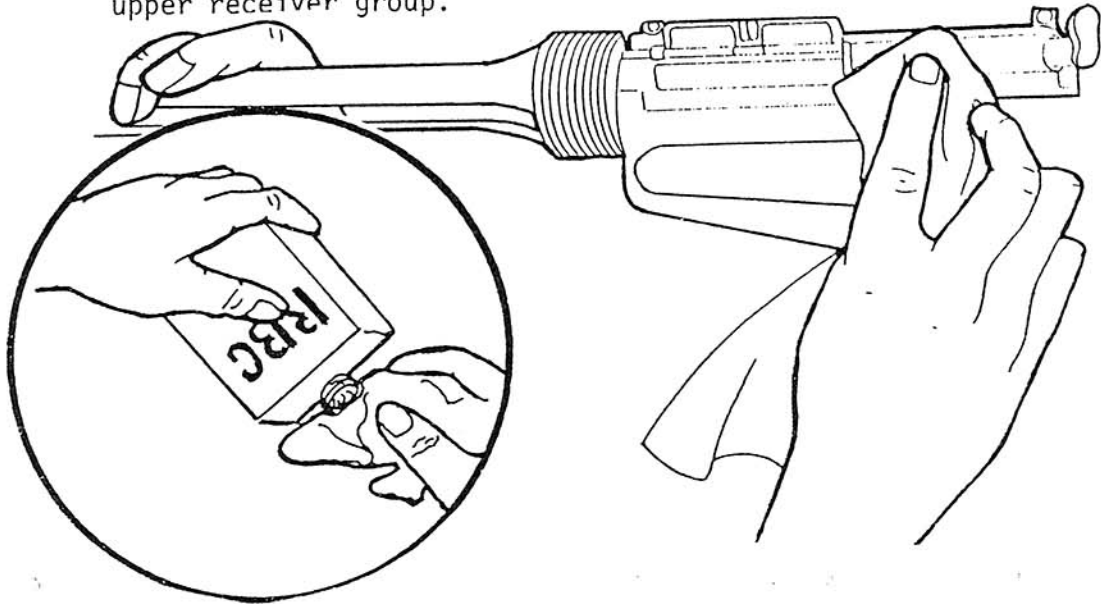
STEP 1: Wipe off the magazine tube, magazine spring and follower with a clean, lint free rag.

STEP 2: Put a few drops of LSA on a rag and wipe off the magazine spring.

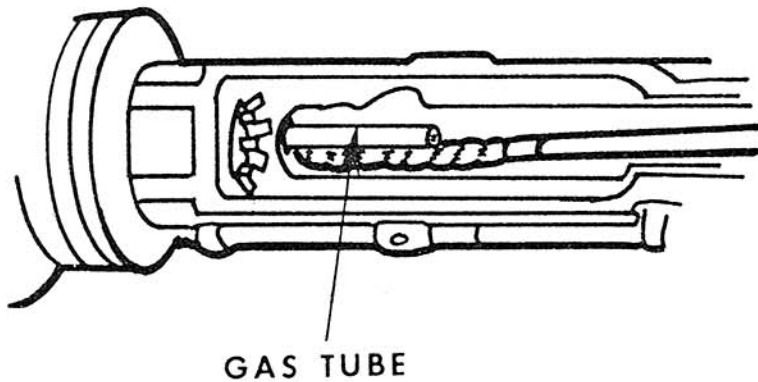


CLEAN AND LUBRICATE THE UPPER RECEIVER GROUP

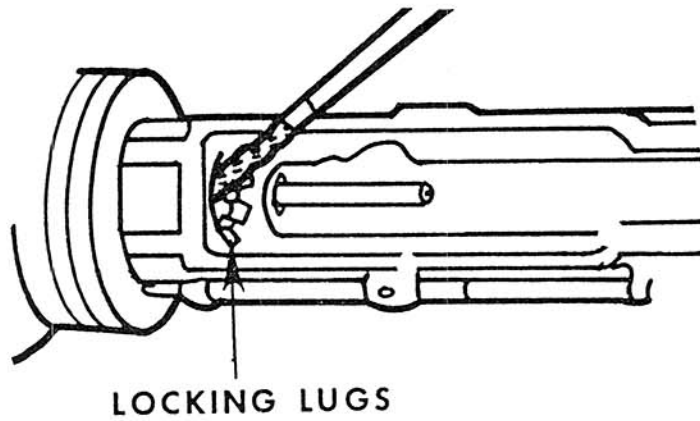
STEP 1: Soak a rag with RBC. Wipe off the outer surfaces of the upper receiver group.



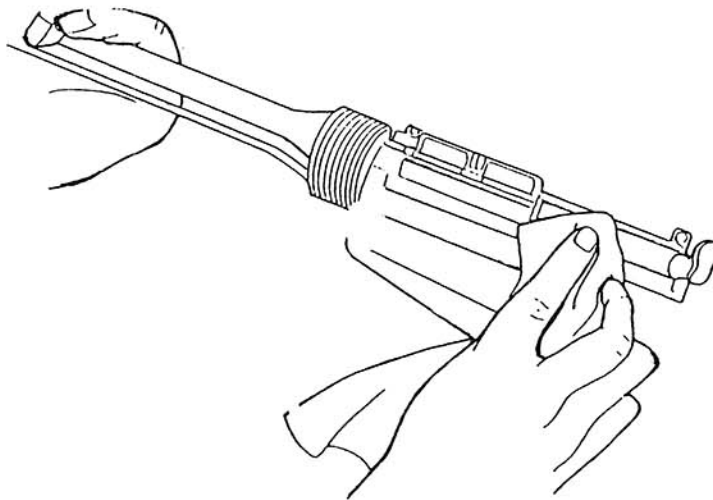
STEP 2: Attach the bore brush to the cleaning rod and dip the brush in RBC. Clean the outside surface of the protruding gas tube with this brush.



STEP 3: Clean the locking lugs in the upper receiver group with this brush.



STEP 4: Soak a rag with LSA. Wipe the outer surfaces of the upper receiver group, leaving a film of oil.



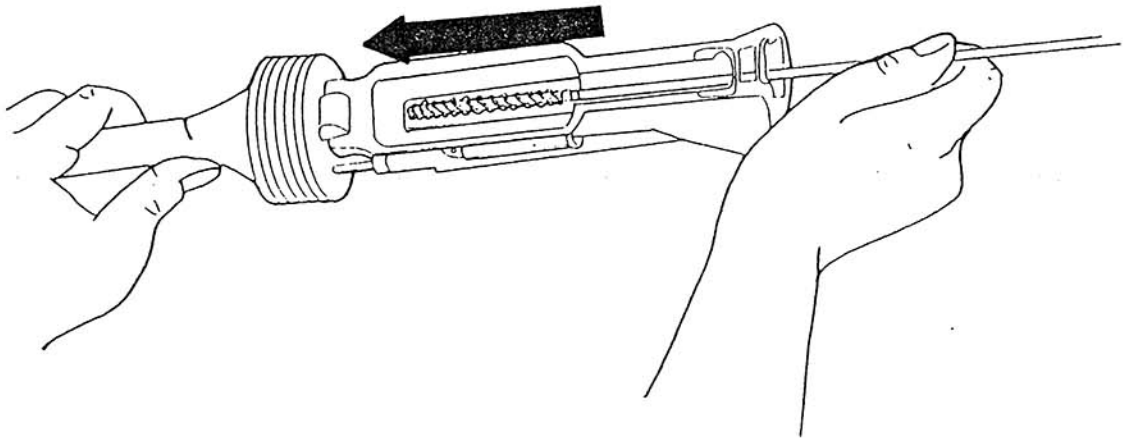
CLEAN AND LUBRICATE THE BARREL

CAUTION:

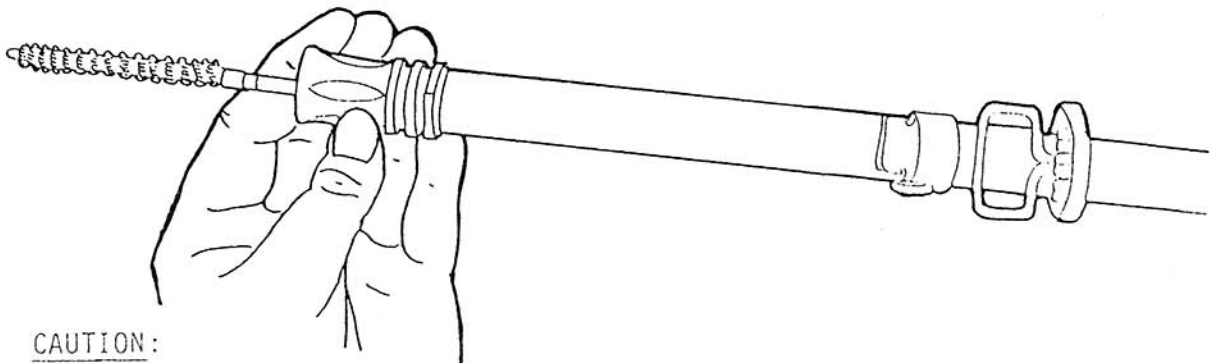
DO NOT USE THE WIRE BORE BRUSH ON THESE PARTS:

1. THE FIRING PIN
2. THE GAS TUBE
3. THE CHAMBER
4. THE SURFACES INSIDE THE HANDGUARDS

STEP 1: Attach the wire bore brush to the cleaning rod and dip the brush in RBC. Push the brush through the chamber into the bore.



STEP 2: Push until the wire bore brush sticks out of the muzzle.

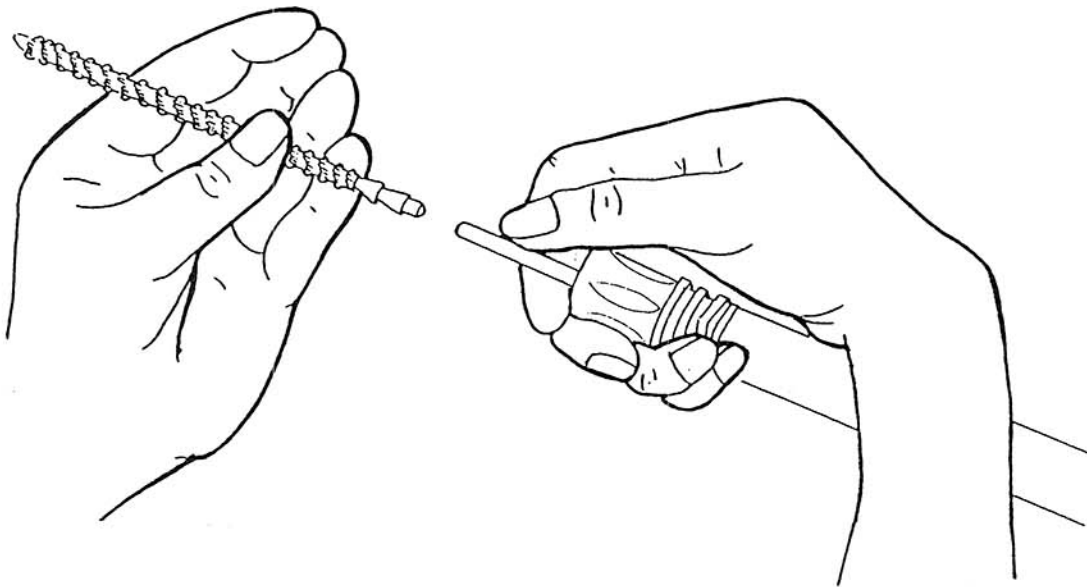


CAUTION:

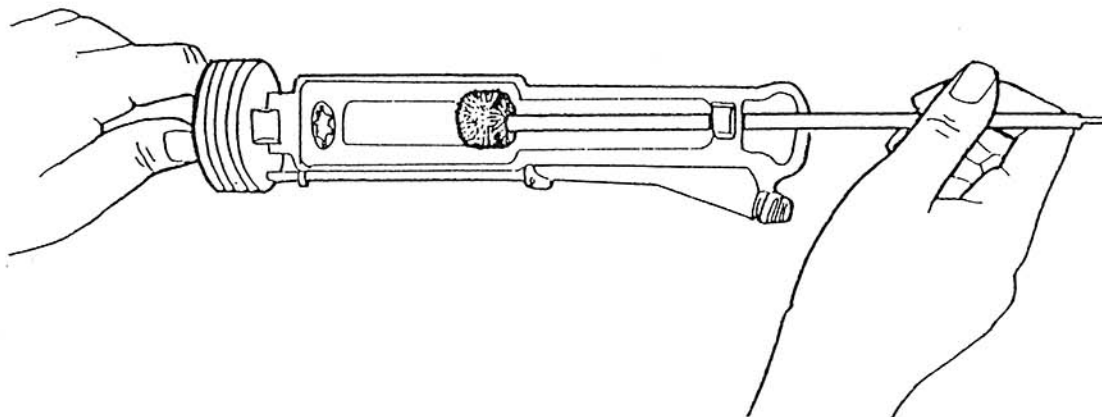
DO NOT PULL BACK ON THE CLEANING ROD.

STEP 3: Remove the wire bore brush and then pull out the cleaning rod.

STEP 4: Repeat until the bore is well covered with RBC.

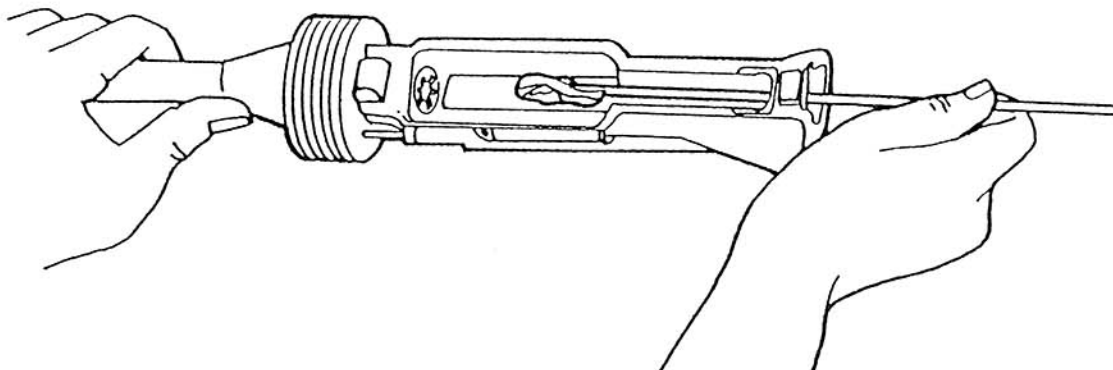


STEP 5: Attach the chamber brush to the cleaning rod and dip the brush in RBC. Push the brush back and forth turning it at the same time in the chamber.



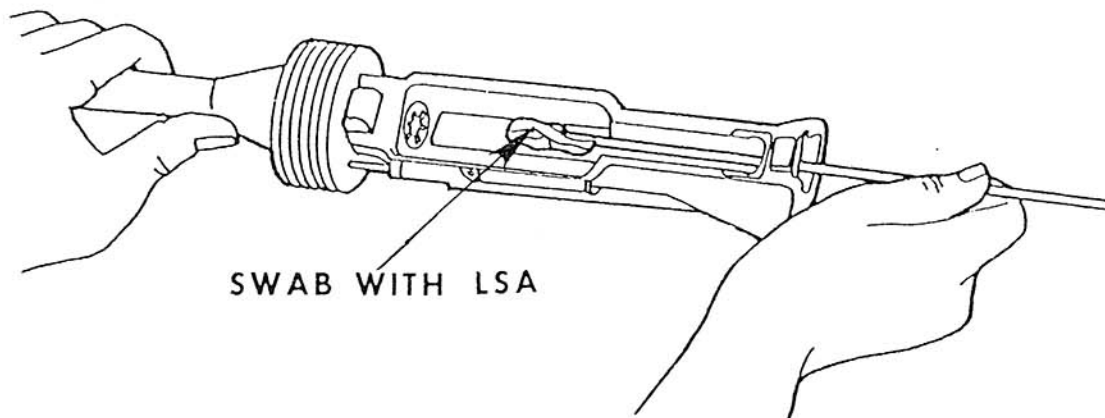
STEP 6: Take the chamber brush off the cleaning rod and attach a swab to the rod. Run the swab through the bore.

NOTE: Do NOT pull the swab back while it is in the bore.

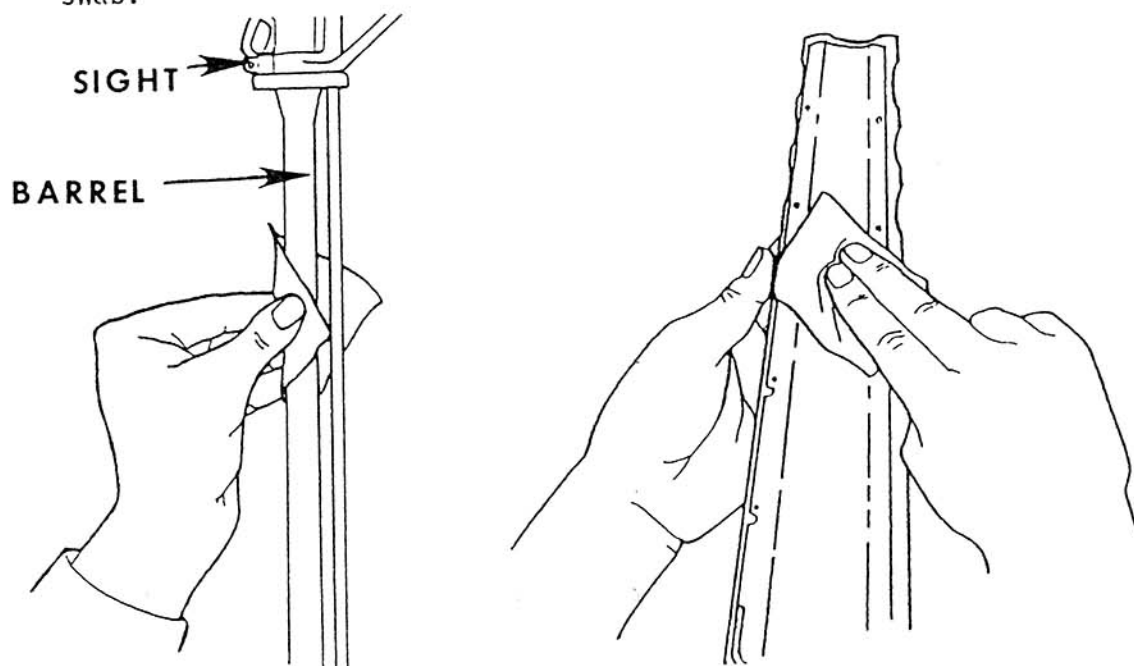


STEP 7: Put a clean swab on the rod and dry the chamber.

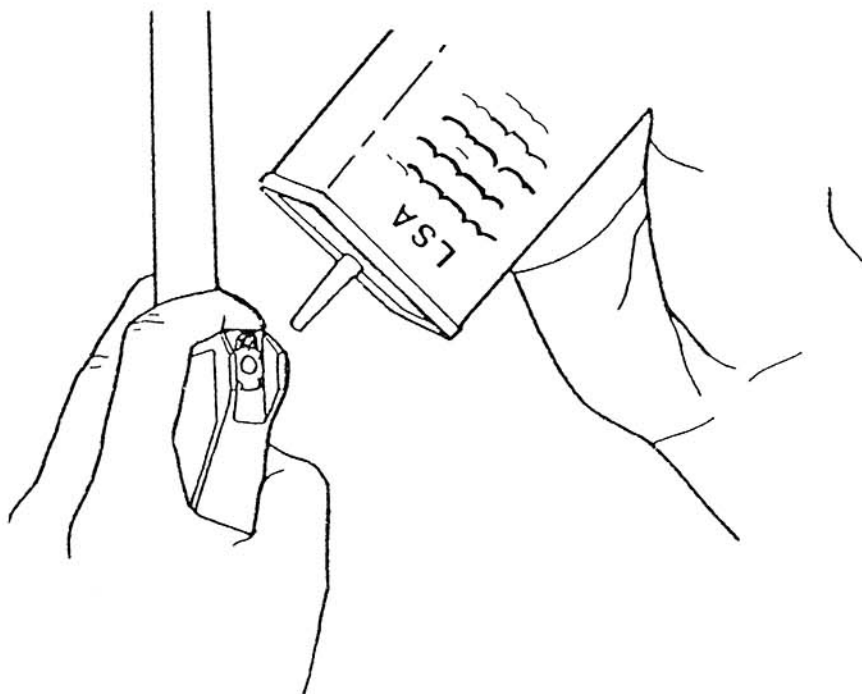
STEP 8: Put a few drops of LSA on a swab and attach the swab to the cleaning rod. Wipe the chamber and lugs on the barrel extension with the swab.



STEP 11: Put a few drops of LSA on a clean swab. Wipe the outer surfaces of the barrel and sights, and inside the handguards with this swab.

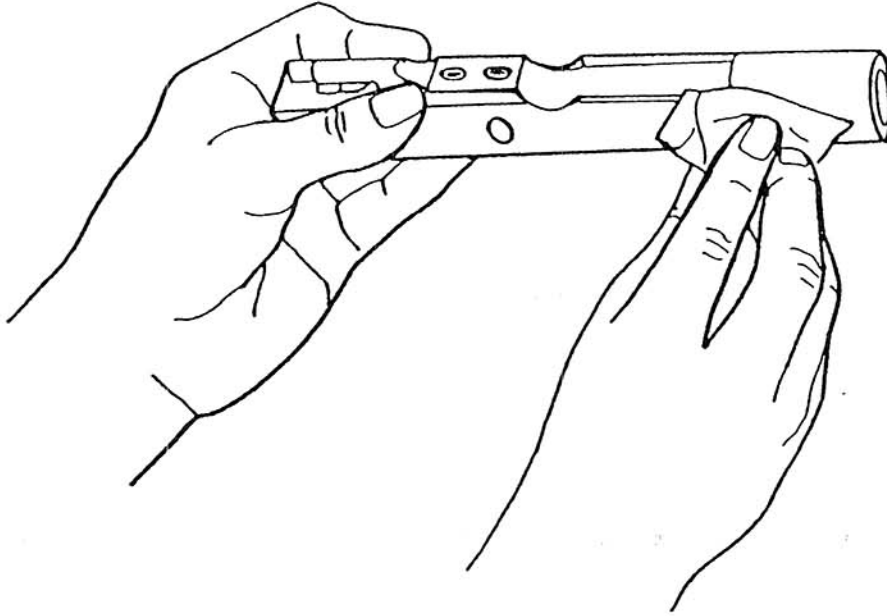


STEP 12: Squeeze a few drops of LSA on the front sight post screw, detent and spring. Press down on the detent 3 or 4 times.

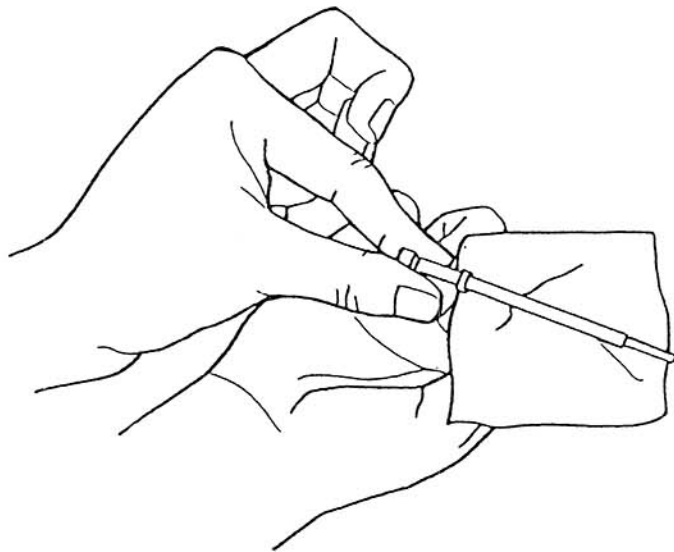


CLEAN AND LUBRICATE THE BOLT CARRIER GROUP

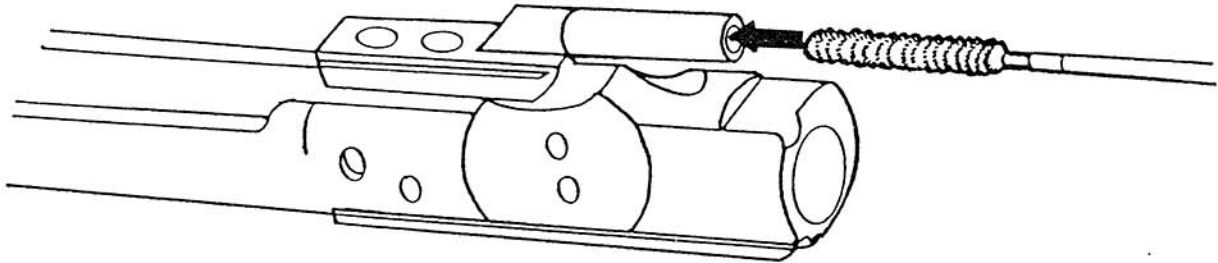
STEP 1: Soak a clean swab with RBC. Wipe off the entire bolt carrier group (inside and out).



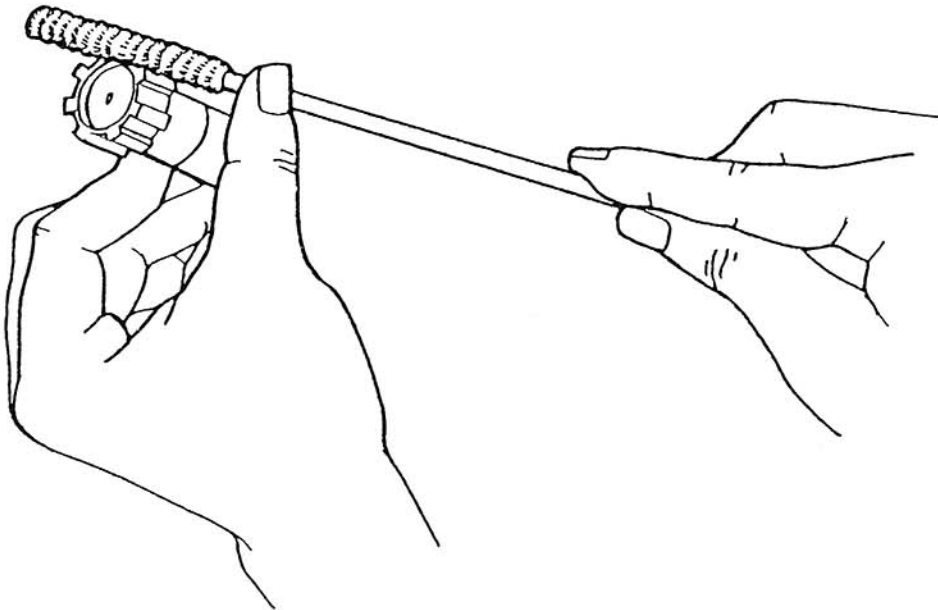
STEP 2: Wipe off the firing pin.



STEP 3: Attach the bore brush to the cleaning rod and dip the brush in RBC. Push the brush into the bolt carrier key.



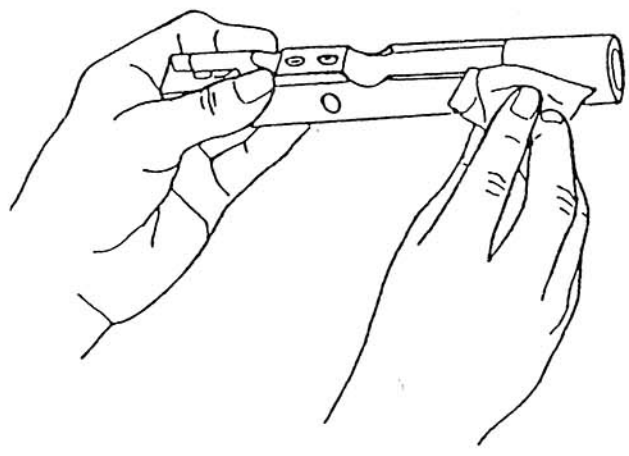
STEP 4: Re-dip the brush in RBC and clean the locking lugs on the bolt.



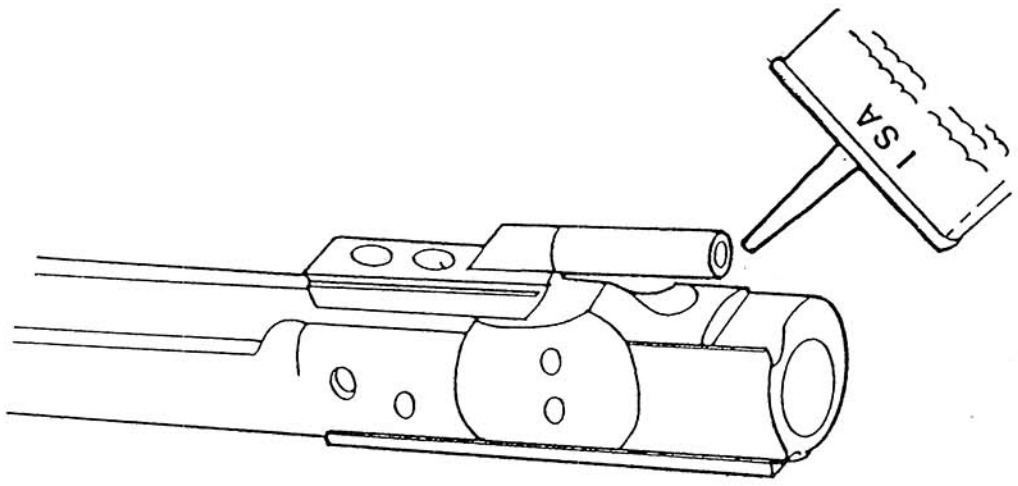
STEP 5: Get a pipe cleaner and push it into the bolt carrier key.

STEP 6: Get a clean, dry swab and dry off the bolt carrier group (inside and out).

STEP 7: Put a few drops of LSA on a clean swab. Wipe off the entire outer surface of the bolt carrier group. Also wipe the firing pin and its recess.

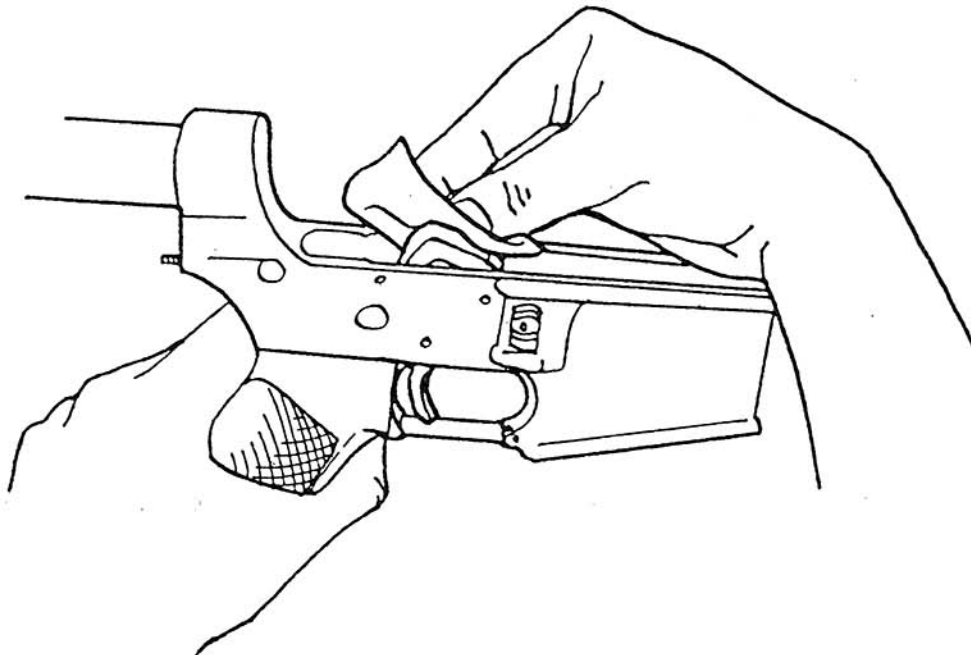


STEP 8: Put one drop of LSA in the bolt carrier key.

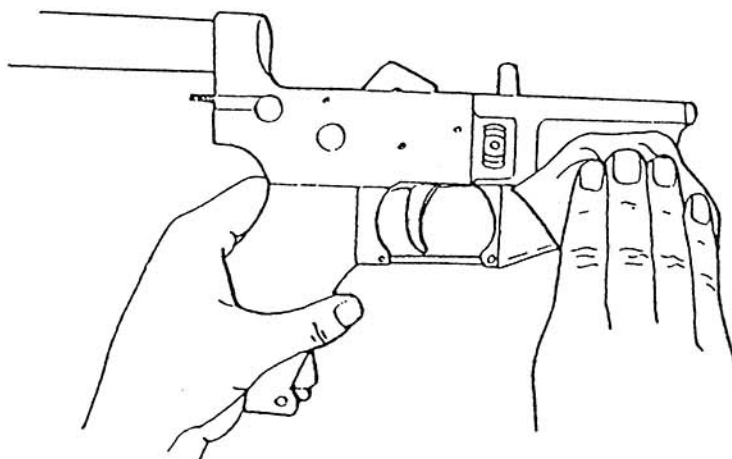


CLEAN AND LUBRICATE THE LOWER RECEIVER GROUP

STEP 1: Get a clean swab and wipe off the trigger mechanism of the lower receiver group.

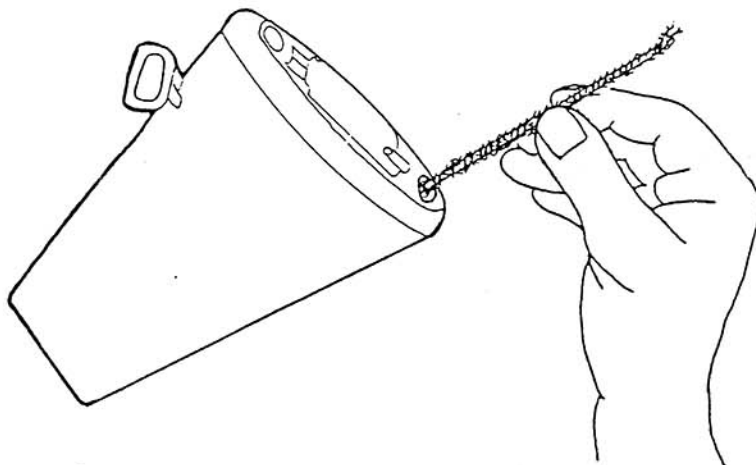


STEP 2: Soak a rag with RBC. Wipe off all the surfaces of the lower receiver group.

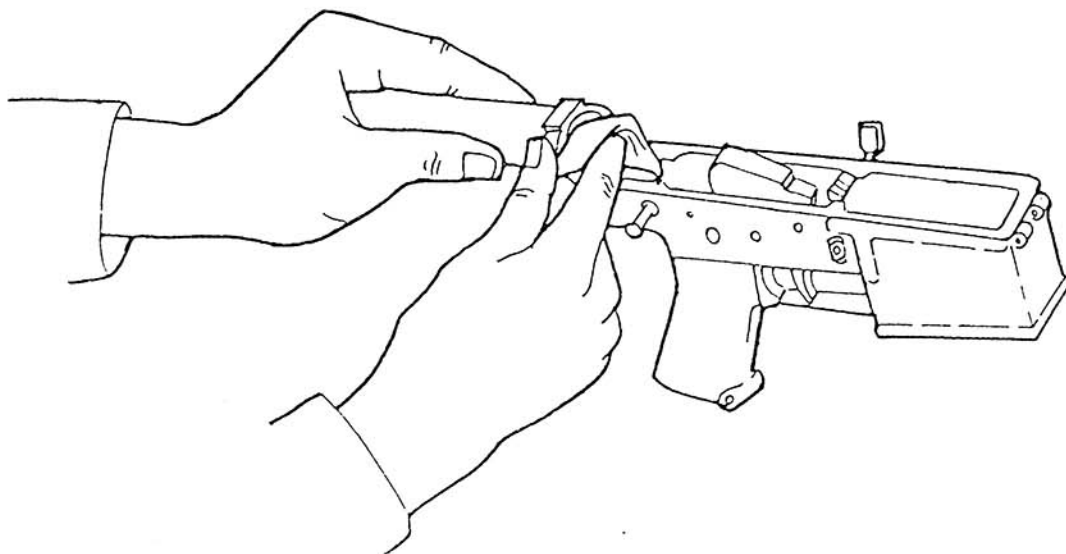
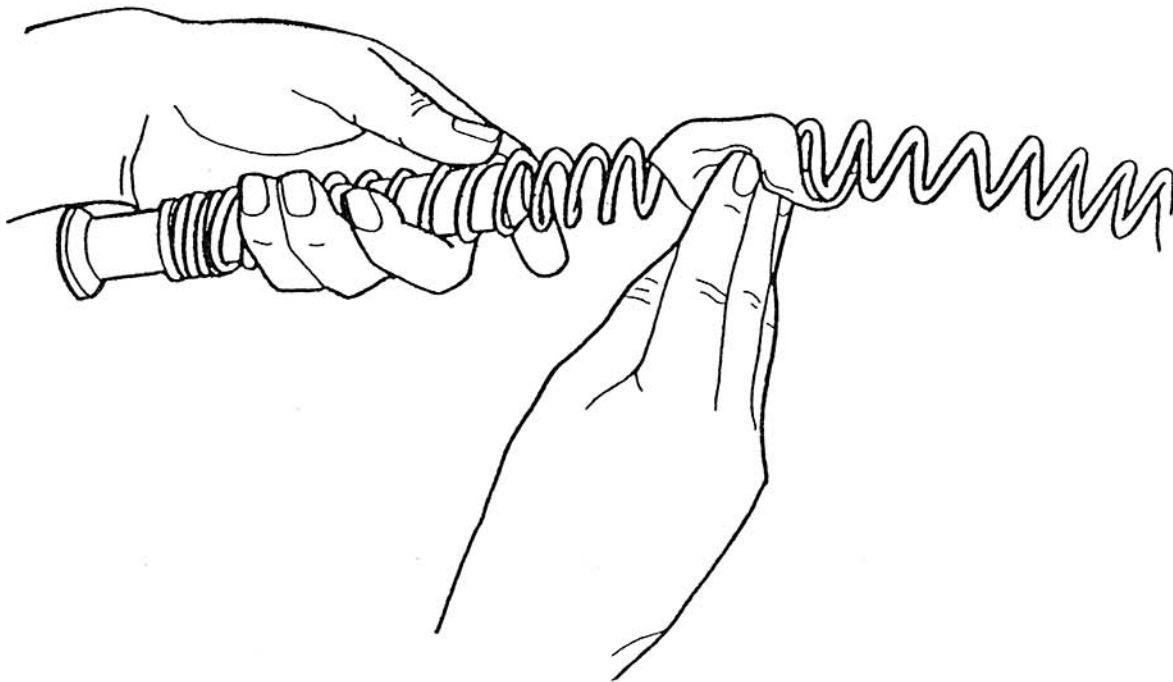


STEP 3: Get a clean rag and wipe the lower receiver group until dry.

STEP 4: Get a pipe cleaner and push it into the hole in the butt cap screw.

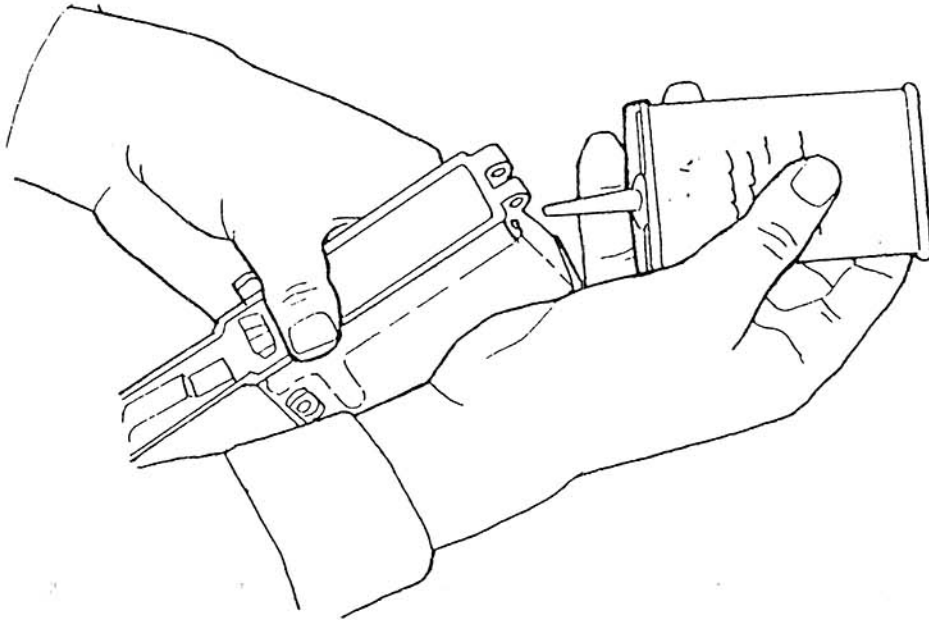


STEP 5: Put a few drops of LSA on a swab and wipe off the buffer and action spring, and the inner surfaces of the lower receiver extension.

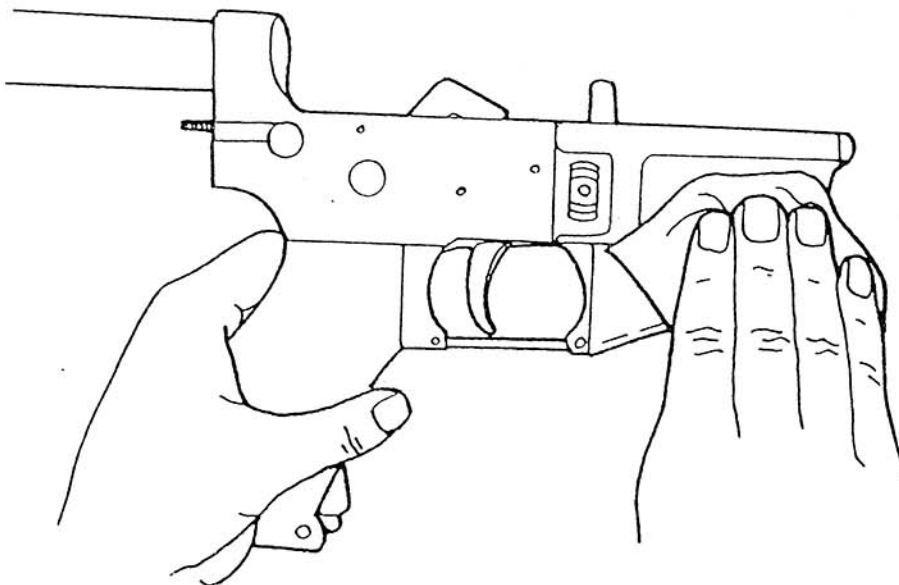


STEP 6: Get another swab and put a few drops of LSA on it. Wipe off the pivot pin, takedown pin and their detents and springs.

STEP 7: Put a few drops of LSA in the detent wells.



STEP 8: Wipe off the entire outer surface of the lower receiver group with this swab.



STEP 9: Assemble the M16A1 rifle.

STEP 10: Perform a function check on the M16A1 rifle.

STEP 11: Clear the rifle.

SELF-EVALUATION

Write the correct answers on a separate sheet of paper.

DO NOT WRITE ON THIS PAGE.

1. If the lower receiver group is coated with carbon, what do you use to clean it?
 - a. A rag and PLS
 - b. A bristle brush and RBC
 - c. A crocus cloth

2. What cleaning material do you use to clean frozen detents and springs?
 - a. RBC
 - b. P-C-111
 - c. CR

3. What do you use to clean the bore?
 - a. Wire bore brush; cleaning rod; RBC
 - b. Rags and RBC
 - c. Chamber brush; cleaning rod/RBC

4. What do you use to clean the bolt carrier key?
 - a. Swabs and cleaning rod
 - b. Bore brush dipped in RBC
 - c. Rags soaked in RBC

5. You lubricate the outside surfaces of the bolt with:
 - a. LSA
 - b. PLS
 - c. LAW

The correct answers are on the back of this page.

ANSWERS TO SELF-EVALUATION

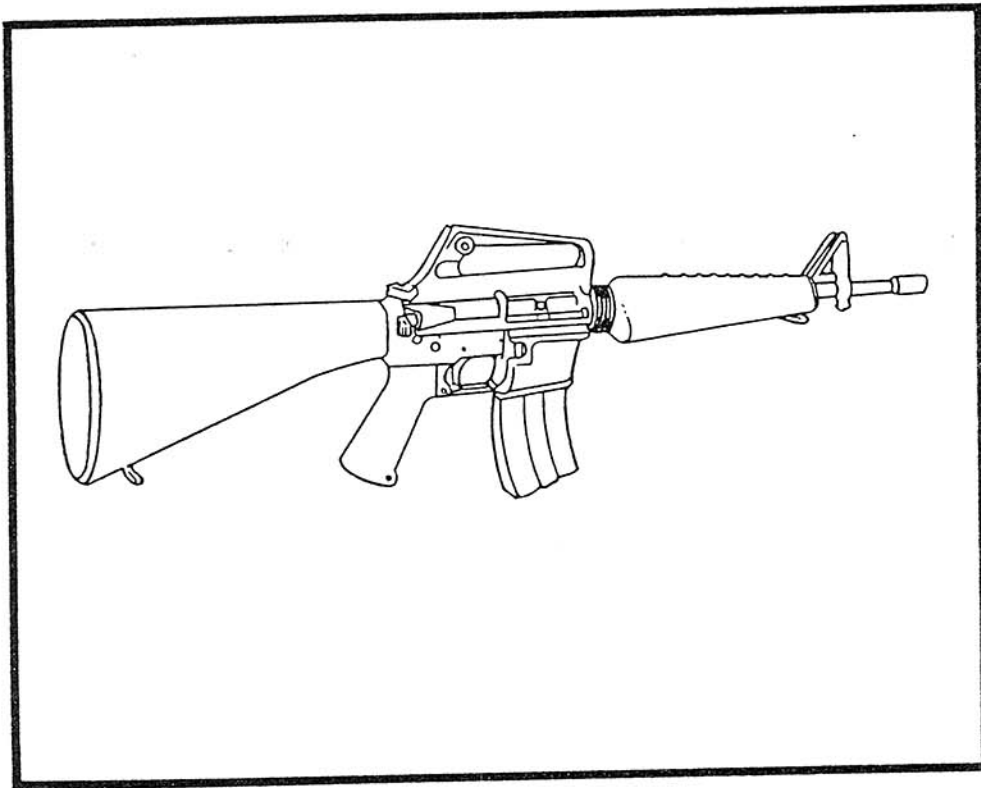
1. b., a bristle brush and RBC
2. b., P-C-111
3. a., wire bore brush; cleaning rod; RBC
4. b., bore brush dipped in RBC
5. a., LSA

WHEN YOU HAVE COMPLETED THE SELF-EVALUATION AND HAVE COMPLETED YOUR PRACTICE SESSIONS, ASK YOUR SUPERVISOR TO GIVE YOU THE POSTTEST.

JOB AID

CLEANING AND LUBRICATING THE M16A1 RIFLE

JOB AID NO. 551-101-8353-J



PRODUCED BY
US ARMY QUARTERMASTER
SCHOOL
FORT LEE, VIRGINIA



January 1982

When used in this publication, "he," "him," "his,"
and "men" represent both the masculine and feminine
genders unless otherwise stated.

INTRODUCTION

This is Job Aid No. 551-101-8353-J, "Cleaning and Lubricating the M16A1 Rifle." This job aid tells you the basic steps for cleaning and lubricating the M16A1 rifle. It also tells you how to clean and lubricate special problem areas on the M16A1 rifle. Special problem areas include parts that are corroded, frozen, or coated with carbon.

You must have this job aid to do TEC Lesson No. 551-101-8353-A. You should also use this booklet as a reference to help you with other TEC lessons and when you must perform these tasks in your job.

STEPS FOR CLEANING AND LUBRICATING THE M16A1 RIFLE

MAGAZINE ASSEMBLY

1. Clear the rifle.
2. Wipe off magazine tube, spring and follower with a rag.
3. Put a few drops of LSA on swab and wipe magazine spring.
4. Hand function using dummy round.

UPPER RECEIVER GROUP

1. Clear the rifle.
2. Wipe all outer surfaces of upper receiver group with rag and RBC.
3. Attach bore brush to cleaning rod, dip it in RBC, and clean the protruding gas tube in the upper receiver.
4. Put a few drops of LSA on rag and wipe outer surfaces of upper receiver.
5. Put a few drops of LSA on swab and lubricate surfaces inside hand guards.
6. Hand function using dummy round.

Do not clean the firing pin, gas tube, chamber, or hand guards with wire bore brush.

BARREL

1. Clear the rifle.
2. Attach bore brush to cleaning rod, dip it in RBC. Run brush from chamber to muzzle (inside the bore). Do not reverse direction of brush while inside bore.
3. Attach chamber brush to cleaning rod, dip it in RBC and clean chamber.
4. Dry the bore with swab attached to cleaning rod. Do not reverse direction of swab in bore.
5. Dry chamber with swab and cleaning rod.
6. Lubricate (with LSA) the bore, chamber, lugs on barrel extension.
7. Put a few drops of LSA in front sight post screw, detent, and spring. Work detent by pressing it three times.
8. Hand function with dummy round.

BOLT CARRIER GROUP

1. Clear the rifle.
2. Wet a swab with RBC and clean all parts of bolt carrier group.
3. Attach bore brush to rod and dip it in RBC. Clean the bolt carrier key, locking lugs on bolt, extractor, firing pin recess, firing pin, ejector and ejector spring.
4. Lubricate firing pin, bolt rings and firing pin recess with LSA and swab.
5. Reassemble bolt carrier group and lubricate outside surfaces with LSA and swab.
6. Dry bolt carrier key with pipe cleaners.
7. Put one drop of LSA in bolt carrier key.
8. Hand function with dummy round.

LOWER RECEIVER GROUP

1. Clear the rifle.
2. Wipe trigger mechanism with rag.
3. Wet a rag with RBC and wipe all outer surfaces of lower receiver group.
4. Clean hole in butt capscrew with pipe cleaner.
5. Put a few drops of LSA on swab and wipe buffer and action spring and inner surface of lower receiver group.
6. Lubricate pivot pin, detent and spring with swab and LSA and outer surfaces of lower receiver group.
7. Hand function with dummy round.

CLEANING AND LUBRICATING SPECIAL PROBLEM AREAS ON THE M16A1 RIFLE

This section will show you:

- A. How to clean an M16A1 that is coated with carbon.
- B. How to clean an M16A1 that is corroded.
- C. How to clean an M16A1 that has frozen detents and spring.

A. If any parts of an M16A1 are coated with carbon:

STEP 1: Dip a bristle brush (NSN: 1005-00-494-6602) in RBC and use a scrubbing action to remove the carbon.

B. If any parts of an M16A1 are corroded:

STEP 1: Wipe off the corroded areas with the crocus cloth.

STEP 2: Wet a rag with SD and wipe off the areas.

STEP 3: Dry the areas with a clean rag.

STEP 4: Wet a swab with LSA and oil the areas.

C. If detents and springs are frozen:

STEP 1: Get a can of P-C-111.

WARNING

P-C-111 is very strong and will cause burns if it touches your skin. For this reason, you must be very careful when you use it. WEAR RUBBER GLOVES! If you should accidentally splash some on your skin, immediately: wash it off thoroughly with running water, then apply a lanolin base cream.

STEP 2: CLEAR THE WEAPON.

STEP 3: Disassemble the weapon.

STEP 4: Put on the rubber gloves.

STEP 5: Get a can (#10 size) and the P-C-111. Half fill the can with P-C-111.

STEP 6: Get a dry rag and wipe all loose dirt, grease and oil from the lower receiver group.

- STEP 7: Place the front part of the lower receiver group in the can.
- STEP 8: Soak the lower receiver group for two to eight hours.
- STEP 9: Remove the lower receiver group from the P-C-111 and remove the pivot pins, springs, and detents.
- STEP 10: Dry off the pivot pins, springs, and detents with a clean rag.
- STEP 11: Assemble the weapon.
- STEP 12: Hand function the weapon.
- STEP 13: Clear the weapon.

U.S. Government Printing Office: 1962-542-712/511 Revision No. 3-11

Army-Fort Lee, VA-11976-82-8105-C