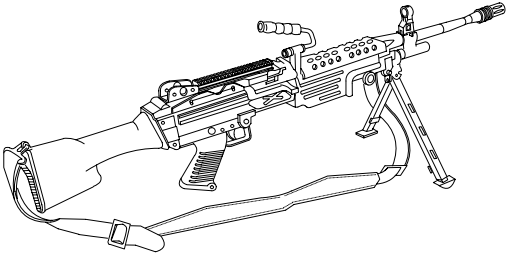
ARMY TM 9-1005-201-10
MARINE CORPS TM 08671A-10/1A
AIR FORCE TO 11W3-5-5-51
Supersedes copy dated September 1983

OPERATOR'S MANUAL
MACHINE GUN, 5.56MM, M249 W/EQUIP
(NSN 1005-01-127-7510) (EIC: 4BG) (AR ROLE)
(NSN 1005-01-451-6769) (EIC: 4BK) (LMG ROLE)



HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1991

ARMY TM 9-1005-201-10
MARINE CORPS TM 08671A-10/1A
AIR FORCE TO 11W3-5-5-51

CHANGE

HEADQUARTERS
DEPARTMENT OF THE ARMY

NO. 2

Washington D. C., 28 June 2002

Operator's Manual
Machine Gun, 5.56MM, M249 w/equip
(NSN 1005-01-127-7510) (EIC: 4BG) (AR ROLE)
(NSN 1005-01-451-6769) (EIC:4BK) (LMG ROLE)

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Remove Pages	Insert Pages
c and d	c and d
None	A thru D
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1-1 thru 1-6	1-1 thru 1-6
1-6.1/(1-6.2 blank)	1-6.1/(1-6.2 blank)
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C-3 thru C-6	C-3 thru C-7/(C-8 blank)
E-1 and E-2	E-1 and E-2
Cover	Cover

3. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

Official:

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0112702

ERIC K. SHINSEKI
General, United Army
Chief of Staff

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ARMY TM 9-1005-201-10
MARINE CORPS TM 08671A-10/1A
AIR FORCE TO 11W3-5-5-51

CHANGE

HEADQUARTERS
DEPARTMENT OF THE ARMY

NO. 1 WASHINGTON, DC

Operator's Manual
for
Machine Gun, 5.56MM, M249 w/equip
(1005-01-127-7510) (EIC: 4BG)

ARMY TM 9-1005-201-10, MARINE CORPS TM 08671A-10/1A, AIR FORCE TO 11W3-5-5-51, 26 July 1991, is changed as follows:

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Remove Pages	Insert Pages
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B-5 thru B-7/(B-8 blank)	B-5 thru B-7/(B-8 blank)
C-3 thru C-6	C-3 thru C-6
D-3 and D-4	D-3 and D-4
Front Cover	Front Cover

Retain this sheet in front of manual for reference purposes.

WARNING

1. **Be sure to clear weapon before disassembling, cleaning, inspecting, transporting or storing.**
2. **Stay clear of muzzle and always keep weapon pointed downrange.**
3. **Keep safety on until you are ready to fire.**
4. **Before firing, make sure the barrel is locked tightly.**
5. **Never remove trigger mechanism before weapon is cleared. removal of the trigger mechanism from a loaded weapon will cause a runaway.**
6. **Hot fired cartridge cases may strike right arm as they are ejected from the weapon when firing left-handed. Operators firing left-handed should not roll up right arm sleeve of clothing.**
7. **Never open the cover of weapon if the barrel is hot and you suspect there is a live round in chamber.**

WARNING

8. **Always look into chamber after clearing weapon.**

9. **With ammunition and weapon exposed to the sun on a hot sunny day, a cookoff can occur within 50 rounds of continuous firing.**

10. **Use only blank M200 with the Blank Firing Attachment (BFA) and do not fire directly at anyone less than 20 feet away.**

11. **Do not interchange barrel assemblies (to include spare barrel) or bolt assemblies from one weapon to another without having headspace checked.**

WARNING

12. **Do not allow round to hit any hard surface or it may fire. Dispose of live round in accordance with local regulations.**

13. **Do not modify components, use repair parts, or Interchange components other than those authorized by this TM. This includes other models of machine guns or foreign versions of this weapon.**

14. **Never reload a runaway weapon until it has been repaired.**

15. **The firing of long sustained bursts of greater than 25 rounds or a continuous firing of approximately 200 rounds will present a danger of 'cookoff' In the event a malfunction occurs; and will accelerate the premature wearing out of the barrel.**

16. **The canvas cover above the driver and passenger seats of the M998 HMMWV (Cargo/Troop Carrier) should always be in place when firing.**

17. **Firing on-the-move is not permitted from the M998 HMMWV (Cargo/Troop Carrier).**

WARNING

18. **Ground personnel should not be within 10 meters of any HMMWV carrier when firing.**
19. **Firing on-the-move is restricted to 5 miles per hour cross-country and 10 miles per hour on improved roads when mounted on M1025 and M1026 HMMWVs (Armament Carriers).**
20. **Never remove a hot barrel to clear a malfunction. Wait 15 minutes for barrel to cool.**
21. **All personnel within 30 meters of a weapon firing, shall wear approved single hearing protection devices during training exercises.**
22. **Do not dry fire the weapon. Allowing the bolt to slam closed on an empty chamber can cause unnecessary wear and possible damage to the bolt, barrel and receiver. Failure to return the cocking handle to the fully forward position prior to function checking (firing) the weapon can result in the bulging/cracking of the cocking handle guide rail portion of the receiver.**

For more information on first aid, see FM 21-11.

LIST OF EFFECTIVE PAGES

Dates of issue for original and changed pages are:

Original..... 0.....26 July 1991
Change 1 ..... 1.....25 November 1996
Change 2 ..... 2.....28 June 2002

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D-6 blank	1
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E-3 and E-4	0

*Zero in this column indicates an original page

TECHNICAL MANUAL
NO. 9-1005-201-10
NO. 08671A-10/1A
TECHNICAL ORDER
NO. 11W3-5-5-51

DEPARTMENT OF THE ARMY
MARINE CORPS AND AIR FORCE
Washington, DC., 26 July 1991

OPERATOR'S MANUAL
Machine Gun, 5.56MM, M249, W/Equip
(NSN 1005-01-127-7510) (EIC: 4BG) (AR ROLE)
(NSN 1005-01-451-6769) (EIC:4BK) (LMG ROLE)

*This manual supersedes TM 9-1005-201-10/TM 08671A-10/1, dated September 1983, including all changes.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Equipment Technical Publications), through the internet, on the Army Electronic Product Support (AEPS) website. The internet address is http://aeps.ria.army.mil. If you need a password, scroll down and click on "ACCESS REQUEST FORM". The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax, or E-mail your letter or DA Form 2028 direct to: AMSTA-LC-CI / TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The email address is TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

USMC users submit NAVMC Form 10772 to: Commander, Marine Corps Logistics Base (Code 850), Albany, GA 31704-5000.

Air Force users submit AFTO Form 22, Technical Order System Publications Improvement Report and reply to: WR-ALC/LZDTA, Robins AFB, GA. 31098- 5330

A reply will be furnished to you.

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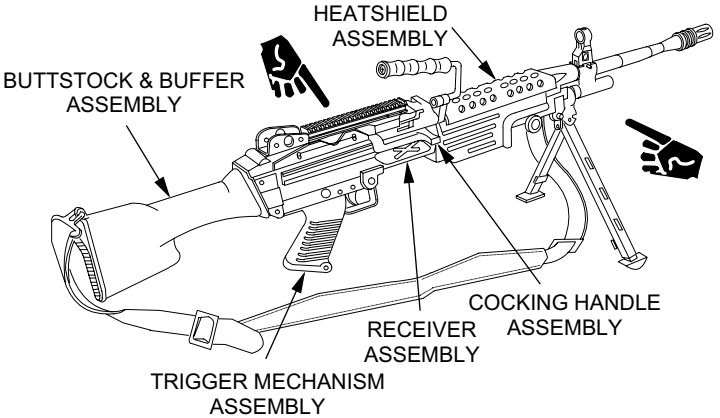
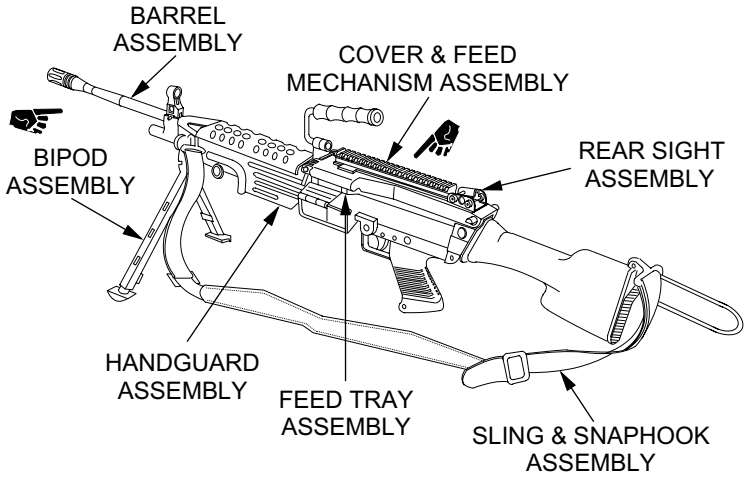
CHAPTER 1
INTRODUCTION
Section I. GENERAL INFORMATION



New style buttstock and buffer assembly shown.


BARREL ASSEMBLY
COVER & FEED MECHANISM ASSEMBLY
BIPOD ASSEMBLY
REAR SIGHT ASSEMBLY
HANDGUARD ASSEMBLY
FEED TRAY ASSEMBLY
SLING & SNAPHOOK ASSEMBLY

1-1. SCOPE.

A. Type of Manual: Operator's Manual.

B. Model Number and equipment name: Machine Gun, 5.56mm, M249 w/equipment.

C. Purpose of Equipment: The M249 machine gun is designed as a fire team automatic weapon providing suppressive fire at extended ranges allowing fire and movement to make contact with and destroy the enemy.

1-2. MAINTENANCE FORMS, RECORDS AND REPORTS.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 733-750, The Army Maintenance Management System (TAMMS). USMC users will refer to TM 4700-15/1, Equipment Record Procedures.

1-3. CORROSION, PREVENTION AND CONTROL (CPC).

CPC of materiel is a continuing concern. It is important any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in the future.

1-3. CORROSION, PREVENTION AND CONTROL (CPC) (Cont).

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials such as rubber or plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a corrosion problem is identified, it can be reported using Standard Form 368, Quality Deficiency Report. Use of key words such as “corrosion”, “rust”, “deterioration”, or “cracking” will assure that the information is identified as a CPC problem.

The form should be submitted to: ATTN: AMSTA-AR-QAW-C-WT, TACOM-ARDEC, 1 Rock Island Arsenal, Rock Island IL 61299-7300

USMC users should submit SF 368 (QDR) in accordance with MCO 4855.10 to: Commanding General, Marine Corps Logistics Base, ATTN: Code 808, Albany, GA 31704-5000.

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Procedures and materials used for the destruction of the machine gun will be found in TM 750-244-7.

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your machine gun needs improvement, let us know. Send us an EIR. You, the user, are the only one that can tell us what you don't like about your equipment. Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on a SF 368 (Quality Deficiency Report). Mail it to: ATTN: AMSTA-AR-QAW-C, TACOM-ARDEC, 1 Rock Island Arsenal, Rock Island, IL 61299-7300. A reply will be furnished directly to you.

USMC users should submit SF 368 (QDR) in accordance with MDO 4855.10, to: Commander, Marine Corps Logistics Base Albany, ATTN: Code 840, Albany, GA 31704-5000.

Air Force users submit Material Deficiency Report (MDR) and Quality Deficiency Report (QDR) in accordance with TO 00-35D-54, (TM, USAF, Material Deficiency Reporting and Investigating System) to WR-ALC/LZBS, Robins AFB, GA 31098-5330.

Section II. EQUIPMENT DESCRIPTION

1-6. EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES.

A. CHARACTERISTICS.

The M249 machine gun is belt-fed, gas-operated, air-cooled and fires from the open bolt position. The old style barrel has a regulator for selecting normal and adverse rates of fire in the event that the weapon firing rate slows down (weapon becomes sluggish). This feature is not needed with the hydraulic buffer. It also has a 30 round magazine feeding capability for emergency firing procedures and is fielded with two barrel assemblies.

B. CAPABILITIES.

The M249 machine gun can be used as a Squad Automatic Weapon (SAW) or, as a Light Machine Gun (LMG). It can be fired from the shoulder or hand-held position, bipod steadied position, the tripod mounted machine gun position, or from the pedestal or ring mount position. It has two barrel assemblies to extend the life of the barrels, retain accuracy and allow for continuous firing over long periods of time.

C. FEATURES.

The quick-change barrel is air-cooled and has a fixed headspace. The bolt is a multiple-lug type which rotates into a positive locked position in the barrel extension prior to firing. Gas is taken from the barrel acting on a piston directly fixed to the bolt carrier (slide). The gas pressure on the old style barrel is based on the gas exhaust system and is controlled by a two position regulator; one for normal conditions, the other delivering additional power for adverse conditions. The new style barrel has a preset gas orifice and rotation of the regulator has no effect on its operation. The new barrel also has a folding carrying handle. The M249 is equipped with a spare barrel in addition to the weapon barrel assembly.

The weapon containing a MIL-STD-1913 rail on the feed tray cover is capable of mounting various electro-optical devices.

1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

The major components of the machine gun are:

1. Barrel Assembly	Houses cartridge for firing, directs projectile, and supports fixed front sight. (Old style barrel to be replaced with new style barrel by attrition.) The latest barrels have a "mono-block" design that eliminates the separate gas collar and gas regulator.
2. Heatshield	Protects operator's hands from a hot barrel.
3. Receiver Assembly	Serves as a support for all major components. Houses action of weapon and through a series of guide rails, controls functioning of weapon.
4. Rear Sight Assembly	Rear sight is adjustable for both windage and elevation.
5. Cover and Feed Mechanism Assembly	Provides support for rear sight and means for gaining access to feed tray. By means of cam and lever action, feeds linked belt ammunition and holds cartridges in position for stripping, feeding, and chambering. Cover now also provides a mounting base for electron optical device.

1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Cont).

6.	Feed Pawl Assembly	Feeds linked belt ammunition, positions and holds cartridges in position for stripping, feeding and chambering.
7.	Feed Tray Assembly	Serves as a guide for positioning cartridges, to assist in chambering.
8.	Cocking Handle Assembly	Pulls the moving parts rearward. Moves in a guide rail fixed to the right side of the receiver.
9.	Buttstock and Buffer Assembly	Serves as a shoulder support for aiming and firing machine gun. Contains a folding shoulder rest and a hydraulic buffer. Old style buttstock does not contain a hydraulic buffer. (Old style buttstock to be replaced by Modification Work Order.)
10.	Bolt Assembly	Provides stripping, cambering, firing, and extraction, using the propellant gases and recoil spring for power.

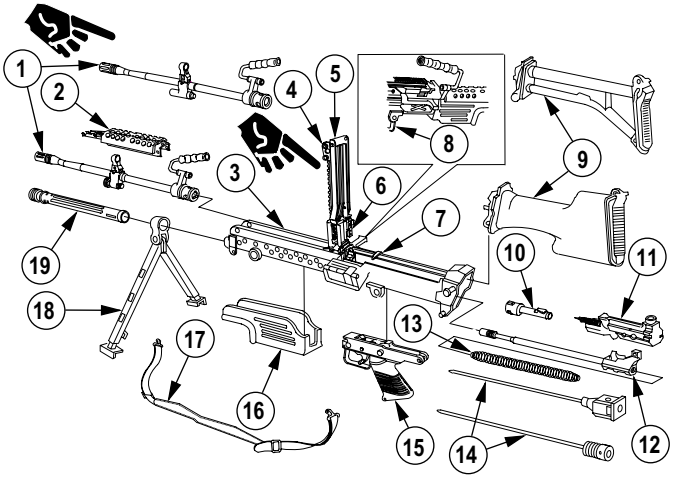
11.	Slide Assembly	Houses the bolt assembly, firing pin and roller assembly and cams bolt assembly to lock and unlock.
12.	Piston Assembly	Transfers power from propelling gases to bolt and slide assemblies to function the machine gun (move recoiling-parts rearward).
13.	Spring, Helical Compression	Provides power to the piston assembly for moving slide and bolt assemblies forward during weapon functioning.
14.	Return Rod and Transfer Mechanism Assembly or Rod Assembly, Operating	Absorbs recoil from bolt, slide, and piston assemblies at the end of recoil movement, and transfers recoil pressure to the buffer in the buttstock.
15.	Trigger Mechanism Assembly	Houses the trigger, sear and safety, and controls the firing of the machine gun.

1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Cont):

WARNING

THE SAFE INDICATOR FOR THE M249 IS USED ONLY DURING CLEANING PROCEDURES, AND WHEN THE WEAPON IS COMBAT LOADED. TO BE CONSIDERED "SAFE" BEFORE DISASSEMBING, CLEANING, INSPECTING, TRANSPORTING, OR STORING, THE WEAPON MUST BE CLEARED.

16.	Hand Guard Assembly	Provides thermal insulation to protect the operator's hands from heat, and houses cleaning equipment.
17.	Sling and Snap Hook Assembly	Provides a means of carrying the weapon.
18.	Bipod, Assembly	Supports machine gun in prone/sitting position. The telescopic legs can be individually adjusted to three different lengths.
19.	Gas Cylinder Assembly	Locks bipod in place on receiver and provides passageway for operating gases.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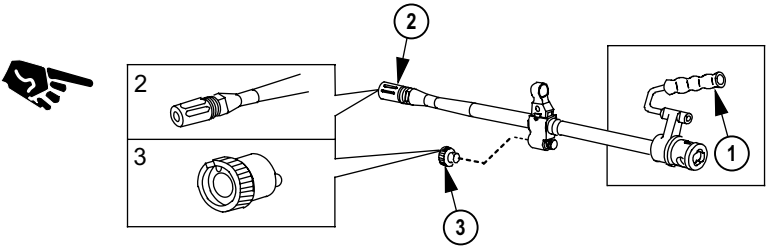
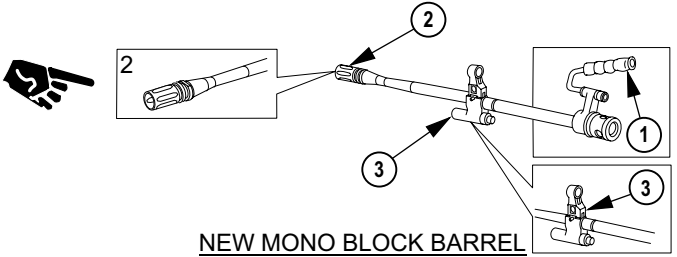
1-8. DIFFERENCES BETWEEN MODELS.

Old Style Barrel	New Mono Block Barrel
1. Carrying Handle - Folding (3 position)	1. Integral gas collar and gas regulator has no parts to disassemble.
2. Compensator - Minimizes Muzzle Flash, reduces and lessens muzzle climb.	
3. Gas Collar - Setting has no effect on cyclic rate. Only function is to lock gas regulator into barrel assembly.	



OLD STYLE BARREL



NEW MONO BLOCK BARREL

1-8. DIFFERENCES BETWEEN MODELS (Cont).

M249 w/Equip (AR)	M249 w/Equip (LMG)
1. Equipped with Sling Assembly and 2 each Magazine, Cartridge.	1. Equipped with Sling Assembly, Tripod Adapter Assembly, and Magazine Adapter.
2. Used in the automatic rifle (AR) role.	2. Used in the light machine gun (LMG) role, mounted on the M122 Tripod.

1-9. EQUIPMENT DATA.

Height

Weapon (with bipod and tools)..... 7.718 kg (17.00 lbs)
200 round box (filled)..... 3.140 kg (6.92 lbs)
100 round assault magazine (filled) ..... 1.62 kg (3.00 lbs)
Spare heat shield, spare barrel
assembly and barrel bag ..... 3.178 kg (7.00 lbs)

Length

Overall weapon ..... 1,035 MM (40.75 in)
Barrel assembly (spare) ..... 520 MM (20.50 in)
Rifling Twist (RH)..... 1 turn in 7 inches

1-9. EQUIPMENT DATA (Cont).

Rate of fire

Cyclic ..... 850 rds/min
Sustained (3-5 round burst, 4-5 seconds between bursts) ..... 50 rds/min
Recommend barrel change after firing 200 rounds.
Rapid (8-10 round burst, 2-3 seconds between bursts) ..... 100 rds/min
Recommend barrel change after firing 200 rounds.

Range

Maximum ..... 3600 M
Maximum effective ..... 1000 M (area target)

Sights

Front ..... Semi-fixed hooded post type
Rear ..... Fully adjustable peep type for elevation and windage
Auxiliary sights ..... Installed on the feed tray cover optics rail

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

NOTE

Always keep in mind the CAUTIONS and WARNINGS. The numbers in the item number column shall be used for the "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

2-1. PMCS.
Perform PMCS if: (1) you are assigned as the machine gun operator, or (2) the machine gun is being issued for the first time.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
	Before	Tools and Equip-ment	Visually check for missing or damaged tools and equipment.	

WARNING

DO NOT INTERCHANGE BARREL ASSEMBLIES (TO INCLUDE SPARE BARREL) OR BOLT ASSEMBLIES FROM ONE MACHINE GUN TO ANOTHER WITHOUT HAVING HEADSPACE CHECKED. DOING SO MAY RESULT IN INJURY TO PERSONNEL OR DAMAGE TO WEAPON.

CAUTION

ROTATE USAGE OF THE BARREL ASSEMBLIES TO MINIMIZE WEAR.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
			NOTE **When barrel is removed/installed the bolt must be locked rearward with safety on.**	
1	Before	Machine Gun	Visually check for accompanying spare barrel assembly.	Spare barrel assembly is not available.
2	Before	Barrel Assembly	Remove barrel (p 2-33); check bore and chamber.	a. Obstruction in barrel cannot be removed.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
2 Cont			Using cleaning rod assembly (items 9, 10, and 12, app D) and swab (item 14, app D), remove lubricant, foreign material or obstructions.	
			Install and lock barrel assembly securely in receiver (p 3-54). (Spare barrel must also be checked before use).	b. Barrel will not lock securely in receiver.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
3	After	Barrel Assembly	Clear weapon (p 2-16); check chamber and bore for obstructions. Install and lock barrel assembly securely in receiver (p 3-54). (Spare barrel assembly must also be checked).	a. Obstruction in barrel cannot be removed., b. Barrel will not lock securely in receiver.

NOTE

When a barrel is removed during extended firing missions, lubrication should be reapplied during cooling period.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
4	Before	Cover Assembly	Squeeze cover latches and raise cover. Let go of latches and close cover. Inspect cover assembly to ensure it will remain fully opened.	a. Latches fail to hold cover shut. b. Spring fails to hold cover assembly fully open.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
5	Before	Cocking Handle Assembly	With palm up pull cocking handle rearward to charge weapon. Confirm that bolt assembly moves freely without binding and locks to rear.	Cocking handle does not fully charge weapon.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
6	Before	Safety	With bolt assembly locked to the rear (cocked position), push safety to "SAFE" (RED BAND not visible). Pull trigger; bolt assembly should not move forward.	The bolt assembly moves forward with the safety engaged.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
7	Before	Bolt Assembly	While charging weapon, confirm that bolt assembly moves freely without binding and locks in cocked position.	a. Bolt assembly binds in receiver. b. Bolt assembly fails to lock in cocked position.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
			NOTE **Push safety to "FIRE" (RED BAND visible). Hold cocking handle to rear and pull trigger. Ride cocking handle forward.**	
8	Before	Gas Collar (old style barrel only)	Confirm that collar is in "N" (normal) position.	Not applicable.
			NOTE **Setting of gas collar on new style barrel has no effect on cyclic rate.**	

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
			NOTE **Insure proper lubrication has been applied to the weapon.**	
9	After	Machine Gun	If cyclic rate slows down or weapon becomes sluggish; clear, clean and lubricate weapon.	a. Cleaning and lubricating weapon does not improve functioning.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
9 Cont				b. Notify unit maintenance as soon as possible if weapon does not function properly.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location: Item to Check/Service	Procedure	Not Fully Mission Capable If:
10	After	Machine Gun	Clear, disassemble, clean, inspect, lubricate, reassemble and function check weapon (p 3-18 thru 3-66).	a. Any part to include the spare barrel assembly is broken, missing or damaged to the extent that it could cause the weapon to malfunction. b. Spare barrel assembly is not accompanying the weapon.

Preventive Maintenance Checks and Services (Cont).

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
11	Before	Sling & Snaphook Assembly	Visually inspect for improperly assembled, broken, missing or damaged parts. Check overall appearance. If damaged, notify unit maintenance.	

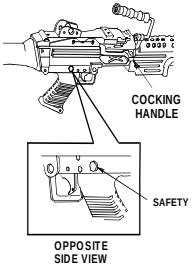
Section II. OPERATION UNDER USUAL CONDITIONS

2-2. OPERATION OF WEAPON.

WARNING

THE FIRING OF LONG SUSTAINED BURSTS OF GREATER THAN 25 ROUNDS OR A CONTINUOUS FIRING OF APPROXIMATELY 200 ROUNDS WILL PRESENT A DANGER OF "COOKOFF" IN THE EVENT A MALFUNCTION OCCURS; AND/OR WILL ACCELERATE THE PREMATURE WEARING OUT OF BARRELS.

LOADING



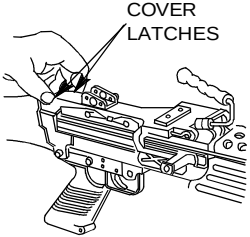
With palm up, charge weapon by pulling cocking handle to rear, to lock bolt (cock weapon). Push cocking handle forward until you hear it click. Push safety to right (RED BAND not visible).

LOADING (cont)

COVER ASSEMBLY

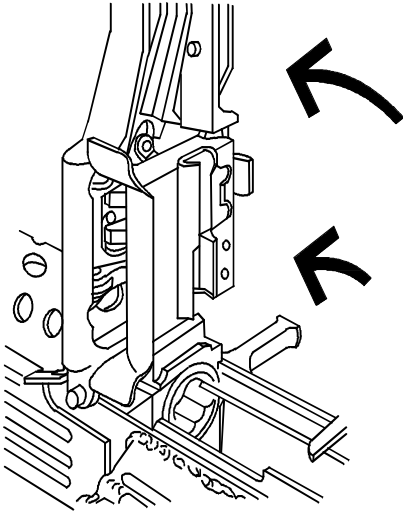
Squeeze latches to open cover assembly.

COVER LATCHES

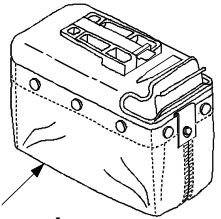


Raise feed tray assembly.

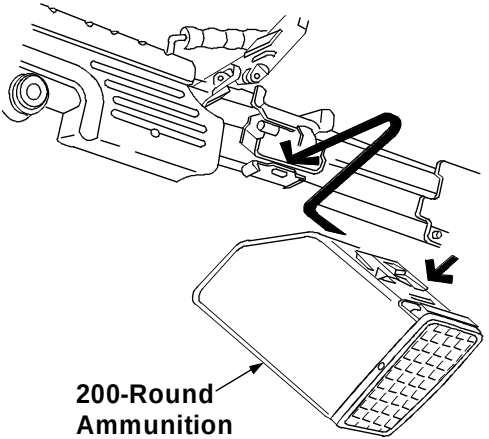
Look into chamber to make sure there is no round chambered.
Lower feed tray assembly.



Attach 200-round ammunition box or 100- round assault magazine containing link belt to underside of receiver, after alining box/magazine latch with receiver dovetail.



100-Round Assault Pack



200-Round Ammunition Box

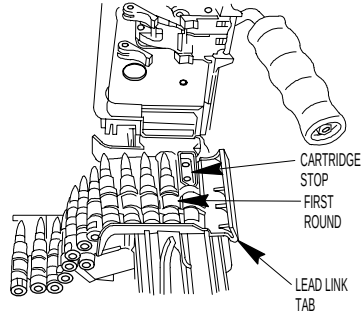
Pull outward on ammunition box or magazine to ensure that the alining box /magazine latch is engaged.

LOADING (Cont)

NOTE

During training exercises where broken (shortened) belts are used and the lead link tab is not available the lead round should be stripped from the link. Place the open link well onto the feed tray until the first round is against the cartridge stop. The open side of links are down.

Place link belt in feed tray assembly with first round against cartridge stop and hold belt in position. Close cover assembly. If loose or partial ammunition belt is being loaded, hold belt in place while closing cover.



NOTE

The cartridge indicator is no longer required and must be removed. If during the loading operation a cartridge indicator sticks up above the top of the left side of the cover, notify unit maintenance.

WARNING

YOUR WEAPON IS NOW COMBAT READY, E.G., AMMUNITION LOADED, BOLT TO THE REAR, AND SAFETY ON (RED BAND NOT VISIBLE).

CAUTION

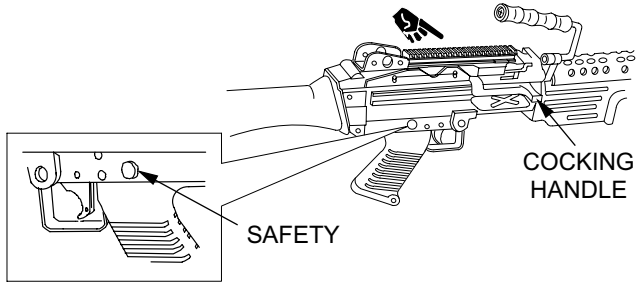
THE WEAPON CAN BE MANIPULATED TO CLOSE THE BOLT ON AN EMPTY CHAMBER, AND PLACE THE SAFETY IN THE ON POSITION (RED BAND NOT VISIBLE). HOWEVER, DOING SO RENDERS THE WEAPON "NOT COMBAT READY", AND IF THE BOLT IS MISTAKENLY CHARGED WHEN AMMUNITION HAS BEEN LOADED WITH THE SAFETY ON, DAMAGE TO THE WEAPON AND/OR AMMUNITION CAN OCCUR.

WARNING

NEVER REMOVE A HOT BARREL TO CLEAR A MALFUNCTION. WAIT 15 MINUTES FOR BARREL TO COOL.

CLEARING.

Charge weapon (pull cocking handle rearward). Be sure bolt is locked in rear position. Push charging handle forward until you hear it click.

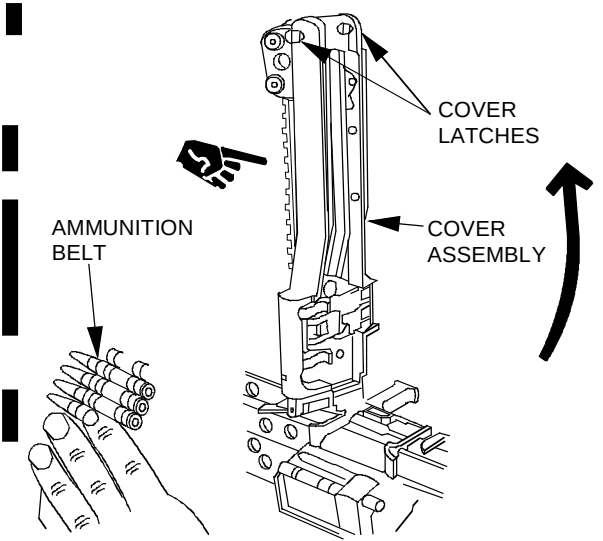


Push safety to right (RED BAND not visible).

If belt fed:
Squeeze latches to open cover assembly.
Remove ammunition belt and any links present on feed tray.

If magazine fed:
Remove magazine.
Squeeze latches to open cover assembly.
Remove any loose rounds.

For alternate firing mode follow instruction on page 2-50.



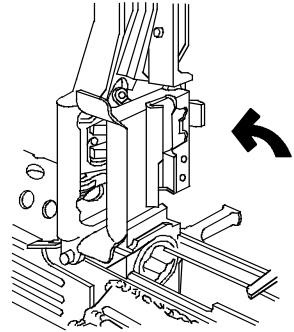
CLEARING (Cont).

NOTE

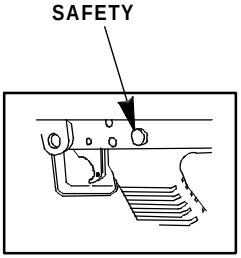
A cleaning rod may be used to ensure barrel and chamber are cleared.

Raise feed tray assembly. Look into chamber. Round still chambered? Remove it. Follow instructions on page 2-28.

Magazine well/receiver cavity/chamber empty? Lower feed tray assembly. Close cover assembly. Make sure it locks shut.



Push safety to left (RED BAND visible). Hold cocking handle to rear, pull trigger, and ride bolt forward to close and lock.



Look in receiver cavity for live rounds or spent cartridge cases. With left hand, open magazine well cover by pushing inward, and check for live rounds or spent cartridge cases.

NOTE

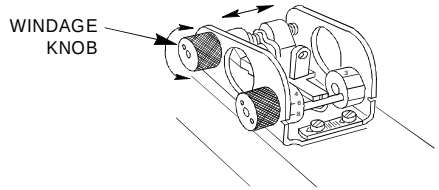
When clearing the weapon after use on the training range, ensure the rod used for clearing does not touch the ejector.

FIELD ZERO

NOTE

Each sight may vary as to how many clicks are needed to center the sight. To check your sight, start with the sight leaf all the way to the left; counting the clicks, rotate the windage knob (front knob) until the sight leaf stops on the right side. Divide this number of clicks by two and move leaf sight right to center - example: 24 clicks = 12 to center; example: 23 clicks = 12 to center (11 + 12 = 23, use larger figure).

To field zero your machine gun in azimuth, you must first center your rear sight leaf (see note above).



NOTE

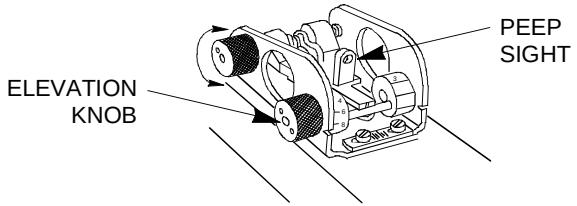
To make the peep sight easier to grasp, rotate the elevation knob (rear knob) to the "10" (1000 meter) mark. After you make your adjustment, move the elevation knob back to where you started.

NOTE

Each sight may vary as to how many clicks are needed to center the sight. To check your sight, start with the peep sight post all the way to the top; counting the clicks, screw it down as far as it will go. Divide this number of clicks by two and move peep sight up to center - example: 13 clicks = 7 to center (6 + 7 = 13, use larger figure).

To field zero your machine gun in elevation, you must center your peep sight (see note above).

FIELD ZERO (Cont)



Rotate the elevation knob (rear knob) to the desired range. Fire a 3-5 round burst on the center of your target.

NOTE

Each number (3 to 10) on the elevation scale stand for 100 meters. The marks below "3" on the right hand scale are 500, 700 and 900 meters respectively.

NOTE

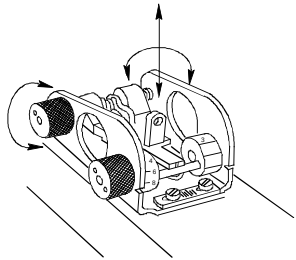
Each click of the windage knob (front knob) or the peep sight moves the sight 1/2 mil, and the group on the target 6 inches (15.24 centimeters) at 300 meters or 10 inches (25.4 centimeters) at 500 meters.

Make windage and elevation corrections as follows:

- To move group to right: Turn windage knob (front knob) counterclockwise (CCW).
- To move group to left: Turn windage knob (front knob) clockwise (CW).
- To raise the group: Turn peep sight counterclockwise (CCW).
- To lower the group: Turn peep sight clockwise (CW).

Fire another group. Repeat above procedures until zeroed.

FIELD ZERO (Cont)



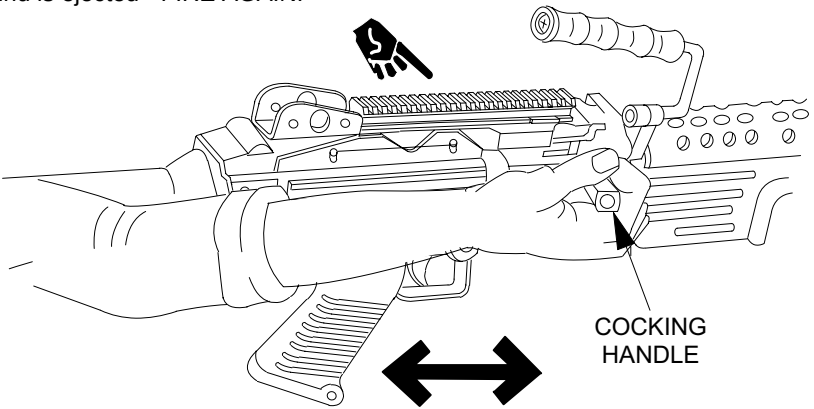
NOTE

If the weapon cannot be zeroed in elevation, and the peep sight is screwed all the way In or out, notify your unit armorer for a front sight post adjustment. Center your peep sight in elevation and fire a burst of 3-5 rounds for a shot group. Tell your unit armorer the estimated adjustment required to bring the weapon on target.

IMMEDIATE ACTION.

The weapon stops firing, take immediate action. Charge weapon and push cocking handle forward until you hear it click.

If a round is ejected - FIRE AGAIN.



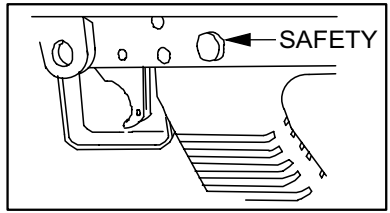
IMMEDIATE ACTION (Cont).

WARNING

IF NOTHING IS EJECTED AND BARREL IS HOT DO NOT OPEN THE COVER, PUSH SAFETY TO RIGHT (RED BAND NOT VISIBLE). KEEP MACHINE GUN POINTED DOWN RANGE, AND REMAIN CLEAR FOR 15 MINUTES. AFTER 15 MINUTES, CLEAR YOUR WEAPON (PGS. 2-16 THRU 2-18).

NEVER OPEN THE COVER OF WEAPON IF THE BARREL IS HOT AND YOU SUSPECT THERE IS A LIVE ROUND IN CHAMBER.

ALWAYS LOOK INTO CHAMBER AFTER CLEARING WEAPON.



If nothing is ejected, and belted ammunition is being used, look to see if any rounds remain on the feed tray assembly. If not, you have run out of belted ammunition. If the barrel is not hot, clear the weapon.

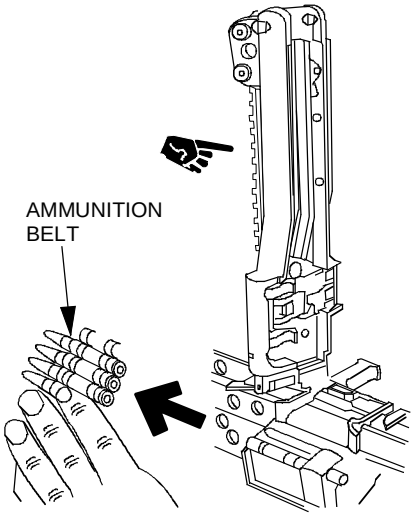
IF IMMEDIATE ACTION DOESN'T WORK.

Be sure weapon is cleared.
Check for:

- Obstructions
- Lubrication
- Dirt
- Damaged parts

Take corrective action as required.

Reload, and fire again.

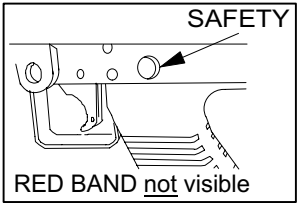


STUCK CARTRIDGE CASE OR LIVE ROUND.

WARNING

STAY CLEAR OF MUZZLE. DO NOT ALLOW ROUND TO HIT ANY HARD SURFACE OR IT MAY FIRE. DISPOSE OF LIVE ROUND IN ACCORDANCE WITH LOCAL REGULATIONS.

NEVER REMOVE A HOT BARREL TO CLEAR A MALFUNCTION. WAIT 15 MINUTES FOR BARREL TO COOL.



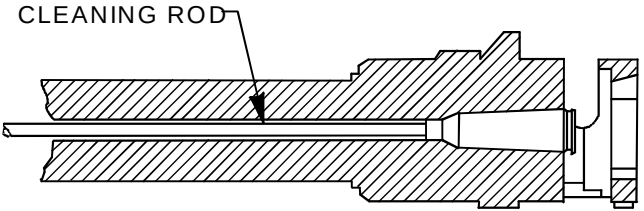
If it did fire and didn't extract, you have a stuck cartridge case, If weapon can be charged, do so, Push safety to right (RED BAND not visible). Remove barrel (p 2-33).

CAUTION

IF YOU TRY TO CHARGE THE WEAPON AND THE COCKING HANDLE WILL NOT UNLOCK THE BOLT, DO NOT TRY TO FORCE THE COCKING HANDLE TO THE REAR WITH YOUR FOOT OR A HEAVY OBJECT. THIS CAN DAMAGE THE WEAPON.

NOTE

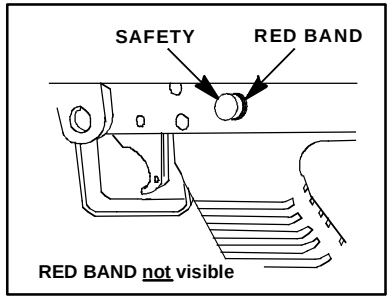
Barrel must be removed to perform stuck cartridge case removal.



STUCK CARTRIDGE CASE

Assemble cleaning rod without swab holder. Insert rod through muzzle end of barrel. Gently tap out stuck cartridge case.

STUCK CARTRIDGE CASE OR LIVE ROUND (Cont)



If it didn't fire and didn't extract, you have a stuck live round. If weapon can be charged, do so.

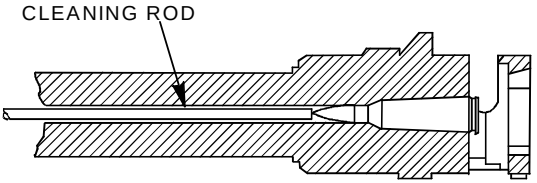
Push safety to left (RED BAND visible). Pull trigger if it still doesn't fire, wait until barrel is cool (approximately 15 rein). If weapon can be charged, do so, and push safety to right (RED BAND not visible). Remove barrel (p 2-33).

WARNING

IF YOU TRY TO CHARGE THE WEAPON AND THE COCKING HANDLE WILL NOT UNLOCK THE BOLT, DO NOT TRY TO FORCE THE COCKING HANDLE TO THE REAR WITH YOUR FOOT OR A HEAVY OBJECT. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE THE WEAPON.

NOTE

Barrel must be removed to perform live round removal.



Assemble cleaning rod without swab holder. Insert rod through muzzle end of barrel. Gently tap out live round.

The weapon must be treated as though it has a live round in the chamber if the bolt is locked and it cannot be charged. If you experience this condition, notify unit maintenance.

RUNAWAY MACHINE GUN

If runaway occurs (weapon won't stop firing), take action to correct it quickly.

WARNING

ALWAYS KEEP MACHINE GUN POINTED DOWNRANGE.

Take either of the following actions:

1. Let weapon continue firing if near end of link belt or magazine capacity

2. Grab cocking handle (palm up), pull all the way back and hold. Push safety to right (RED BAND not visible); raise cover, remove link belt or magazine.

WARNING

NEVER RELOAD A RUNAWAY WEAPON UNTIL IT IS REPAIRED. BE SURE WEAPON IS CLEARED.

Notify unit maintenance for repairs.

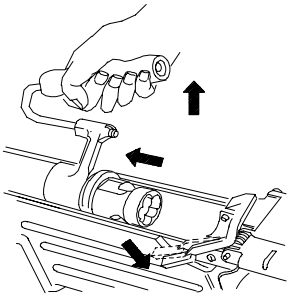
NOTE

When the barrel is removed or installed the bolt must be locked to the rear with the safety pushed to the right (RED BAND <u>not</u> visible).

REMOVE:

Clear weapon. Depress the barrel locking lever with left hand. Hold the carrying handle with right hand, lift it up and push the barrel forward (p 2-25). If barrel is hot, handle carefully.

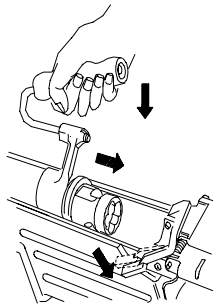
NEW STYLE
BARREL SHOWN



INSTALL:

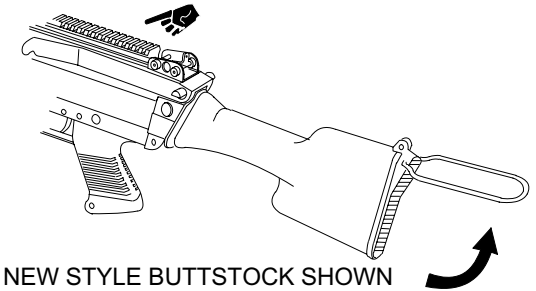
Depress the barrel locking lever with the left hand. Holding the carrying handle with the right hand, pull the barrel rearward, and down, and lock by releasing barrel locking lever (p 3-54). Reload.

NEW STYLE
BARREL SHOWN



SHOULDER REST AND BIPOD POSITIONING.

When shoulder rest firing is required, pull shoulder rest to the rear and up. Shoulder rest is secure when it snaps into notches at the top of the buttstock.



NEW STYLE BUTTSTOCK SHOWN

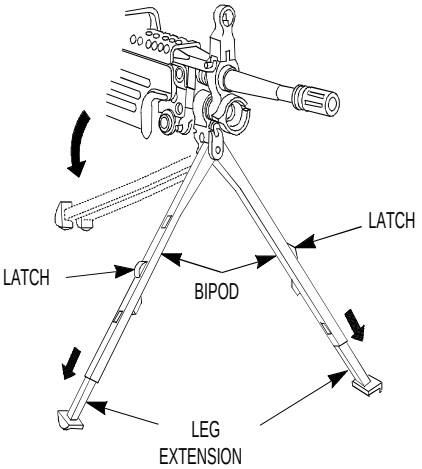
SHOULDER REST AND BIPOD POSITIONING (Cont)

To operate the weapon from the bipod, hold the legs together and pull them down from the handguard. Release the legs so that they lock in the vertical position.

warning

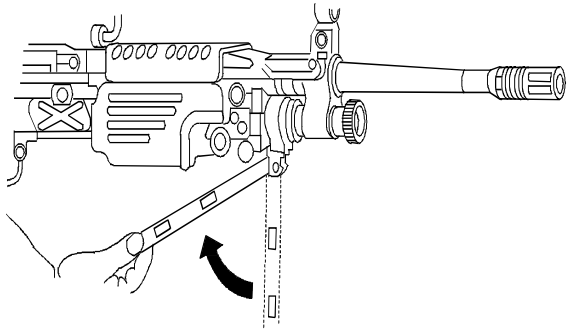
spring pins that protrude on inside of bipod legs can cause injury.

To extend bipod legs, push in on the latches and slide legs out.



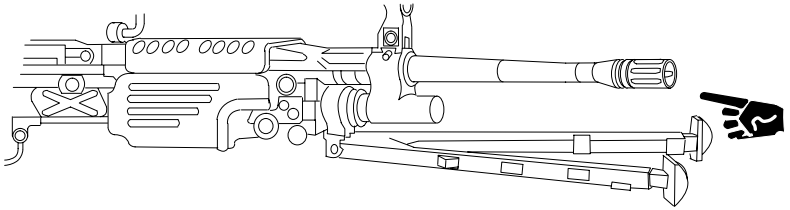
SHOULDER REST AND BIPOD POSITIONING (Cont)

The bipod can be folded for transport or when firing from the hip. Holding the two legs together, bring them back under the handguard and release them so that the hooks of the legs grip the handguard. The bipod can only be folded when the legs are in the closed position.



Folding of bipod under the handguard.

To fold the bipod forward, hold the two legs together and bring them up under the barrel. When released they will lock into position. The purpose of positioning the legs forward is to allow the weapon to be used on tripods and other mountings.



POSITIONING OF THE LEGS FORWARD

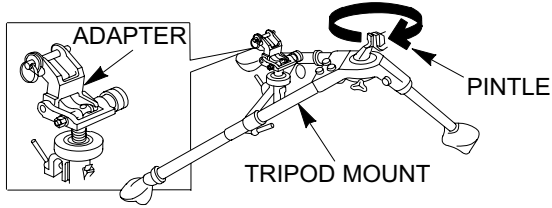
2-3. OPERATION OF AUXILIARY EQUIPMENT: TACTICAL/TRAINING.

2-4. TACTICAL EQUIPMENT.

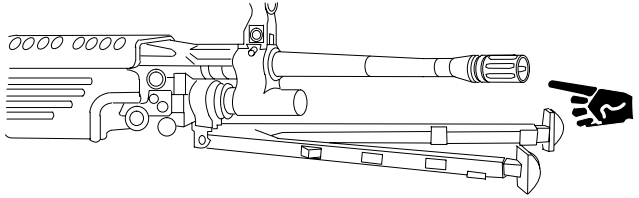
2-5. TRIPOD MOUNT, M122 W/ADAPTER ASSEMBLY WHEN USED IN THE LMG ROLE.

The weapon can be fitted on the Tripod Mount, M122, by means of a special adapter.

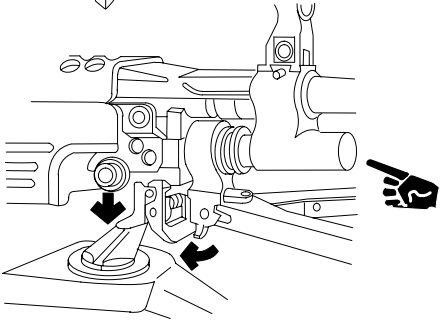
- Assure release lever of the pintle is forward.
- Assure Adapter Assembly yoke is rearward.
- Adjust elevation ring of T&E mechanism to midway.



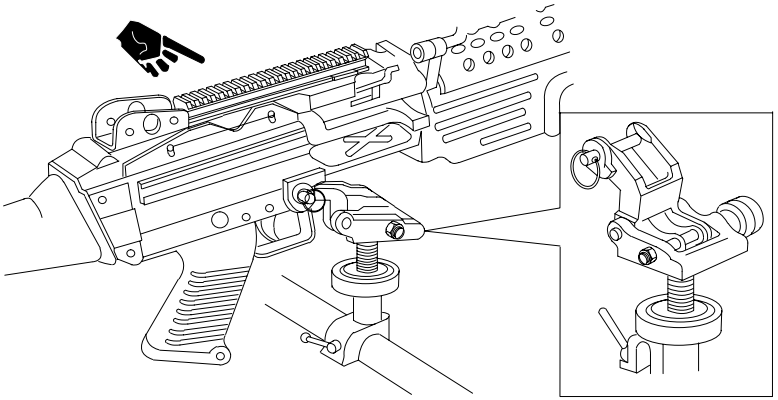
Extend Bipod forward.



Engage the mounting pin of the gun into the pintle of the tripod by squeezing the locking lever of the pintle.



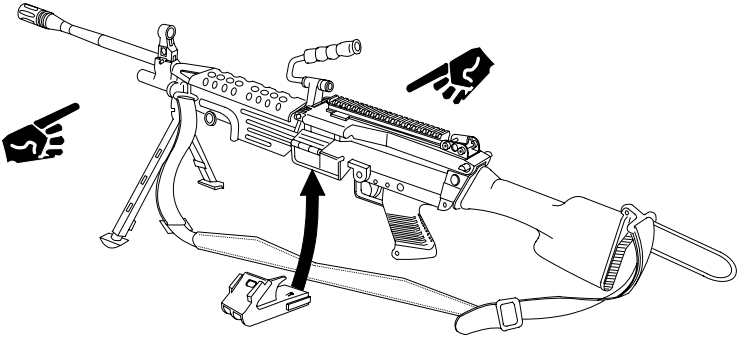
2.5. TRIPOD MOUNT, M122 W/ADAPTER ASSEMBLY WHEN USED IN THE LMG ROLE (Cont).



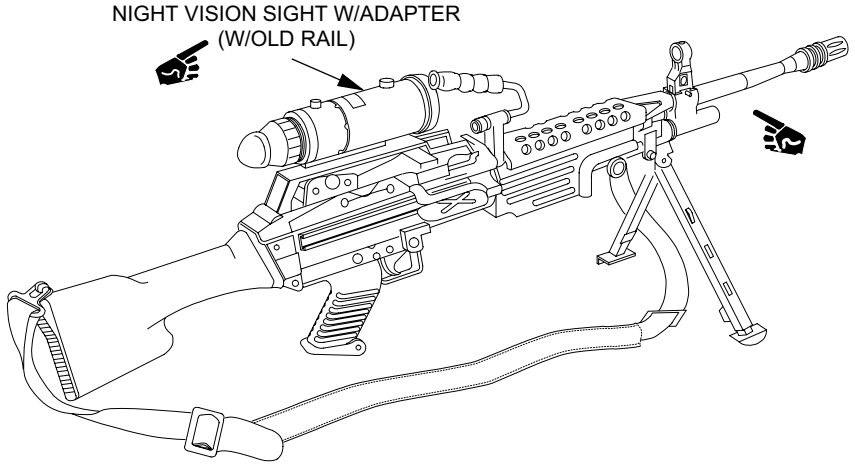
Above the trigger guard there is a hole thru the trigger mechanism. Engage this part of the machine gun into the fork of the Adapter Assembly and push in the Locking Pin.

When mounted on the tripod, ammunition can be attached to the weapon using an adapter.

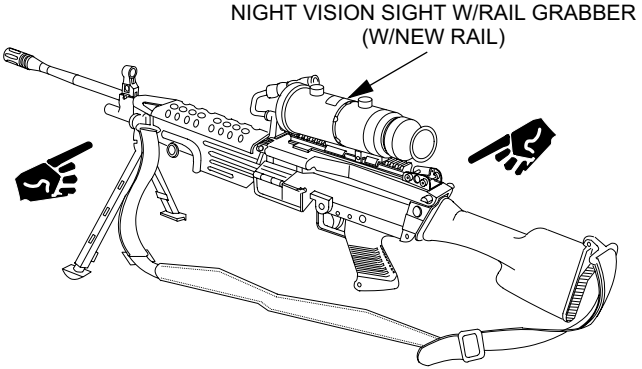
- Insert adapter in magazine well.
- Pull back on adapter to ensure its retention by the magazine door.



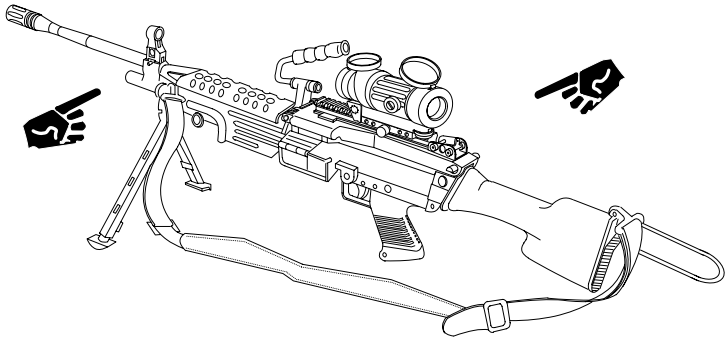
2-6. NIGHT VISION SIGHT, AN/PVS-4.



To mount the night vision sight, AN/PVS-4 refer to TM 11-5855-213-10.


NIGHT VISION SIGHT W/RAIL GRABBER
(W/NEW RAIL)

2-6.1. STRAIGHT TELESCOPE, M145.



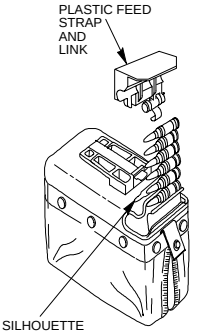
To mount the M145 Telescope refer to TM 9-1240-415-13&P.

2-7. LOADING 100 ROUND ASSAULT MAGAZINE

NOTE

The following instructions are for loading two reusable 100 round magazines

1. With canvas up, unzip 100-round magazine, remove the reusable plastic feed strap and attached link packed inside (these are spares and should be kept for future use). Note the silhouette of a cartridge on the inside of the plastic.



2. Remove 200-round ammo belt from disposable container. Determine the center point of the belt (holding the loose ends together) and by twisting, separate it into two belts of approximately equal length.

LOADING 100 ROUND ASSAULT MAGAZINE (Cont)

3. By twisting, remove the plastic feed strap and first link from the first cartridge. With the cartridges pointing as the silhouette depicts, insert several rounds from the inside of the magazine through the feed opening (the first cartridge will have no open link loops). Turn the magazine, plastic up, check for proper cartridge position as the silhouette depicts, and reattach the feed strap and link to the first cartridge.

4. Using moderate pressure to overcome the spring force, push belt back into magazine until the feed strap seats into the feed opening.

5. Turn magazine canvas up and fold the ammo belt back and forth so that it fits inside the magazine, close the zipper, and secure the snap on the zipper pull.

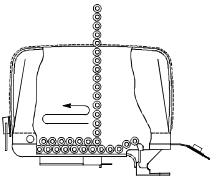
LOADING 100 ROUND ASSAULT MAGAZINE (Cont)

6. The reusable 100 round magazine is now ready for use and for attachment to the weapon, refer to page 2-13.
7. To load the second magazine, repeat step one.

8. With the cartridges pointing as the silhouette depicts, insert several rounds from the inside of the magazine through the feed opening (the first cartridge will have no open link loops). Turn the magazine, plastic up, and attach the supplied feed strap and link to the first cartridge.

9. Follow the procedures in steps four and five above.

10. After use, save feed strap and attached link for future use.

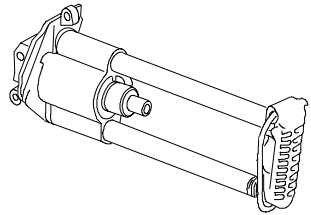


2-8. STOCK, GUN, SHOULDER: M5

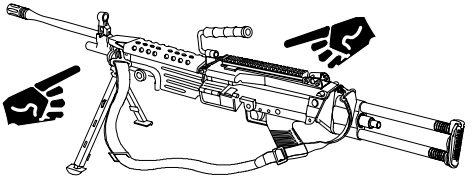
The weapon can be fitted with a collapsible buttstock which can shorten the overall length of the machine gun. The type of units principally using the M5 are airborne, air assault and etc.

- **Remove conventional buttstock and buffer assembly following the field strip procedures starting on page 3-18**.

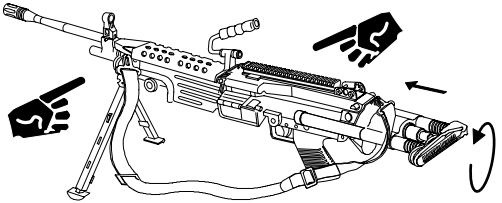
- **Assure the M5 is locked in the extended position.**



Reassemble the weapon, with the M5, following the instructions beginning on page 3-49.



To shorten the overall length of the weapon, pull back on buttplate, twist to the left (counter clockwise), and push buttplate fully forward.



2-9. MOUNT PEDESTAL, MACHINE GUN, M6 AND MOUNT, MACHINE GUN, M197 FOR M998 HMMWV.

The weapon can be mounted on a M998 High Mobility Multipurpose Wheeled Vehicle (HMMWV) (Cargo/Troop Carrier).

WARNING

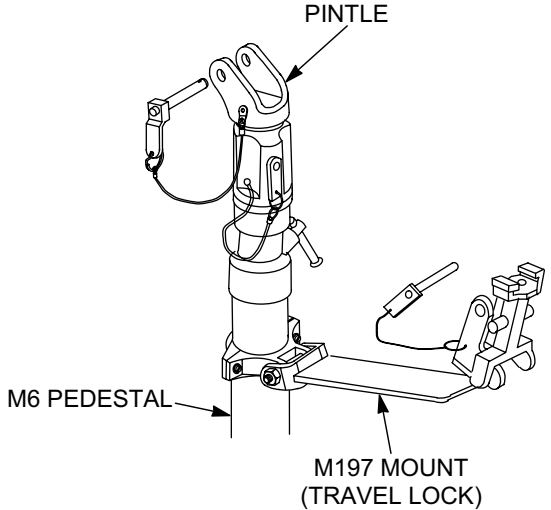
The canvas cover above the driver and passenger seats should always be in place when firing.

Firing on-the-move is not permitted from the M998.

Ground personnel should not be within 10 meters of the vehicle when firing.

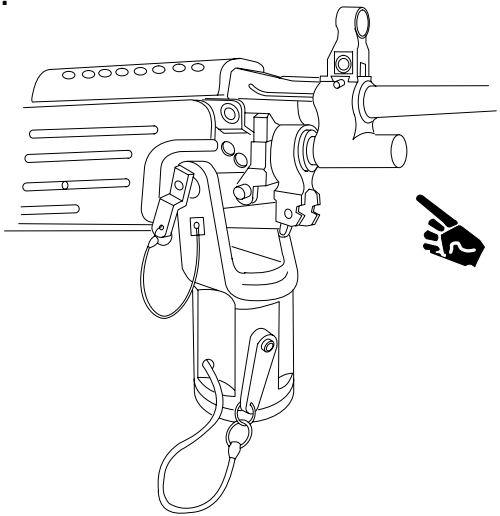
All personnel within 30 meters of a weapon firing, shall wear approved single hearing protection devices during training exercises.

- Assure clevis of pintle assembly slants to the rear.

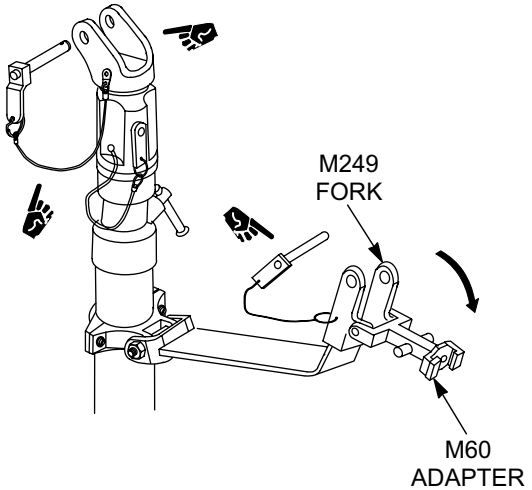


2-9. MOUNT PEDESTAL, MACHINE GUN, M6 AND MOUNT, MACHINE GUN, M197 FOR M998 HMMWV (Cont).

- Place weapon in clevis aligning the mounting holes forward of the handguard with the holes in the clevis and secure with quick release pin.

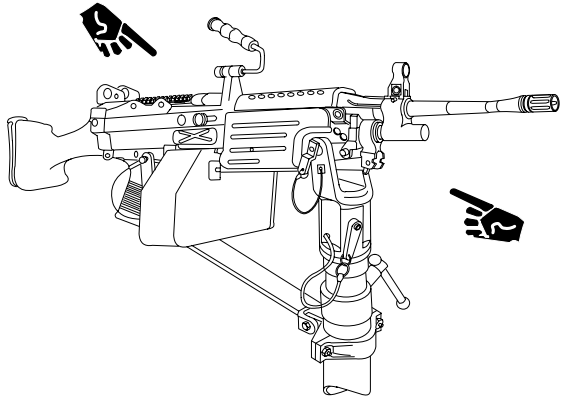


- Assure M60 Machine Gun adapter assembly is pivoted away from the M249 fork (clevis).



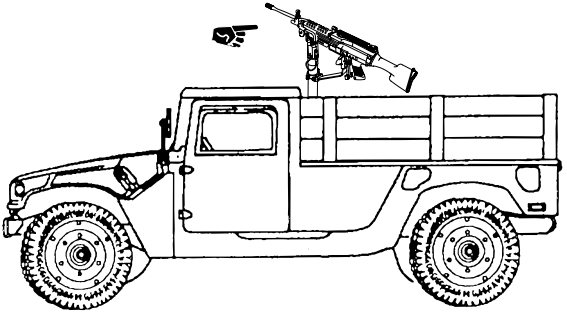
2-9. MOUNT PEDESTAL, MACHINE GUN, M6 AND MOUNT, MACHINE GUN, M197 FOR M998 HMMWV (Cont).

- Above the trigger guard there is a hole thru the trigger mechanism. Engage this part of the machine gun into the fork of the mount and push in the locking pin.



CAUTION

WHEN THE WEAPON IS NOT IN USE IT SHOULD BE REMOVED FROM THE PEDESTAL OR SECURED BY THE TRAVEL LOCK.



NOTE

For mounting instructions of M6 and M197 Mounts in M998 HMMWVs refer to TM 9-1005-245-13&P.

2-10. MOUNT, MACHINE GUN, M197 FOR M1025/M1026.

The weapon can be mounted on a M1025 or M1026 High Mobility Multipurpose Wheeled Vehicle (HMMWV) (Armament Carrier).

WARNING

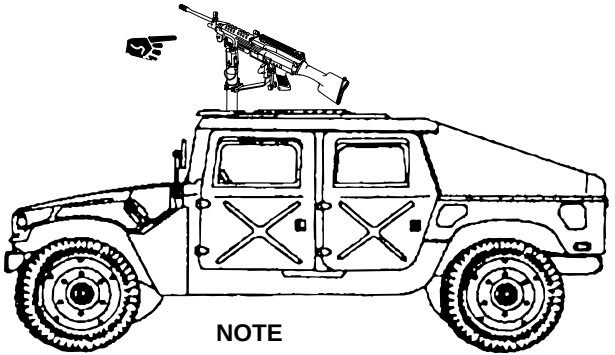
GROUND PERSONNEL SHOULD NOT BE WITHIN 10 METERS OF THE VEHICLE WHEN FIRING.

FIRING ON-THE-MOVE IS RESTRICTED TO 5 MILES PER HOUR CROSS-COUNTRY AND 10 MILES PER HOUR ON IMPROVED ROADS WHEN MOUNTED ON M1025 AND M1026 HMMWVS (ARMAMENT CARRIERS).

CAUTION

WHEN THE WEAPON IS NOT IN USE IT SHOULD BE REMOVED FROM THE RING MOUNT OR SECURED BY THE TRAVEL LOCK.

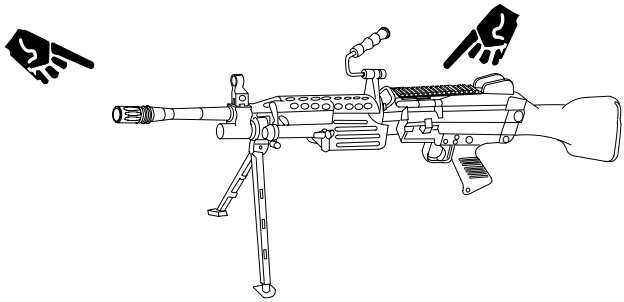
To mount the weapon, follow the mounting instruction/procedures, para. 2-9.



NOTE

For mounting Instructions of the M197 Mount In M1025/M1026 HMMWVs refer to TM 9-1005-245-13&P.

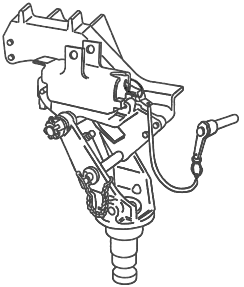
2-10.1 AN/PAQ-4B/C.



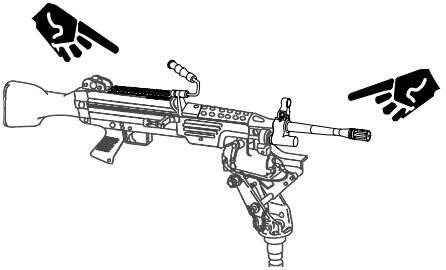
To mount the PAQ 4 refer to TM 11-5855-301-12&P.

2-10.2 ADAPTER, GUN MOUNTING.

The weapon can be mounted on the M142 Machine Gun Mount.

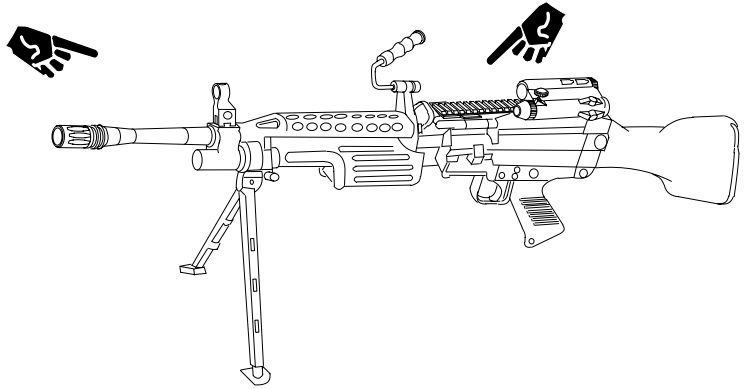


- Place the square locking bar at the rear of the adapter in the hook of the platform assembly.
- Engage the round mounting bar at the front of the adapter in the catch strike of the platform assembly.
- Place the weapon between the adapter upright, as shown and engage the locking pin from left side.



2-10.3 SHORT BARREL.

The weapon can be fitted with a short barrel which shortens the overall length of the machine gun. The type of units principally using the short barrel are airborne, air assault, and etc. (see M5 Buttstock).



2-11. TRAINING EQUIPMENT.

2-12. BLANK FIRING ATTACHMENT (BFA).

WARNING

USE ONLY BLANK M200 WITH THE BFA AND DO NOT FIRE DIRECTLY AT ANYONE LESS THAN 20 FEET AWAY.

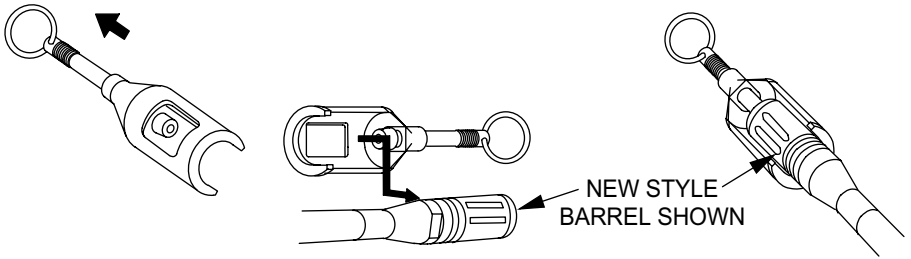
CAUTION

DO NOT USE TOOLS TO TIGHTEN ATTACHMENT, HANDS ONLY.

NOTE

Do not use M20 blank cartridges in the 30 round M16 Series Rifle magazine.

After 50 rounds, check to see if BFA is still tight.

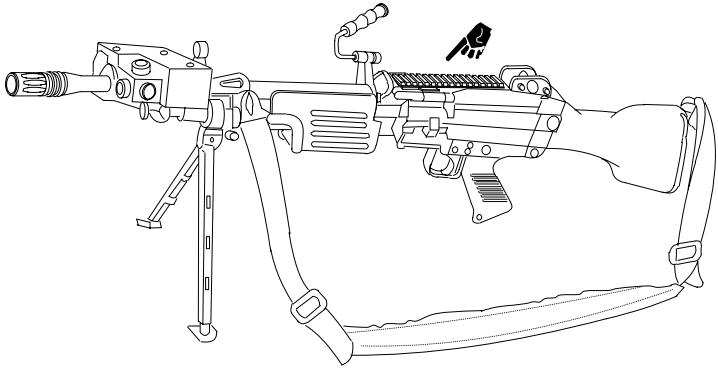


1. Unscrew the restrictor tube and slide it all the way back.

2. Hook in forward groove of compensator.

3. Slide restrictor tube in and hand tighten.

2-13. SIMULATOR SYSTEM, FIRING, LASER, M90 OF MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (MILES).



NOTE

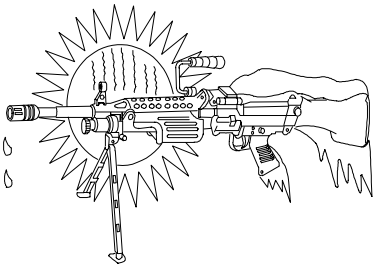
Prior to mounting the M90, it is necessary to remove the Heat Shield Assembly and temporarily stow it.

To mount the Simulator System, Firing, Laser M90 refer to TM 9-1265-211-10.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

2-14. ENVIRONMENT/WEATHER (Protective Measures).

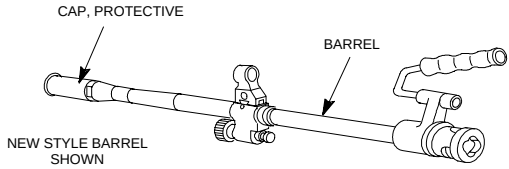
NOTE
See Lubrication Guide (p 3-1).



2-14. ENVIRONMENT/WEATHER (Protective Measures) (Cont).

warning

pay special attention to daily climate conditions as the ambient temperature rises, the potential for a hot weapon cookoff also rises.



For protection against water, sand, dirt, mud and ice, place Cap, Protective on the muzzle end of your weapon.

Do not remove linked ammunition from the 200 round container. Operation with free hanging linked ammunition will allow water, sand, dirt, mud, snow and ice to enter the weapon, causing feed problems.

Be sure weapon covers, such as the link ejection port cover, are closed when weapon is not in operation. This will prevent sand, dirt, mud and snow from entering the weapon.

Keep weapon covered when possible. This will prevent sand, dirt, snow and water from accumulating.

CAUTION

TO AVOID DAMAGE TO EQUIPMENT, DO NOT USE DRY CLEANING SOLVENT ON PLASTIC, SEALED BUFFERS, ETC.

During unusual conditions, it may be necessary to periodically flush out sand, mud and other debris from areas like the trigger assembly that you are not authorized to disassemble. Unit maintenance has the dry cleaning solvent (SD), NSN 6850-00-281-1985, that you can use.

1 EXPOSURE TO WATER-MUD

WARNING

ENSURE BARREL IS NOTOBSTRUCTED BY WATER OR MUD.

- Disassemble, clean, lightly lubricate and assemble as soon as possible.
- Make sure it is dry before lubricating.
- Generously lubricate external surfaces.

2 HOT - WET/SALT AIR

- Inspect more frequently for signs of rust.
- Keep gun as moisture-free as possible.
- Clear and lubricate as necessary to preserve the metal and prevent rust.

Use a generous second coat of lubrication on external surfaces for extra protection.

3. HOT - DRY - SAND - DUST.

NOTE

DO NOT lubricate the exterior metal surfaces, as this will only collect dust and sand.

- Clean in enclosed areas when possible, away from blowing sand and dust.
- Clean and lubricate only moving parts.
- Extreme heat dries up lubricant. Clean and lubricate more frequently.

4. COLD - ICE - SNOW.

- If possible, thoroughly clean, dry and lubricate the weapon in a warm, dry place.
- If weapon is brought indoors, keep it away from direct heat.
- Exercise weapon and lubricate daily to help prevent corrosion.
- If metal "sweats", dry and lubricate parts before taking weapon outdoors. Apply a light second coat of lubrication to provide protection.

2-15. DURING TRAINING WITH BFA.

- Thoroughly clean your weapon after each firing exercise. Blank ammunition builds up carbon faster than live ammunition.

- To ensure continued/proper weapon function, it is conceivable that thorough cleaning may be necessary after firing each 200 round magazine. If necessary, clean weapon before firing blank rounds.

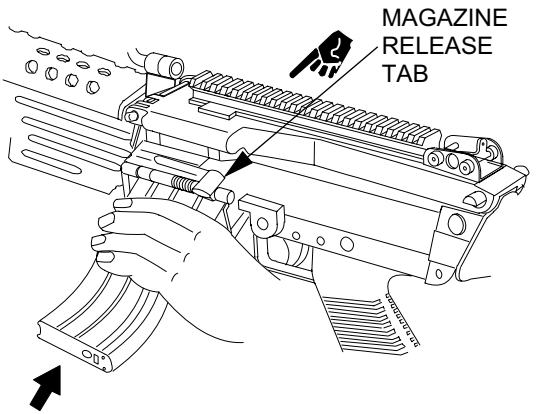
2-16. EMERGENCY PROCEDURES.

ALTERNATIVE FIRING MODE.

NOTE

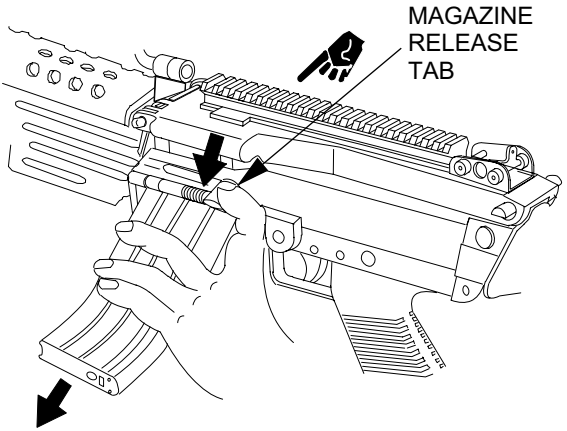
Firing from a M16 Series Rifle Magazine is authorized, in training, or emergency situations where belted ammunition is not available; however, the use of the 30 round magazine can effect reliability. The frequency of malfunction/stoppage can increase using this configuration.

When belted ammunition is not available or is not suitable for tactical operations, the 30 round M16 Series Rifle Magazine may be loaded by inserting it into the magazine well on the left side of the receiver and pushing it slowly to the right until it bottoms in the well and release tab "clicks" into recess in magazine. After magazine engages, pull back slightly to properly seat magazine and to assure magazine is not inserted too far into the receiver.



ALTERNATE FIRING MODE (Cont).

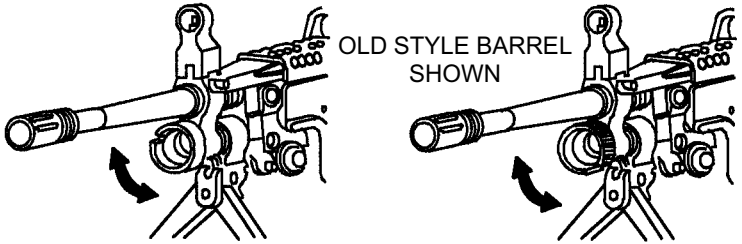
To continue with magazine feeding or to return to belt feeding, push down on magazine release tab and pull out magazine. Raise cover assembly.



RATE OF FIRE SELECTION.

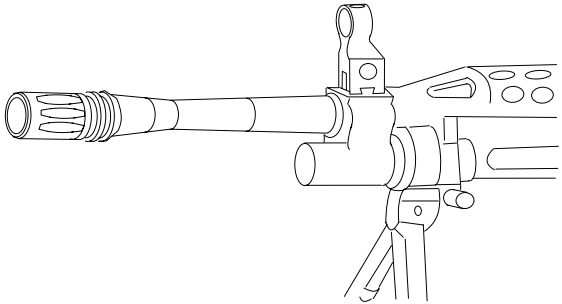
NOTE

Old style barrel does not have the capability of changing/ switching the gas regulator to deliver more power. Rotating the gas collar will not affect cyclic rate.



RATE OF FIRE SELECTION (Cont).

NOTE
Integral gas collar and gas regulator have no parts to disassemble.



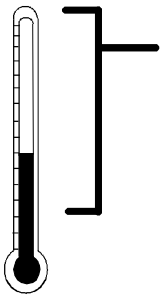
CAUTION

IF FOR ANY REASON THE TRIGGER MECHANISM HAS BEEN REMOVED FROM THE WEAPON WITHOUT FURTHER FIELD STRIPPING, BE SURE THAT THE SAFETY IS PUSHED LEFT (RED BAND VISIBLE) PRIOR TO REINSTALLING THE MECHANISM IN THE RECEIVER, BECAUSE IF THE SAFETY IS NOT OFF AND THE OPERATOR CHARGES THE WEAPON, DAMAGE CAN OCCUR TO THE PISTON ROD ASSEMBLY AND/OR SEAR.

CHAPTER 3
MAINTENANCE INSTRUCTIONS
Section I. LUBRICATION INSTRUCTIONS

3-1. LUBRICATION GUIDE

Cleaner, Lubricant and Preservative (CLP) is the only lubricant to use on your weapon. Remember to remove excessive lubricant from the bore before firing.



CLP - Grade 2 is used for all temperatures

Lightly Lubricate – A film of oil barely visible to the eye.

Generously Lubricate – Heavy enough so that it can be spread with finger.

NOTE

CLP will provide required lubrication at temperatures between 0°F and -35°F (-19°C and -37°C).

However, if 1/2 oz. bottle is stowed where temperatures reach 0°F (-19°C) or lower, bottle becomes rigid and hard to dispense CLP.

3-1. LUBRICATION GUIDE (Cont).

Disassemble, clean, lubricate and reassemble as often as required.

Section II. TROUBLESHOOTING PROCEDURES

3-2. TROUBLESHOOTING.

a. The table lists the common malfunctions which you may find during the operation or maintenance of the weapon or its components. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed – corrective actions, notify unit maintenance.

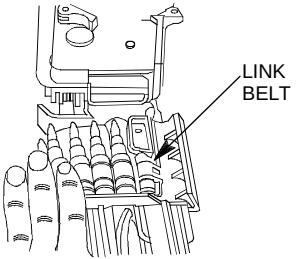
TROUBLESHOOTING TABLE

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. SLUGGISH OPERATION	Dirty receiver	Clean and lubricate
	Lack of lubricant	Lubricate
	Carbon buildup in gas system	Clean gas regulator, piston and cylinder

TROUBLESHOOTING TABLE (Cont)

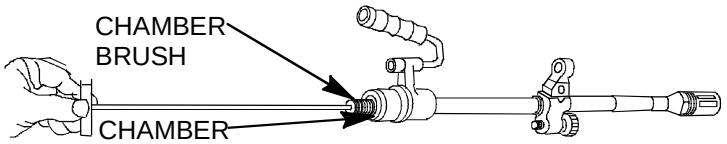
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
2. FAILURE TO FEED	Insufficient lubrication	Lubricate as required
	Defective ammunition Links	Remove defective ammunition, install new ammunition
	Obstruction in receiver	Remove obstruction
	Insufficient gas pressure	Clean gas regulator, piston and cylinder
	Unlatched cover	Latch cover

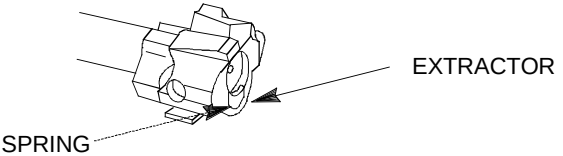
TROUBLESHOOTING TABLE (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
2. FAILURE TO FEED (Cont)	Long/Short rounds	Aline rounds in link belt.
		
	Inverted link belt	Reinstall link belt with open end of link facing down.
	Damaged, weak, or worn operating parts.	Notify unit maintenance.

TROUBLESHOOTING TABLE (Cont)

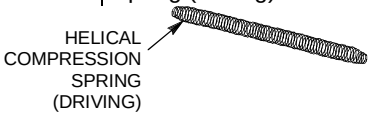
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
3. DOUBLE FEED	Dirty ammunition or chamber.	Clean ammunition and/or chamber
	Broken extractor/spring	Notify unit maintenace.





TROUBLESHOOTING TABLE (Cont)

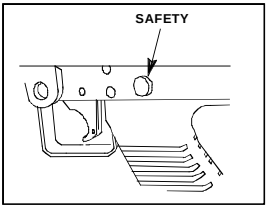
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
4. FAILURE TO CHAMBER	Dirty ammunition	Clean ammunition
	Carbon build up in gas system.	Clean gas regulator, piston, and cylinder. If problems still exist, notify unit maintenance.
	Carbon build up in receiver	
	Damaged round	Remove round and re charge weapon
	Damaged or weakened helical compression spring (driving)	Notify unit maintenance



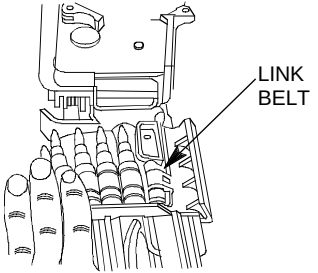
TROUBLESHOOTING TABLE (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
4. FAILURE TO CHAMBER (Cont)	Dirty chamber	Clean chamber.
	Damaged gas regulator	Notify unit maintenance

TROUBLESHOOTING TABLE (Cont)

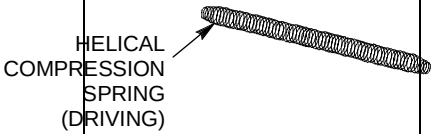
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5. FAILURE TO FIRE	Safety on	Push SAFETY to left RED BAND visible). 

TROUBLESHOOTING TABLE (Cont)

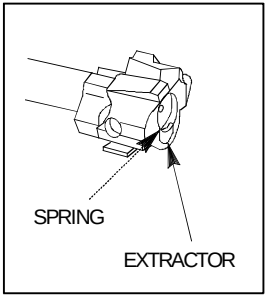
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5. FAILURE TO FIRE (Cont)	Link belt improperly loaded  	Remove and install link belt properly.
	Faulty ammunition	Eject round. Replace ammunition.

TROUBLESHOOTING TABLE (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5. FAILURE TO FIRE (Cont)	Broken or damaged firing pin	Notify unit maintenance.
	Broken or weakened helical compression spring (driving)	Notify unit maintenance

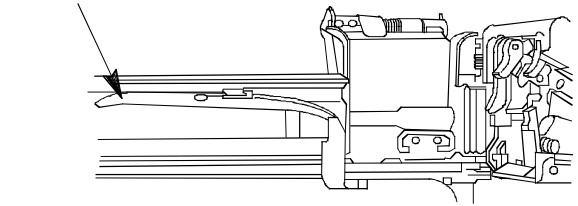


TROUBLESHOOTING TABLE (Cont)

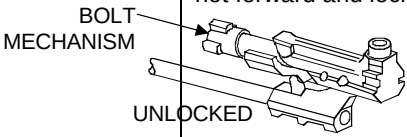
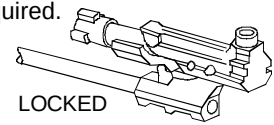
MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
6. FAILURE TO EXTRACT 	Inspect for stuck cartridge case.	Follow instructions on page 2-28.
	Dirty chamber/bolt and slide assembly	Clean chamber and/or Clean bolt and slide assembly. If problem still existsnotify unit maintenance.
	Carbon buildup in gas system	Clean gas regulator, cylinder, and piston.
	Damaged extractor/spring	Notify unit maintenance,

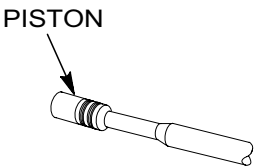
TROUBLESHOOTING TABLE (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
7 FAILURE TO EJECT	Short recoil	Clean and lubricate bolt and slide assembly. If problem still exists notify unit maintenance.
	Damaged ejector/spring	Notify unit maintenance
	Carbon buildup in gas system	Clean gas regulator, piston, and cylinder

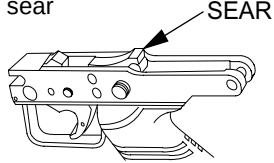
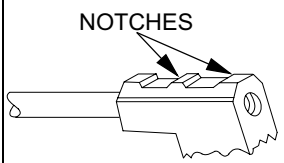


TROUBLESHOOTING TABLE (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
8 STOP FIRING	Defective round in Chamber 	Eject round
	Bolt slide assembly not forward and lock 	Remove obstruction or clean and lubricate as required. 
	Primer dented but not fired	Eject round. If this occurs more than once, it may be caused by faulty ammunition or a worn firing pin. Notify unit maintenance.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
8. STOPS FIRING (Cont)	Sticking feed mechanism	Clean and lubricate feed mechanism. If problems still exist, notify unit maintenance.
	Carbon buildup in gas system	Clean gas regulator, piston, and cylinder. If problems still exist, notify unit maintenance.
	Short recoil 	Clean gas regulator (do not lubricate). Clean and properly lubricate bolt and piston assembly (see paragraph 3-4, Cleaning, Inspection, and Repair). If problems still exist, notify unit maintenance.
	Bolt jammed in barrel socket	Notify unit maintenance

TROUBLESHOOTING TABLE (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
9. FAILURE TO COCK OR RUNAWAY WEAPON	Broken, worn, or burred sear 	Notify unit maintenance
	Piston assembly sear notch worn 	Notify unit maintenance

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
9. FAILURE TO COCK OR RUNAWAY WEAPON (Cont)	Sear stuck in trigger housing	Notify unit maintenance
	Short recoil	Clean and lubricate bolt and slide assembly
	Carbon buildup in gas system	Clean gas regulator, piston and cylinder
10. FAILURE TO LOCK IN OPEN BOLT POSITION	Safety fails to slide properly	Notify unit maintenance

SECTION III. MAINTENANCE PROCEDURES

3-3. FIELD STRIPPING (DISASSEMBLY).

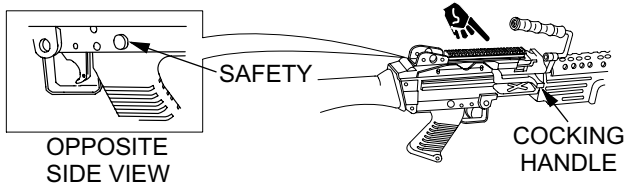
Clear the weapon (p 2-16 thru 2-18).

WARNING

BE SURE BOLT IS IN FORWARD POSITION BEFORE REMOVING RETURN ROD AND TRANSFER MECHANISM ASSEMBLY AND SPRING.

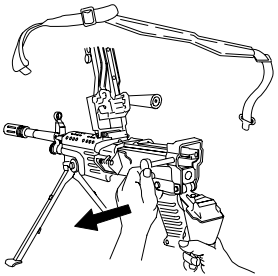
NOTE

If the moving parts are situated at the rear, push safety to left (RED BAND visible), hold cocking handle with one hand, press trigger and, with hand on cocking lever, ride the moving parts slowly forward.



SLING AND SNAP HOOK ASSEMBLY REMOVAL

Squeeze the latch on the snaphook and remove the hook from the buttstock and receiver fore-end. Separate sling and snaphook assembly.



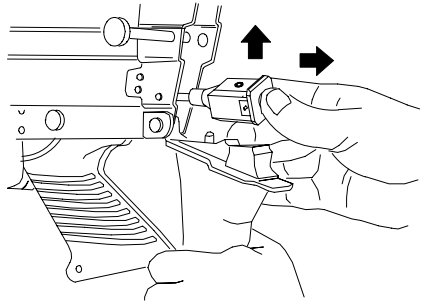
DRIVE SPRING AND RETURN ROD AND TRANSFER MECHANSIM ASSEMBLY REMOVAL

Raise cover assembly. Pull the upper retaining pin at the rear of the receiver to the left. Let the buttstock and buffer assembly pivot downward so that the rear opening on the receiver is completely free.

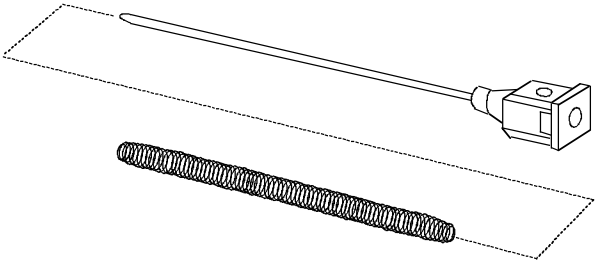
DRIVE SPRING AND RETURN ROD AND TRANSFER MECHANISM ASSEMBLY

REMOVAL (CONT)

By holding weapon with one hand on the buttstock, simultaneously push in and upward on the rear end of return rod and transfer mechanism assembly with thumb of other hand. The return rod and transfer mechanism assembly is now released from positioning groove inside receiver. Withdraw the return rod and transfer mechanism assembly and spring.



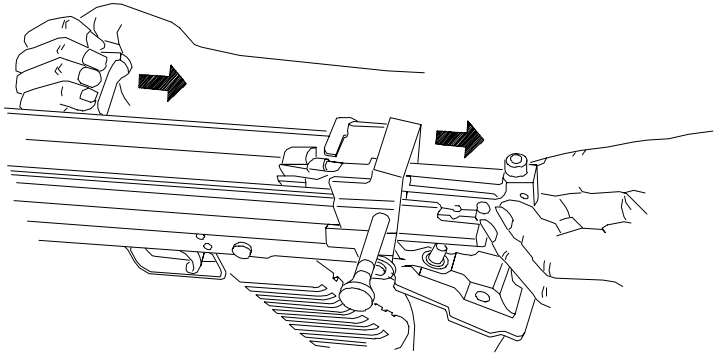
Separate spring from return rod and transfer mechanism assembly



MOVING PARTS (OPERATING ROD, SLIDE ASSEMBLY AND BOLT ASSEMBLY)

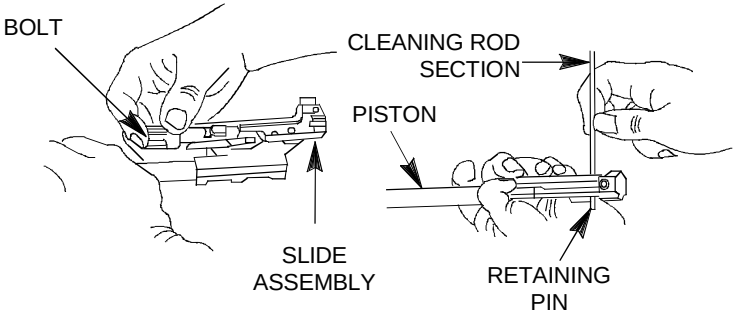
REMOVAL

Pull the cocking handle rearward.
Slide the moving parts out the rear of the receiver.



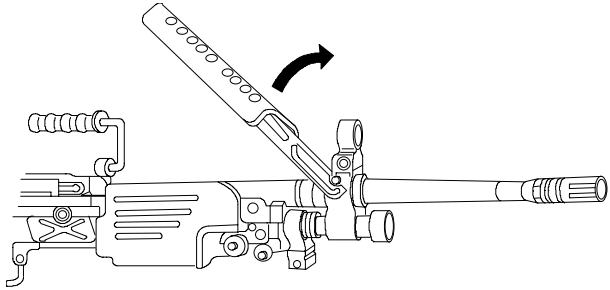
Rotate the bolt clockwise to disengage the lug and pull it out of the slide assembly

To separate slide assembly from the piston assembly, press the retaining pin to the left, using a cleaning rod section and lift off the slide assembly.



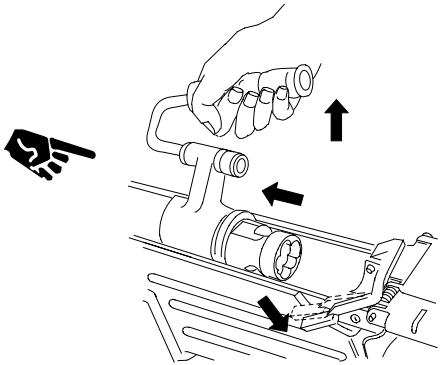
HEATSHIELD REMOVAL

While holding weapon, grasp the heatshield just forward of the barrel handle and lift it off the barrel.



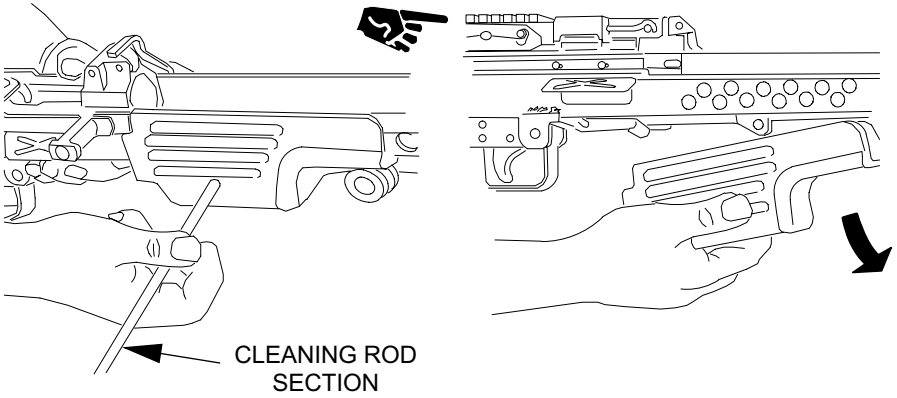
BARREL REMOVAL.

Close cover. Assure folding handle on barrel is in carrying (up) position. Depress the locking lever of the barrel with left hand. Hold the carrying handle with the right hand, lift it up and push the barrel forward.



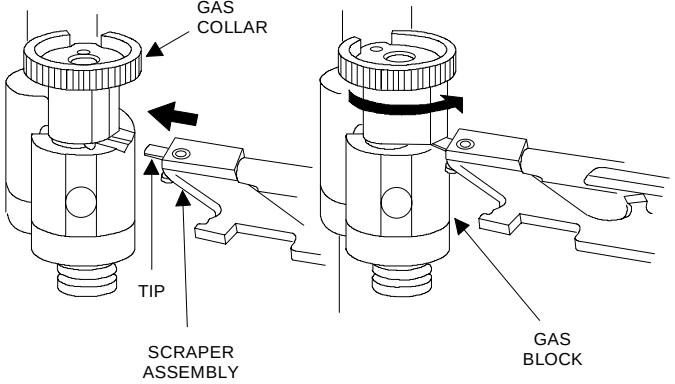
HANDGUARD REMOVAL.

Push handguard retaining pin to the left using cleaning rod section, then remove handguard downward.



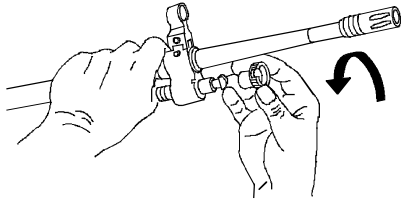
GAS REGULATOR REMOVAL

Position the gas collar to allow the scraper assembly to be installed. Place the tip (guide) of scraper assembly into the notch in the front left of gas block and hold guide firmly in notch.



GAS REGULATOR REMOVAL (Cont)

Holding the scraper assembly in position, turn the collar counterclockwise until the collar can be removed.

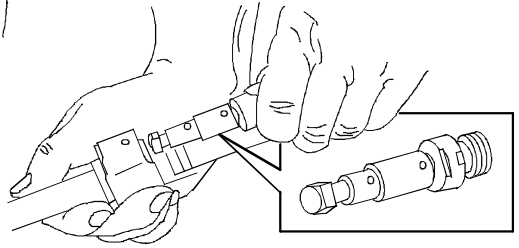


NEW STYLE BARREL SHOWN

NOTE

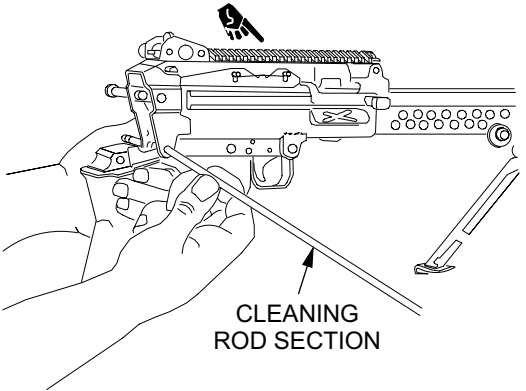
Position hand to prevent gas regulator from falling out.

Remove the gas regulator from the gas block.



BUTTSTOCK AND BUFFER ASSEMBLY REMOVAL.

Using cleaning rod section, push lower most retaining pin to the left. Remove buttstock and buffer assembly pulling it rearward while supporting trigger mechanism.



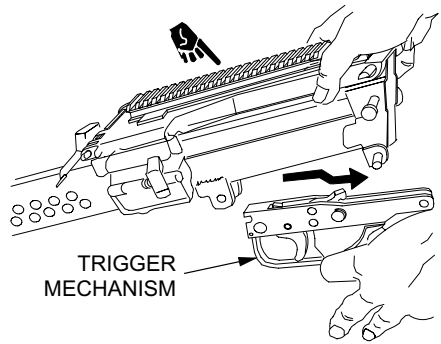
New style buttstock and buffer assembly shown.

TRIGGER MECHANISM REMOVAL.

WARNING

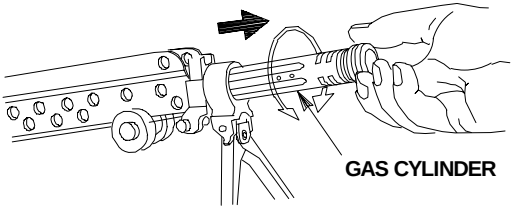
NEVER REMOVE TRIGGER MECHANISM BEFORE WEAPON IS CLEARED. REMOVAL OF THE TRIGGER MECHANISM FROM A LOADED WEAPON WILL CAUSE A RUNAWAY.

Remove trigger mechanism rearward and down.



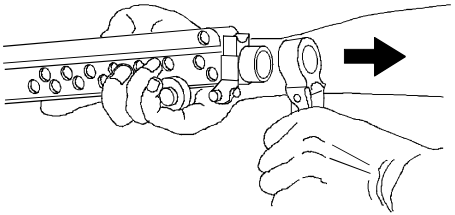
GAS CYLINDER REMOVAL

Turn gas cylinder to the left or right to release the locking spring, then pull out.



BIPOD REMOVAL

After removal of gas cylinder, the bipod can be separated from the receiver.



3-4. CLEANING, INSPECTION, AND REPAIR

WARNING

USING GASOLINE, KEROSENE, HYDRAULIC OIL, BENZENE, BENSOL, HIGH-PRESSURE WATER, STEAM, OR COMPRESSED AIR FOR CLEANING IS PROHIBITED.

CAUTION

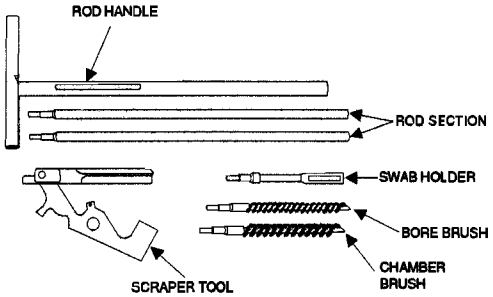
DO NOT USE ABRASIVES TO CLEAN THE BORE, PISTON, GAS CYLINDER, OR GAS REGULATOR PLUG.

NOTE

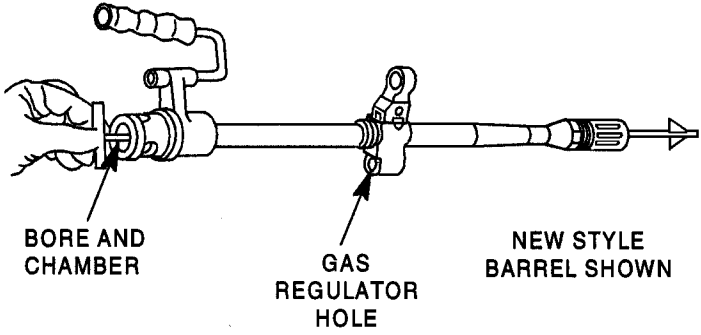
Do not remove extractor or extractor pin during cleaning.

CLEANING EQUIPMENT

The cleaning tools can be housed inside the handguard (p E1-E2). See appendixes C and D for ordering replacement items.



CLEANING, INSPECTION AND REPAIR (Cont)



CAUTION

DO NOT LUBRICATE CHAMBER AND GAS REGULATOR HOLE IN BARREL. DO NOT USE ABRASIVES TO CLEAN GAS REGULATOR, BORE AND CHAMBER.

CAUTION

BE SURE TO CLEAN YOUR BARREL BORE FROM THE BREECH END WITH BARREL REMOVED FROM WEAPON.

1. Inspect bore and chamber.

2. Wipe outside of barrel with lightly lubricated rag (item 13, app D). If heavy carbon deposits are present in the bore and/or chamber, clean with bore brush/chamber brush.

CLEANING, INSPECTION AND REPAIR (Cont).

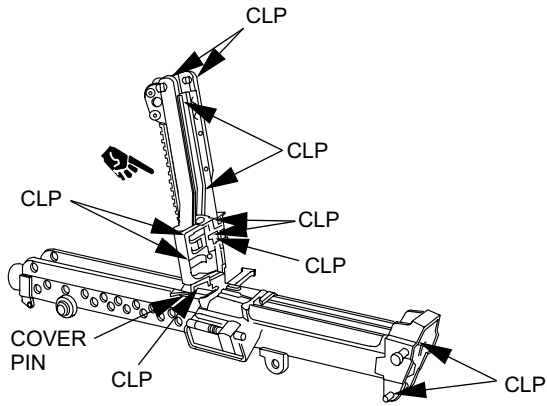
3. Inspect for cracks, dents, burrs, or other damage on flash suppressor (old style barrel) or compensator (new style barrel), barrel extension, and barrel release lever. Check front sight for looseness, if loose, notify unit maintenance.

NOTE

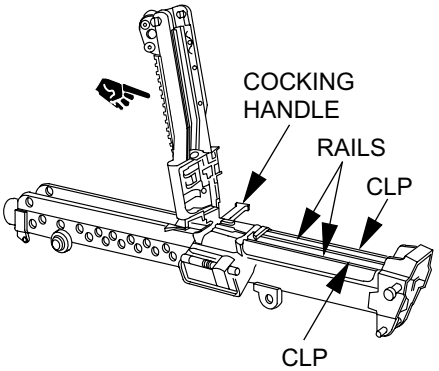
Use care when cleaning the cover and feed mechanism to avoid knocking the springs out.

4. Check cover assembly for smooth operation, spring tension, bent parts, or excessive wear.

"CLP" - Lightly lubricate moving parts.



5. Check for bends and cracks, free movement of cocking assembly, and excessively worn, burred, or chipped rails. Check barrel locking latch and cover detent springs for spring tension. Lightly lubricate all internal rails. Heavily lubricate exterior cocking handle rails.



CLEANING, INSPECTION, AND REPAIR (Cont).

6. Check for broken pistol grip, and chipped or cracked trigger housing holding lug.

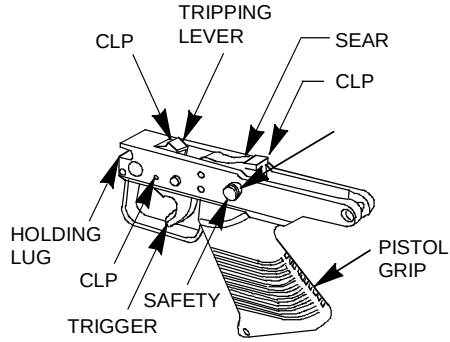
7. Check tripping lever and sear for burrs, cracks, chips, and wear.

8. Notify unit maintenance if problem exists.

9. Check cocking action by pushing back on tripping lever; sear will rise. Pull trigger; sear will lower. Push back on tripping lever.

10. Check safety function. When safety is pushed to right (RED BAND not visible), pull trigger; sear will not lower. When safety is pushed to left (RED BAND visible) pull trigger, sear lowers.

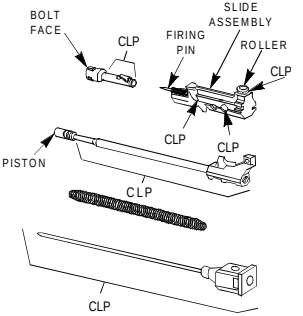
11. CLP-Lightly lubricate tripping lever and sear surfaces, ends of trigger pin, safety shaft, and sear pivot pin.



12. Check slide assembly, bolt assembly, piston assembly and return rod and transfer mechanism assembly, for burrs, cracks, or broken pins. Push down on roller of slide assembly to make sure it will retract. Check driving spring for broken strands. Notify unit maintenance if more than one broken strand is found on same coil or if more than two strands are broken regardless of location on entire spring.

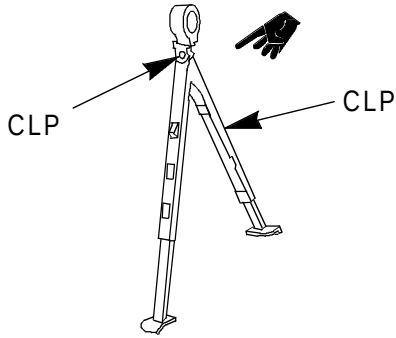
CLP-Lightly lubricate driving spring, return rod and transfer mechanism assembly, bolt assembly, piston assembly, slide assembly, moving parts, polished areas, firing pin, and roller.

CAUTION
DO NOT LUBRICATE PISTON OR BOLT FACE.

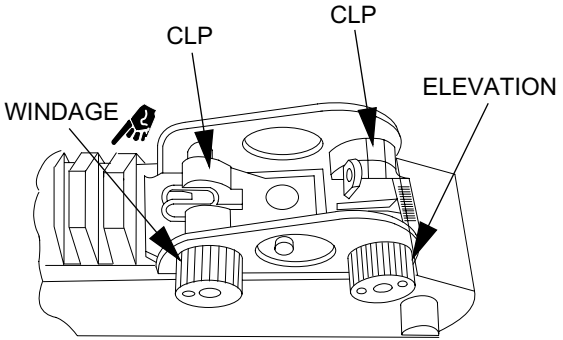


CLEANING, INSPECTION, AND REPAIR (Cont)

13. Clean and check bipod legs for operation; CLP-lightly lubricate. Notify unit maintenance if problem exists.



14. Clean and check the rear sight assembly for azimuth and elevation; CLP-lightly lubricate. If rear sight does not function properly, notify unit maintenance.



CLEANING, INSPECTION, AND REPAIR (Cont).

REGULATOR.

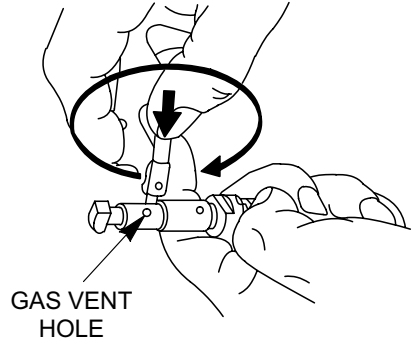
NOTE

New style barrel does not have a separate gas collar and gas regulator.

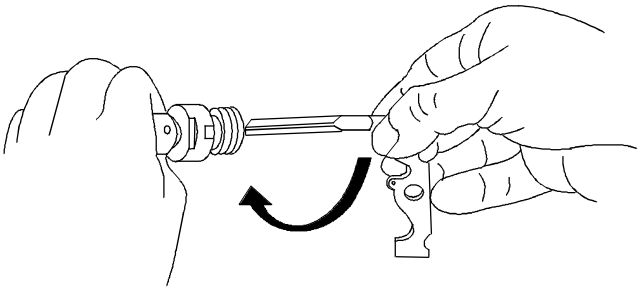
The regulator must be cleaned with the special tool (scraper).

Clean the gas vent hole of the regulator body as indicated.

The regulator body can be heavily carboned and will require more thorough cleaning.



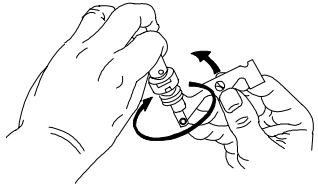
Clean the central hole of the regulator with the appropriate part of the scraper by turning it clockwise and pushing it inward to the bottom of the housing.



CLEANING, INSPECTION, AND REPAIR (Cont)

REGULATOR (Cont)

Use the protruding tips of the scraper to clean the two grooves of the regulator body. (Typical cleaning of one of two grooves.)



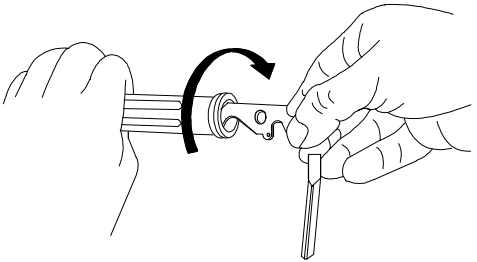
The regulator sleeve is generally not heavily carboned and can be easily cleaned with a rag.

CAUTION

DO NOT LUBRICATE REGULATOR

GAS CYLINDER

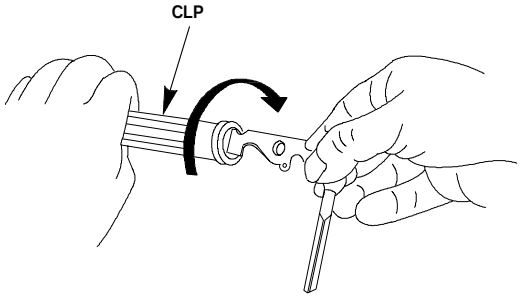
Clean the front of the cylinder (internal diameter) by inserting and turning the flat side of the scraper in the hole.



CLEANING, INSPECTION, AND REPAIR (Cont)

GAS CYLINDER (Cont)

Clean the internal grooves of the front side of the gas cylinder using the flat side of the scraper. Lightly lubricate exterior of gas cylinder only.

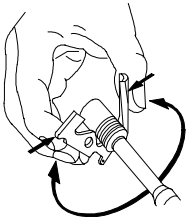


CAUTION

DO NOT LUBRICATE INTERIOR OF GAS CYLINDER

PISTON

The grooves of the piston will be cleaned as shown.



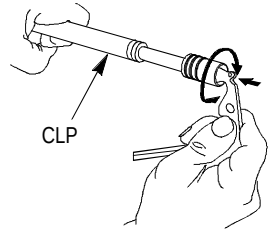
(Typical cleaning of one of three grooves.)

CLEANING, INSPECTION, AND REPAIR (Cont)

PISTON (Cont)

CAUTION
DO NOT LUBRICATE INTERIOR OR EXTERIOR OF PISTON.

Clean the hole on the front of piston with the same scraper part as the front hole of the gas cylinder. Lightly lubricate piston rod except piston.



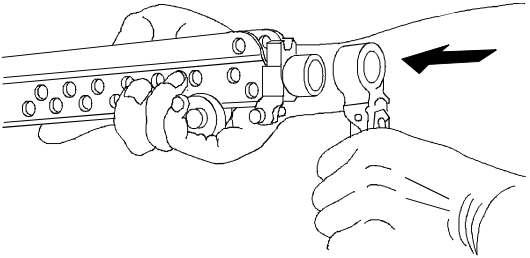
3-5. HOW TO PUT IT TOGETHER

BIPOD AND GAS CYLINDER

Place the bipod on the receiver.

NOTE

The receiver and bipod legs should be positioned as shown below.

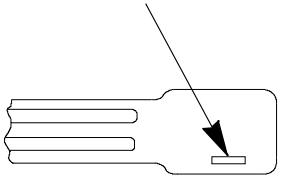


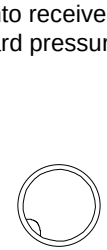
HOW TO PUT IT TOGETHER (Cont)

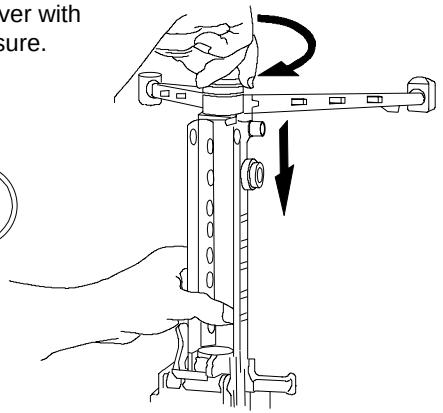
BIPOD AND GAS CYLINDER (Cont)

Push the gas cylinder through the bipod yoke into the receiver.

Push the cylinder to the rear while countering the pressure of the locking spring and guiding the end of the cylinder into receiver with the other hand applying downward pressure.



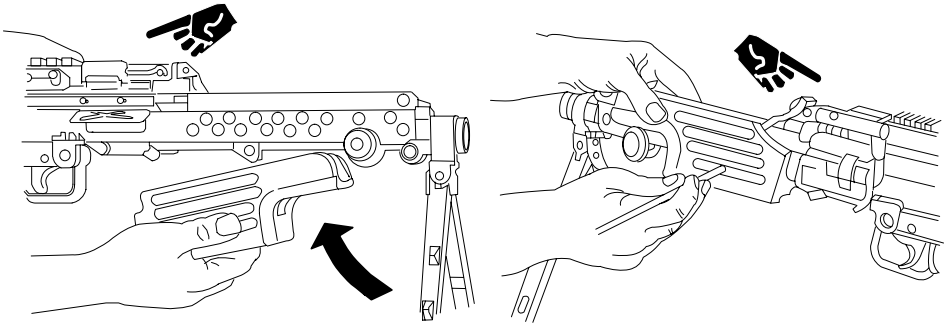




Turn the cylinder until the spring clicks into the recess at the rear of the gas cylinder.

HANDGUARD.

Replace all cleaning equipment removed from stowage areas (app E).
Place the handguard on the receiver and slide it backwards until it stops.
With the help of a cleaning rod section, push the handguard retaining pin to the right.
Pull downward on the handguard to check if it is secure (assembled correctly).



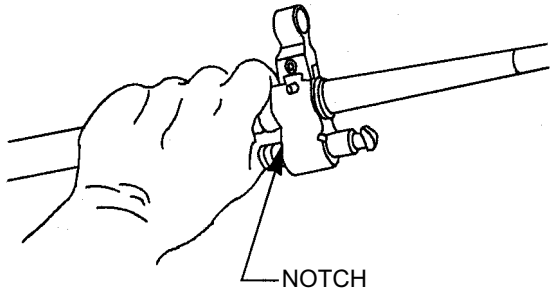
HOW TO PUT IT TOGETHER (Cont).

GAS REGULATOR.

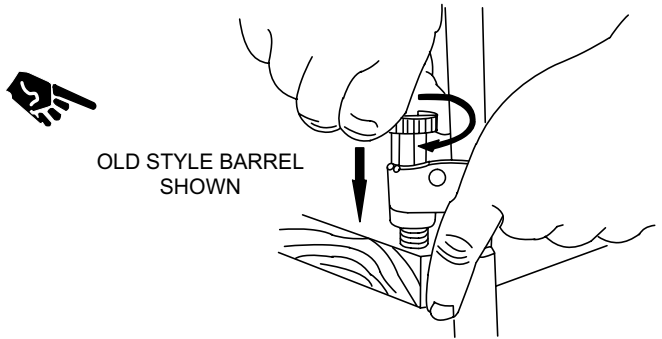
NOTE

New style barrel does not have separate gas collar and gas regulator.

Holding barrel in one hand with muzzle up, insert gas regulator into lower end of gas block hole being careful to aline notch on regulator body with notch in gas block.



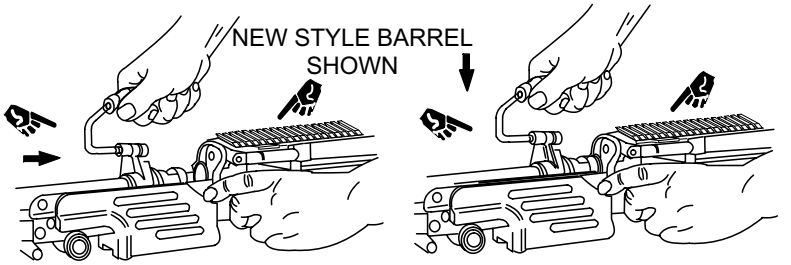
With gas regulator installed and supported on firm surface, place the gas collar on the protruding end of the gas regulator and rotate the collar until it slips into place. Press in and rotate to lock in place.



HOW TO PUT IT TOGETHER (Cont).

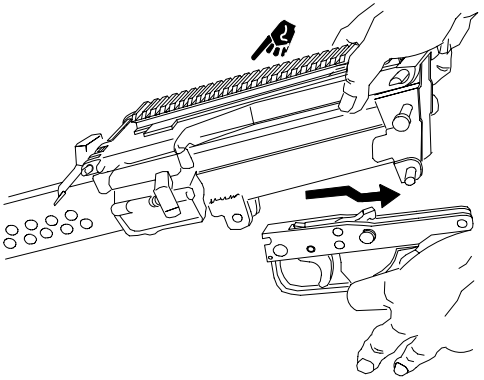
BARREL.

Depress the locking lever with left hand. Holding the carrying handle with the right hand, pull the barrel rearward, push downward and lock by releasing barrel locking lever.



TRIGGER MECHANISM.

Ensure retaining pin is to the left. Install trigger mechanism. Hold in place by pushing the retaining pin into the right side hole of the trigger mechanism assembly.



HOW TO PUT IT TOGETHER (Cont).

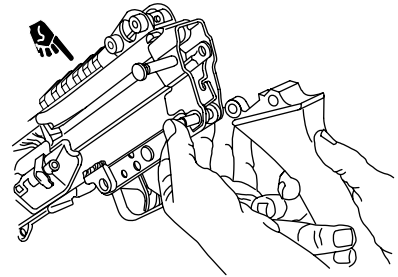
BUTTSTOCK AND SHOULDER ASSEMBLY.

WARNING

WHEN THE RETENTION (PIVOT) PIN IS NOT POSITIVELY RETAINED IT CAN WORK LOOSE DURING FIRING. IF IT WORKS COMPLETELY OUT, THE TRIGGER MECHANISM CAN SEPARATE FROM THE WEAPON. SEPARATION OF THE TRIGGER MECHANISM WHEN THE WEAPON IS LOADED, WILL CREATE A RUNAWAY.

Supporting trigger mechanism with left hand, aline lower hole in buttstock and buffer assembly with rear hole in trigger mechanism and push lower retaining pin to right.

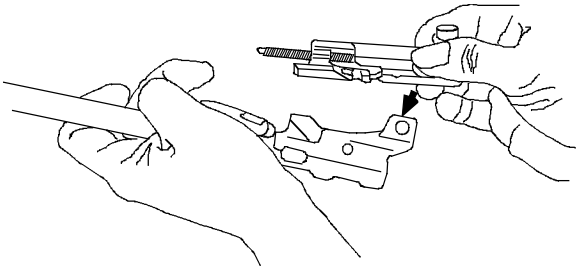
If positive retention doesn't exist with both grooves of the retention (pivot) pin, notify unit maintenance.



NEW STYLE BUTTSTOCK AND BUFFER ASSEMBLY SHOWN.

MOVING PARTS MECHANISM

Assemble the slide assembly to the piston, and secure by pushing retaining pin from left to right.



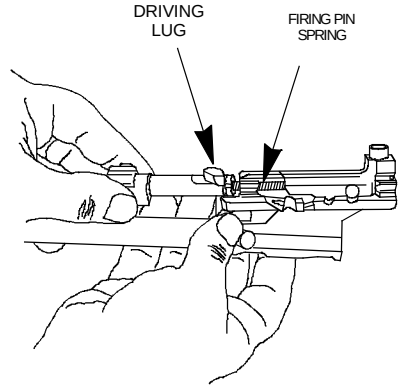
HOW TO PUT IT TOGETHER (Cont)

MOVING PARTS MECHANISM (Cont)

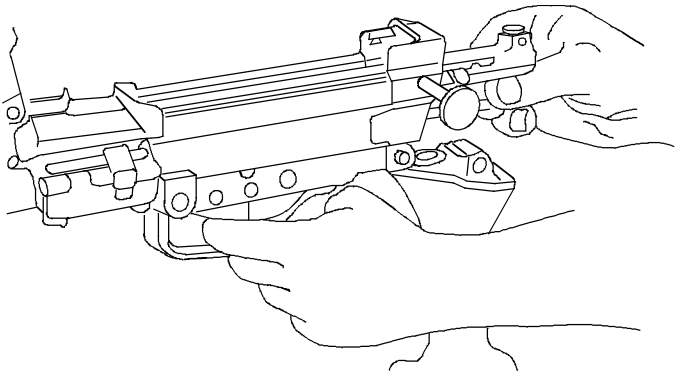
NOTE

Be sure firing pin spring is on firing pin.

Put the bolt assembly into the slide assembly. Press in to compress the firing pin spring, rotate the bolt and hook its driving lug into the slide assembly.



Put the moving parts into the receiver with the feed cover open. Locate the bolt lugs and slide cutouts carefully on the rails. At the same time locate the piston into the rear of the gas cylinder. Press the trigger with the forefinger of the other hand so that the sear does not prevent the moving parts from going forward.



HOW TO PUT IT TOGETHER (Cont).

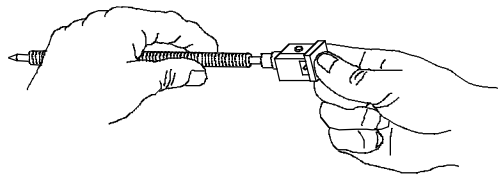
SPRING AND RETURN ROD AND TRANSFER MECHANISM ASSEMBLY.

CAUTION

IMPROPER ASSEMBLY OF THE TRANSFER MECHANISM CAN CAUSE DAMAGE TO THE RECEIVER AND/OR THE ASSEMBLY ITSELF. IF THE HORIZONTAL PINS OF THE TRANSFER ASSEMBLY ARE NOT PLACED IN THE HOOKS, INSIDE THE RECEIVER, WHEN THE BUTTSTOCK IS PIVOTED IN THE UP POSITION FOR PINNING, THE RECEIVER HOOKS CAN BE BENT.

IF THE HORIZONTAL PINS OF THE TRANSFER ASSEMBLY ARE ROTATED TO A VERTICAL POSITION AND THE BOTTOM PIN IS HOOKED INTO THE LIGHTENING HOLE IN THE BOTTOM OF THE RECEIVER, THE PIN CAN BE SHEARED, DAMAGED OR LOST WHEN THE WEAPON IS FIRED.

While rotating in either direction, slide spring on return rod and transfer mechanism assembly.

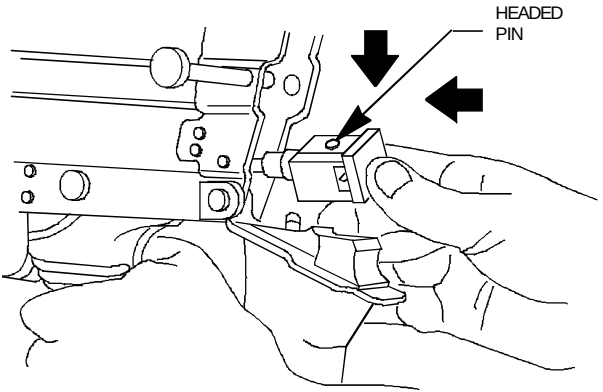


SPRING, AND RETURN ROD AND TRANSFER MECHANISM ASSEMBLY.

NOTE

Assure that the headed end of the vertical pin, in the transfer mechanism assembly, is up (on top).

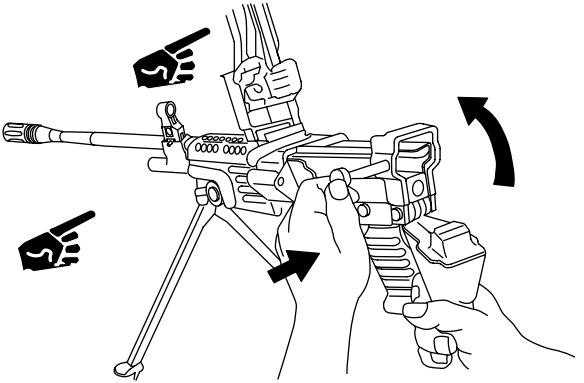
Hold the pistol grip with one hand and push the return rod and transfer mechanism assembly into its housing in the rear of the piston with the other. With the thumb of that hand, press in and down on the rear of the assembly until its two lugs are positioned in the receiver grooves.



HOW TO PUT IT TOGETHER (Cont).

SPRING, AND RETURN ROD AND TRANSFER MECHANISM ASSEMBLY (Cont).

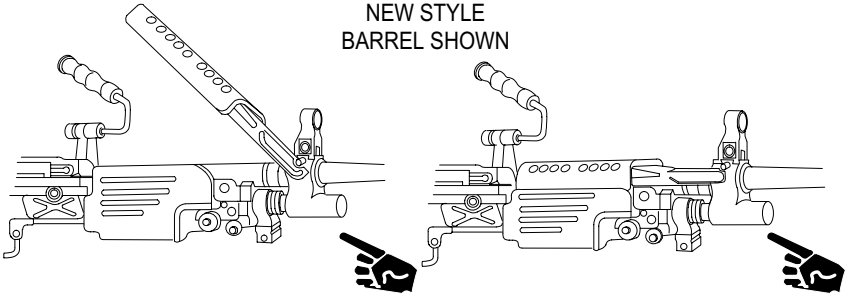
Pivot the buttstock and buffer assembly upward into position and push the upper retaining pin to the right; close the cover assembly.



New style buttstock and buffer assembly shown.

HEATSHIELD INSTALLATION.

Hook the metal extensions of the heat shield assembly under the front sight pins (new style barrel) with the spin clips down on top of barrel.



NOTE

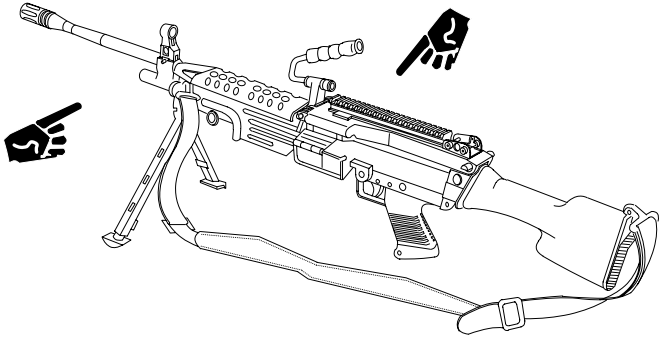
Although old style barrels do not have protruding front sight pins, heat shield assemblies can be used.

Using care not to pinch yourself, apply downward pressure and snap heatshield onto the barrel.

HOW TO PUT IT TOGETHER (Cont).

SLING AND SNAP HOOK ASSEMBLY INSTALLATION.

Squeeze the latch on the snaphook and place hook in buttstock loop and hole in receiver fore end (either side). Assure sling is not twisted.



FUNCTION CHECK.

WARNING

DO NOT DRY FIRE THE WEAPON. ALLOWING THE BOLT TO SLAM CLOSED ON AN EMPTY CHAMBER CAN CAUSE UNNECESSARY WEAR AND POSSIBLE DAMAGE TO THE BOLT, BARREL, AND RECEIVER. FAILURE TO RETURN THE COCKING HANDLE TO THE FULLY FORWARD POSITION PRIOR TO FUNCTION CHECKING (FIRING) THE WEAPON CAN RESULT IN THE BULGING/CRACKING OF THE COCKING HANDLE GUIDE RAIL PORTION OF THE RECEIVER.

- Assure the safety is to the left (RED BAND visible) and charge the weapon by pulling the cocking handle to the rear to lock the bolt (cock the weapon). Push cocking handle forward until you hear it click.
- Push safety to the right (RED BAND Invisible).
- Open cover assembly and place link belt of several rounds of m232 dummy ammunition on feed tray with first round against cartridge stop, hold in position, and close the cover assembly.

FUNCTION CHECK (Cont).

- Pull the trigger nothing should happen.
- Push safety to the left (RED BAND visible) and pull the trigger. The bolt assembly should move forward, stripping, feeding, and locking a dummy round (M232) in the chamber.
- Pull cocking handle to rear. Dummy round (M232) should extract and eject, and the bolt assembly should remain to rear.
- Repeat the cycle several times. Each time the cycle is repeated, a link should exit the cover assembly.
- With bolt assembly held to the rear, check for clear weapon. Hold cocking handle to rear, pull the trigger and ride the bolt assembly forward to close and lock on empty chamber.
- If for any reason the weapon fails the function test, check for missing or improperly assembled components If the reason for failure cannot be detected, notify organizational maintenance.

CHAPTER 4
MAINTENANCE OF AUXILIARY EQUIPMENT

Section I. MAINTENANCE OF TACTICAL EQUIPMENT

4-1. TRIPOD MOUNT, M122.

For maintenance of Tripod Mount, M122 refer to TM 9-1005-245-13&P, Marine Corps use TM 1005-13&P/1.

Inspect adapter assembly for missing parts and bent or broken members. Clean and lightly lubricate. If adapter does not function properly, notify unit maintenance for repair.

4-2. NIGHT VISION AND AUXILIARY SIGHT TYPES. For maintenance refer to:

a.	AN/PVS-4	TM 11-5855-213-10
b.	AN/PAQ-4B/C	TM 11-5855-301-12&P
c.	M145	TM 9-1240-415-13&P
d.	AN/PEQ-2A	TM 11-5855-308-12&P

MAINTENANCE OF TACTICAL EQUIPMENT (Cont).

4-3. STOCK, GUN, SHOULDER: M5.

If collapsible buttstock is damaged or does not function correctly, notify unit maintenance for repair.

4-4. MOUNT, PEDESTAL, MACHINE GUN, M6.

For maintenance of Mount, Pedestal, Machine Gun, M6 refer to TM 9-1005-245-13&P.

4-5. MOUNT, MACHINE GUN, M197.

For maintenance of Mount, Machine Gun, M197 refer to TM 9-1005-245-13&P.

4-6. ADAPTER AMMUNITION BRACKET.

Inspect adapter for cracks and deformation. If adapter does not function properly or cannot be retained in magazine well, notify unit maintenance.

MAINTENANCE OF TACTICAL EQUIPMENT (Cont).

4-7. MAGAZINE, CARTRIDGE.

Inspect magazine for missing parts; broken zipper; torn cloth; deformed feed lips; cracked top; deformed, cracked or broken dove tail; and bent or loose spring catch. If magazine does not function properly or cannot be retained in weapon dove tail, notify unit maintenance.

4-8. LIGHT, AIMING, INFRARED, AN/PAQ-4B/C.

For maintenance of Light, Aiming, Infrared, AN/PAQ-4B refer to TM 11-5855-301-12&P.

4-9. ADAPTER, GUN, MOUNTING.

Inspect adapter assembly for missing parts and bent or broken members. If adapter cannot be retained in the M142 mount or the weapon cannot be secured on the adapter, notify unit maintenance for repair.

SECTION II. MAINTENANCE OF TRAINING EQUIPMENT

4-10. BLANK FIRING ATTACHMENT (BFA).

Clean frequently using CLP (item 6 or 7, app D). If BFA becomes cracked or distorted, replace.

4-11. SIMULATOR SYSTEM, FIRING, LASER, M90 OF MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (MILES).

For maintenance of MILES Simulator System, Firing, Laser, M90 refer to TM 9-1265-211-10.

CHAPTER 5
AMMUNITION

WARNING

DO NOT FIRE . . . .

Seriously corroded ammunition
Dented cartridges
Cartridges with loose bullets
Cartridges exposed to extreme heat (direct sunlight on a hot day) until they have cooled
Cartridges with pushed in (short) bullets

WARNING

BLANK AMMUNITION SHOULD NOT BE FIRED TOWARD PERSONNEL WITHIN 20 FEET OR LESS FROM THE MUZZLE, BECAUSE FRAGMENTS OF A CLOSURE WAD OR PARTICLES OF UNBURNED PROPELLANT MIGHT INFLICT INJURY WITHIN THAT RANGE.

WARNING

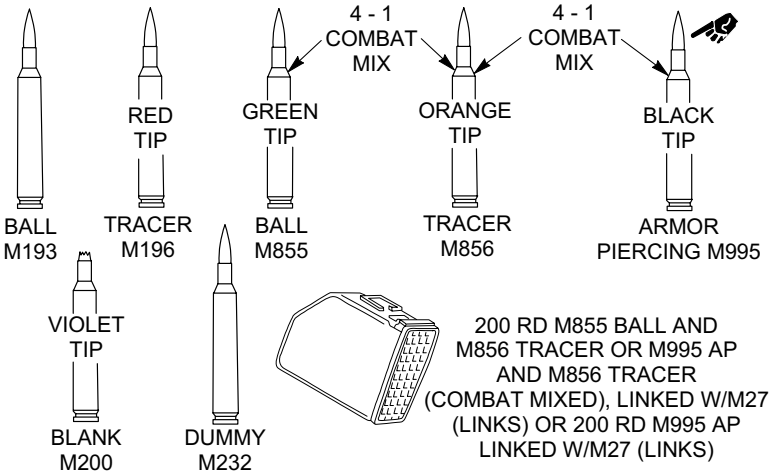
DO NOT LUBRICATE AMMUNITION UNDER ANY CIRCUMSTANCES!

ALL PERSONNEL WITHIN 30 METERS OF A WEAPON FIRING SHALL WEAR APPROVED SINGLE HEARING DEVICES DURING TRAINING EXERCISES!

CAUTION

IF AMMUNITION IS WET OR DIRTY, WIPE IT OFF WITH A DRY RAG PRIOR TO USE. DUST AND OTHER ABRASIVES THAT COLLECT ON OILY AMMUNITION ARE DAMAGING TO OPERATING PARTS OF THE GUN. DO NOT LUBRICATE. LUBRICATED CARTRIDGES PRODUCE EXCESSIVE CHAMBER PRESSURE.

Use only authorized ammunition that is manufactured to US Army specifications.



KEEP DRY, CLEAN, AND FREE OF "CRUD". YOUR LIFE DEPENDS ON IT!

APPENDIX A
REFERENCES

SCOPE: This appendix lists all U.S. Army, Marine Corps, and Air Force forms, field manuals, orders, pamphlets, and technical manuals referenced in this manual.

U.S. ARMY PUBLICATIONS AND FORMS

FORMS

DA FORM 2028 ..... Recommended Changes to Publications and Blank Forms

DA FORM 2404 ..... Equipment Inspections and Maintenance Worksheet

SF 368 ..... Quality Deficiency Report

FIELD MANUALS

FM 21-11 ..... First Aid for Soldiers

FM 23-14 ..... Squad Automatic Weapon (SAW) M249

FM 31-70 ..... Basic Cold Weather Manual

FM 31-71 ..... Northern Operations

FM 90-3 ..... Desert Operations

PAMPHLETS

DA PAM 738-750..... The Army Maintenance Management System (TAMMS)

TECHNICAL MANUALS

TM 9-107 ..... Operation and Maintenance of Ordnance Material in Cold Weather

TM 9-1005-201-23&P .....Unit and Direct Support Maintenance Manual (including
TM 08671A-23&P Repair Parts and Special Tool List) for Machine Gun,
TO 11 W3-5-5 52 5.56MM, M249 W/Equip (1005-01-127-7510)

TM 9-1005-245-13&P .....Operator, Unit, and Direct Support Maintenance Manual
TM 9-1005-13&P/1 with Repair Parts and Special Tools List (RPSTL) for
TO 11W2-8-1-322 Machine Gun Mounts and Combinations

TM 9-1265-211-10.....Operator's Manual for Multiple Integrated Laser Engagement System (MILES) Simulator System, Firing, Laser: M89 (NSN 1265-01-236-6725) for M16A1/M16A2 Rifle and Simulator System, Firing, Laser: M90 (NSN 1265-01-236-6724) or M249, Squad Automatic Weapon (SAW)

TECHNICAL MANUALS (Cont).

TM 11-5855-213-10 ..... Operator's Manual for Night Vision Sight Individual Served Weapon AN/PVS-4 (NSN 5855-00-629-5334)

TM 11-5855-301-12&P ..... Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tool List) Light, Aiming, Infrared AN/PAQ-4B/C (NSN 5855-01-361-1362)
TM 09596B-12&P

TM 11-5855-308-12&P ..... Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) Target Pointer Illuminator/Aiming Light AN/PEQ-2A (NSN 5855-01-447-8992)

TM 750-244-7 ..... Procedures for Destruction of Equipment to Prevent Enemy Use

U.S. MARINE CORPS PUBLICATIONS AND FORMS

FORMS

NAVMC Form 10772 .....Recommended Changes to Technical Publications

MARINE CORPS ORDERS

MCO 4855.10 .....Quality Deficiency Report

TECHNICAL MANUALS

TM 4700.15/1 .....Equipment Record Procedures

AIR FORCE PUBLICATIONS AND FORMS

FORMS

ATTO Form 22..... Technical Order System Publication Improvement Report and Reply

TECHNICAL ORDERS

TO 00-35D-54..... TM, USAF, Material Deficiency Reporting and Investigating System

APPENDIX B
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LIST
Section I. INTRODUCTION

SCOPE.

This appendix lists components of end item (COEI) and basic issue items (BII) for the M249 Machine Gun to help you inventory items required for safe and effective operation.

GENERAL.

The COEI and BII lists are divided into the following sections:

COEI.

This listing is for informational purposes only and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item, whenever it is issued or transferred between property accounts.

GENERAL (Cont).

COEI (Cont).

The illustration will assist you in identifying the items. Usable on code definition and the following code listing:

CODE	USED ON
M23	AUTOMATIC RIFLE
LMG	LIGHT MACHINE GUN

BII.

These are the minimum essential items required to place the M249 Machine Gun in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the M249 Machine Gun during operation and whenever it is transferred between properly accounts. The illustrations will assist you in identifying the items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

The following provides an explanation of columns found in the tabular listing:

Column (1) - Illustration Number (Illus No.). This column indicates the number of the illustration in which the item is shown.

Column (2) - National Stock Number. Indicates the national stock number (NSN) assigned to the item and will be used for requisitioning purposes.

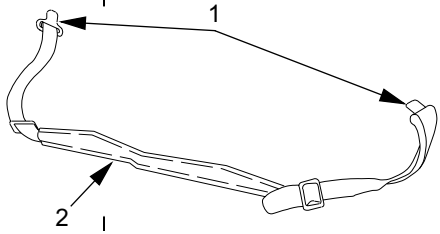
Column (3) - Description CAGEC and Part No. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC) followed by the part number.

Column (4) - Unit of Issue (U/I). Indicates how the item is issued for the NSN shown in column two.

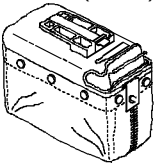
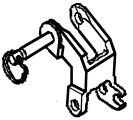
Column (5) - Quantity required (Qty Rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM

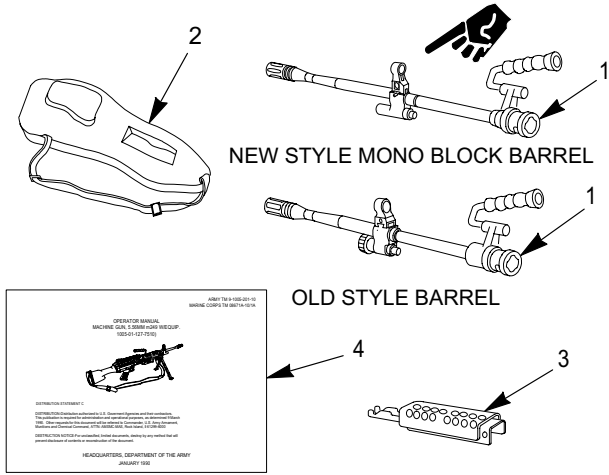
(1) Illus No.	(2) National Stock No.	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty Rqd
1	5340-01-158-0134	HOOK, SNAP ASSEMBLY (19200) 9348468		EA	2
2	1005-00-312-7177	SLING, SMALL ARMS (19204) 12002983		EA	1



Section II. COMPONENTS OF END ITEM

(1) Illus No.	(2) National Stock No.	(3) Description CAGEC and Part Number	Usable On Code	(4) U/I	(5) Qty Rqd
3	1005-01-334-1507	MAGAZINE, CARTRIDGE (19200) 12944203 	M23	EA	2
4	1005-01-425-6541	ADAPTER, AMMUNITION BRACKET 	LMG	EA	1
5	1005-01-225-1156	ADAPTER ASSEMBLY, TRIPOD 	LMG	EA	1

Section III. BASIC ISSUE ITEMS



(1) Illus No.	(2) National Stock No.	(3) Description CAGEC and Part Number	(4) U/I	(5) Qty Rqd
1	1005-01-387-8516	Barrel Assembly (old style barrel) (19200) 12556957	EA	1
		OR		
1	1005-01-470-5046	Barrel Assembly (new style barrel) (19200) 12011986	EA	1
2	1005-00-791-5420	Case, Carrying, Barrel Assembly and Equipment (19205) 7791009	EA	1
3	1005-01-249-0184	Heat Shield Assembly (19200) 12540405	EA	1
4		TM 9-1005-201-10	EA	1

APPENDIX C
ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

SCOPE.

This appendix lists additional items you are authorized for the support of the M249 machine gun.

GENERAL.

This list identifies items that do not have to accompany the M249 machine gun and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

EXPLANATION OF LISTING.

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., MTOE, CTA, TDA, or JTA) which authorizes the item(s) to you.

EXPLANATION OF COLUMNS.

Column (1) - National Stock Number. Indicates the national stock number (NSN) assigned to the item and will be used for requisitioning purposes.

Column (2) - Description CAGEC and Part Number. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC), in parenthesis, followed by the part number.

Column (3) - **Unit of Issue U/I).** Indicates how the item is issued for the NSN shown in column one.

Column (4) - **Quantity Recommended (QTY RECM).** Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NO.	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY RECM
	MTOE AUTHORIZED ITEMS		
1005-00-710-5599	Mount Tripod Machine Gun, M122 (19205) 7790723	EA	1
5855-00-629-5334	Night Vision Sight, Individual Served Weapon, AN/PVS-4 (80063) SMD850300-1	EA	1
5855-01-361-1362	Light Aiming Infrared, AN/PAQ-4B/C (80063) A3187001	EA	1
	TDA AUTHORIZED ITEMS		
1265-01-236-6724	Simulator System, Firing, Laser, M90 (for training only) (19200) 11838730	EA	1

Section II. ADDITIONAL AUTHORIZATION LIST (Cont).

(1) NATIONAL STOCK NO.	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY RECM
	CTA AUTHORIZED ITEMS		
8465-00-781-9564	Case, Maintenance Equipment, Small Arms (81349) MIL-C-43737 (CTA 50-970)	EA	1
8465-01-157-4834	Case, Small Arms Ammunition (200 Rd) (82349) MIL-C-44082 (CTA 50-900)	EA	2
1005-01-411-1264	Stock, Gun, Shoulder: M5 (19200) 12956141 (CTA 50-909)	EA	1

Section II. ADDITIONAL AUTHORIZATION LIST (Cont).

(1) NATIONAL STOCK NO.	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY RECM
	OTHER AUTHORIZED ITEMS		
1005-21-912-8997	Blank Firing Attachment (BFA) (for training only) (2C085) 08309C-1	EA	1
1005-01-411-6341	Mount, Pedestal, Machine Gun, M6 (19200) 12956270	EA	1
1005-01-413-4098	Mount, Machine Gun, M197 (19200) 12956264	EA	1
1005-01-334-1507	Magazine, Cartridge (19200) 12944203	EA	4
1005-01-451-7558	Adapter Gun Mounting for M142 (19200) 12598081	EA	1

Section II. ADDITIONAL AUTHORIZATION LIST (Cont).

(1) NATIONAL STOCK NO.	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY RECM
	OTHER AUTHORIZED ITEMS (Cont)		
1005-01-113-0321	Handle Assembly (19204) 8436776	EA	1
1005-00-050-6357	Rod Section, Small Arms (19204) 8436775	EA	2
1005-01-131-1914	Scraper Assembly (19200) 9348463	EA	1
1005-00-937-2250	Swab Holder Section, Small Arms (19204) 11686327	EA	1
1005-01-225-1156	Tripod Adapter (19200) 9378233	EA	1
1005-01-425-6541	Adapter Magazine (19200) 12956280	EA	1

Section II. ADDITIONAL AUTHORIZATION LIST (Cont).

(1) NATIONAL STOCK NO.	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY RECM
	OTHER AUTHORIZED ITEMS (Cont)		
1005-01-475-4296	Barrel, Machine Gun (Short) (19200) 12556953	EA	1

APPENDIX D

EXPENDABL/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the M249 Machine Gun. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable items.

EXPLANATION OF COLUMNS.

Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., “Use cleaning compound, item 2, app D”).

Column (2) - Level. This column identifies the lowest level of maintenance that re-quires the listed items (e.g., “C- OPERATOR/CREW”).

EXPLANATION OF COLUMNS (Cont).

Column (3) - National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

Column (4) - Description CAGEC & Part Number. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC), in parenthesis, followed by the part number.

Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NO.	(4) DESCRIPTION CAGEC & PART NO.	(5) U/M
1	C	1005-00-494-6602	Brush, Cleaning (19204) 8448462	EA
2		1005-00-610-8828	Brush, Cleaning, (19206) 6108828	EA
3	C	1005-00-903-1296	Brush, Cleaning, Small Arms Bore (19204) 11686340	EA
4	C	1005-01-131-2121	Brush, Cleaning, Small Arms Chamber (19200) 9348462	EA
5	C	5340-00-880-7666	Cap, Protective, Dust (19204) 8445067	EA

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (Cont)

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NO.	(4) DESCRIPTION CAGEC & PART NO.	(5) U/M
6	C	9150-01-102-1473	Cleaner, Lubricant and Preservative (CLP) (81349) MIL-L-63460 1/2 oz btl	EA
7	C	9150-01-079-0124	Cleaner, Lubricant and Preservative (CLP) (27412) MIL-L-63460 4 oz btl	EA
8	C	9920-00-292-9946	Cleaner, Tobacco Pipe (89855)	EA
9	C	1005-01-113-0321	Handle Assembly (19204) 8436776	EA

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (Cont)

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NO.	(4) DESCRIPTION CAGEC & PART NO.	(5) U/M
10	C	1005-00-050-6357	Rod Section, Small Arms (19204) 8436775	EA
11	C	1005-01-131-1914	Scraper Assembly (19200) 9348463	EA
12	C	1005-00-937-2250	Swab Holder Section, Small Arms (19204) 11686327	EA
13	C	7920-00-205-1711	Rag, Wiping: Cotton (58536) A-A-351 50 lb bdl	EA
14	C	1005-00-912-4248	Swab, Small Arms Cleaning: Cotton (19204) 11686408 1 pkg. (1000 per pkg.)	EA

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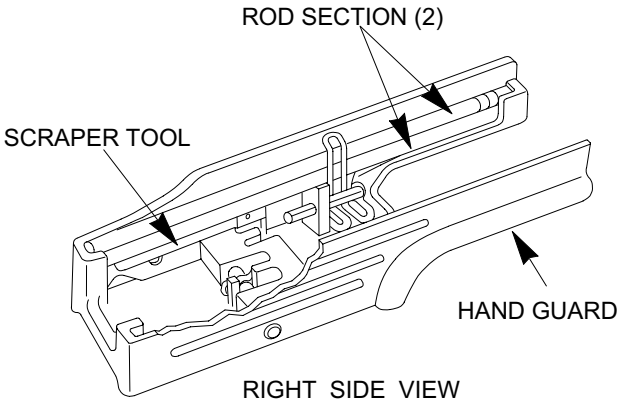
APPENDIX E
STOWAGE OF CLEANING EQUIPMENT/SUPPLIES

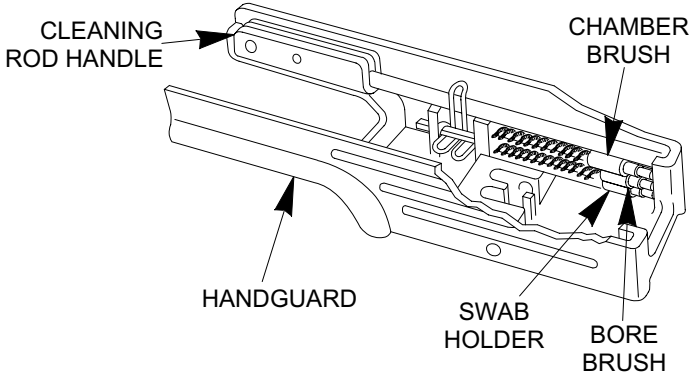
E-1. STOWAGE OF CLEANING TOOLS.



RIGHT SIDE VIEW

- To remove: Pry the retaining clip over the center of the cleaning rod section.

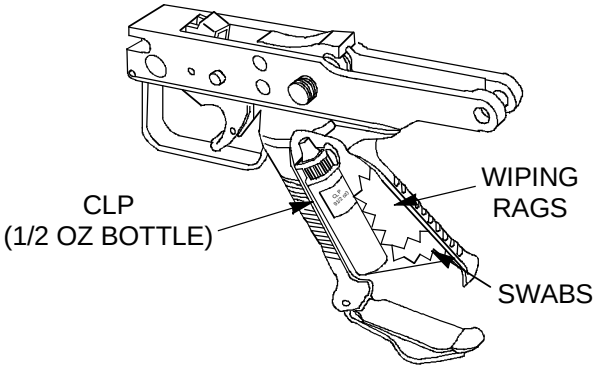
E-1. STOWAGE OF CLEANING TOOLS (Cont).



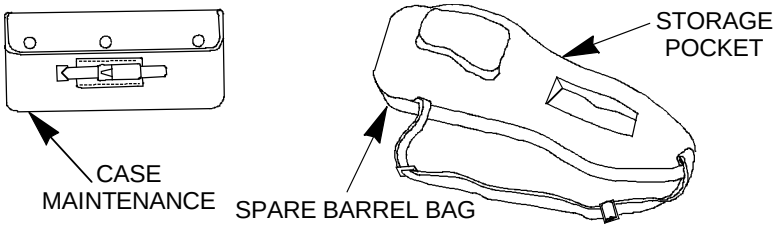
LEFT SIDE VIEW

- To remove: Pry the retaining clip over the center of the chamber brush.

E-2. STOWAGE OF CLEANING SUPPLIES.



E-3. ALTERNATE STOWAGE OF CLEANING EQUIPMENT/SUPPLIES.



Brush cleaning, NSN 1005-00-810-8828, maybe stowed in spare barrel bag. following items may be stowed in Case, Maintenance Equipment, Small Arms:

1. Cleaning Rod Handle
2. Rod Section (2 ea)
3. Swab Holder
4. Chamber Brush
5. Bore Brush
6. SCRAPER TOOL
7. CLP (1/2 oz bottle)
8. Wiping Rags
9. Swabs
10. Pipe Cleaners
11. Cleaning Brush (tooth)

ARMY TM 9-1005-201-10
MARINE CORPS TM 08671A-10/1A

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

PATRICIA P. HICKERSON
Brigadier General, United States Army
The Adjutant General

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By Order of the Marine Corps:

H. E. REESE
Deputy for Support
Marine Corps Research, Development and Acquisition Command

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

Centimeter -10 Millimeters- 0.01 Meter -0.3937 Inches

Meter -100 Centimeters - 1000 Millimeters -39.37 inches

kilometer -1000 Meters- 0.621 Miles

Millimeters. Inches times 25.4

Inches - Millimeters divided by 25.4

WEIGHTS

1 Gram -0.001 Kilograms - 1000 Milligrams. 0.035 Ounces

1 Kilogram - 1000 Grams - 2.2Lb

LIQIUID MEASURE

1 Milliliter -0.001 Liters - 0.0338 Fluid Ounces

TEMPERATURES

212°F - 100° C°

100°-38°C

32°F-0°C

0°F--18°C

35°F--37°C

APPROXIMATE CONVERSION FACTORS

TO CHANGE	To	MULTIPLY BY	
Inches	Centimeters		2.540
Feat	Maters		0.305
Yards	Meters .,		0.914
Miles	Kilometers		1.609
Fluid Ounces	Millimeters		29.573
Ounces.	Gram		28.349
Pounds.	Kilograms		0.454
Centimeters.	Inches		0.394
Madam	Fact		3.280
Meters.	Yards		1.094
Kilometers	Miles		0.621
Millliters.	Fluid Ounces		0.034
Grams	Ounces		0.035
Kilograms.	Pounds.		2.205
°Fahrenheit	°Celsius	°C- (°F-32)x5÷9	
°Celsius	°Fahrenheit	°F-°x9÷5+32	