

TM 9-1005-212-25

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

ORGANIZATIONAL, DS, GS AND DEPOT MAINTENANCE
MANUAL INCLUDING REPAIR PARTS AND
SPECIAL TOOLS LISTS

MACHINE GUN, CALIBER .30: BROWNING, M1919A4,
FLEXIBLE W/E (1005-672-1643)

MACHINE GUN, CALIBER .30: BROWNING,
M1919A6 W/E (1005-611-6005)

MACHINE GUN, CALIBER .30: M37
(1005-716-2946)

MOUNT, TRIPOD, MACHINE GUN: CALIBER .30, M2, W/E
(1005-322-9718)



HEADQUARTERS, DEPARTMENT OF THE ARMY

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HEADQUARTERS.
DEPARTMENT OF THE ARMY
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M1919A4, FLEXIBLE W/E**

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MOUNT, TRIPOD, MACHINE GUN:

CALIBER .30, M2, W/E

(1005-322-9718)

This manual is current as of 28 May 1969.

	Paragraphs	Pages
CHAPTER 1. INTRODUCTION		
Section I. General	1-1, 1-3	3
II. Description and data	1-4, 1-5	3
CHAPTER 2. ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
Section I. Service upon receipt of materiel	2-1	5
II. Repair parts special tools and equipment	2-2, 2-3	5
III. Lubrication	2-4	5
IV. Preventive maintenance checks and services	2-5	5
V. Troubleshooting	2-6	6
VI. Organizational maintenance procedures	2-7, 2-10	8
CHAPTER 3. DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE INSTRUCTIONS		
Section I. Repair parts, special tools and equipment	3-1, 3-2	11
II. Troubleshooting	3-3	11
III. Preembarkation inspection of materiel in units alerted for overseas movement	3-4, 3-5	12
IV. General maintenance	3-6, 3-7	12
V. Repair instructions for machine guns	3-8, 3-10	13-18
VI. Repair instructions for Tripod Mount, M2	3-11	24
VII. Depot maintenance instructions	3-12	26
CHAPTER 4. FINAL INSPECTION	4-1, 4-3	27
5. DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE	5-1	29
APPENDIX A. REFERENCES	A-1	31
B. COMBINED ORGANIZATIONAL DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST		
Section I. Introduction	B-1, B-7	33-36
II. Prescribed load allowance		37

*This manual supersedes TM 9-1005-212-12P, 22 July 1964, including changes, TM 9-1005-212-35, 7 September 1965, including changes and TM 9-1005-241-35, 25 October 1965, including changes.

	Paragraphs	Pages
Section III. Organizational repair parts for:		
Major group and assemblies (M1919A4 and M1919A6 only) (Fig. B-1)	-----	39
Major groups and assemblies (M37 only) (Fig B-2)	-----	39
Bolt group (M1919A4 and M1919A6 only) (Fig B-6)	-----	40
Driving spring assembly and bolt group (M37 only) (Fig B-7)	-----	40
Lock frame group (Fig B-8)	-----	41
Barrel extension group (Fig B-9)	-----	41
Cover group (M1919A4 and M1919A6 only) (Fig B-10)	-----	41
Cover group (M37 only) (Fig B-11)	-----	42
Casing and barrel jacket group (M1919A4 and M1919A6 only) (Fig B-14)	-----	43
Casing and barrel jacket group (M37 only) (Fig B-15)	-----	43
Major groups and assemblies traversing and elevating mechanism assembly (Fig B-18)	-----	44
Head and leg groups (Fig B-19)	-----	44
VI. Special tools and equipment for:		
Machine Guns, M1919A4, M1919A6 and M37	-----	45
Tripod Mount, M2	-----	46
Armorer's tools (Fig B-24)	-----	46
Section I. Direct support, general support and depot maintenance repair parts for:		
Major groups and assemblies (M1919A4 and M1919A6) (Fig B-1)	-----	47
Major groups and assemblies (M37 only) (Fig B-2)	-----	48
Shoulder gun stock group (Fig B-3)	-----	48
Back plate assembly (M1919A4 and M1919A6 only) (Fig B-4)	-----	48
Back plate assembly (M37 only) (Fig B-5)	-----	49
Bolt group (M1919A4 and M1919A6 only) (Fig B-6)	-----	50
Driving spring assembly and bolt group (M37 only) (Fig B-7)	-----	51
Lock frame group (Fig B-8)	-----	53
Barrel extension group (Fig B-9)	-----	54
Cover group (M1919A4 and M1919A6 only) (Fig B-10)	-----	54
Cover group (M37 only) (Fig B-11)	-----	55
Bipod assembly (Fig B-12)	-----	56
Carrying handle assembly (Fig B-13)	-----	56
Casing and barrel jacket group (M1910A4 and M1919A6 only) (Fig B-14)	-----	57
Casing and barrel jacket group (M37 only) (Fig B-15)	-----	59
Front sight group (Fig B-16)	-----	62
Retracting bar group (M37 only) (Fig B-17)	-----	63
Traversing and elevating mechanism assembly (Fig B-18)	-----	63
Head and leg groups (Fig B-19)	-----	66
Section VI. Special tools, test and support equipment		
Tools and equipment authorized for unit replacement (M1919A4, M1919A6 and M37) (Fig B-24)	-----	69
Tripod Mount, M2 (Fig B-22)	-----	70
Special tools and equipment (Figs B-21 thru B-29)	-----	70
VII. Index—Federal stock number and reference number cross-referenced to figure and item number	-----	91
APPENDIX C. MAINTENANCE ALLOCATION CHART		
Introduction	-----	97
II. Maintenance allocation chart for Machine Guns Caliber .30, M1919A4 M1919A6 and M37 and Machine Gun Tripod Mount, M2	-----	98

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual contains instructions for organizational, direct support, general support and depot maintenance. They apply to the Caliber .30 Machine Guns, M1919A4, M1919A6 and M37 (with and without sights); and Machine Gun Tripod Mount, M2.

1-2. Forms and Records

a. General. DA Forms and procedures used for equipment maintenance will be only those prescribed in TM 38-750, Army Equipment Record Procedures.

b. Recommendations for Equipment Publications Improvements. Report of errors, omis-

sions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to:

Commanding General
Headquarters
U. S. Army Weapons Command
ATTN: AMSWE-SMM-P
Rock Island, Illinois 61201

1-3. Administrative Storage

Requirements for administrative storage of this equipment are contained in TM 740-90-1.

Section II. DESCRIPTION AND DATA

1-4. Description

a. Caliber .30 Machine Guns, M1919A4 and M1919A6. For the description and over-all views of the machine guns refer to TM 9-1005-212-10.

b. Caliber .30 Machine Gun, M37 (with and without sights). The machine gun (figure 1-1) is an automatic and air-cooled weapon. It is designed mainly for the secondary armament on combat vehicles (fixed application without sights); or as a tripod mounted ground machine gun (flexible application with sights) by the Marine Corps.

c. Machine Gun Tripod Mount, M2. For the description and over-all view of the mount refer to TM 9-1005-212-10.

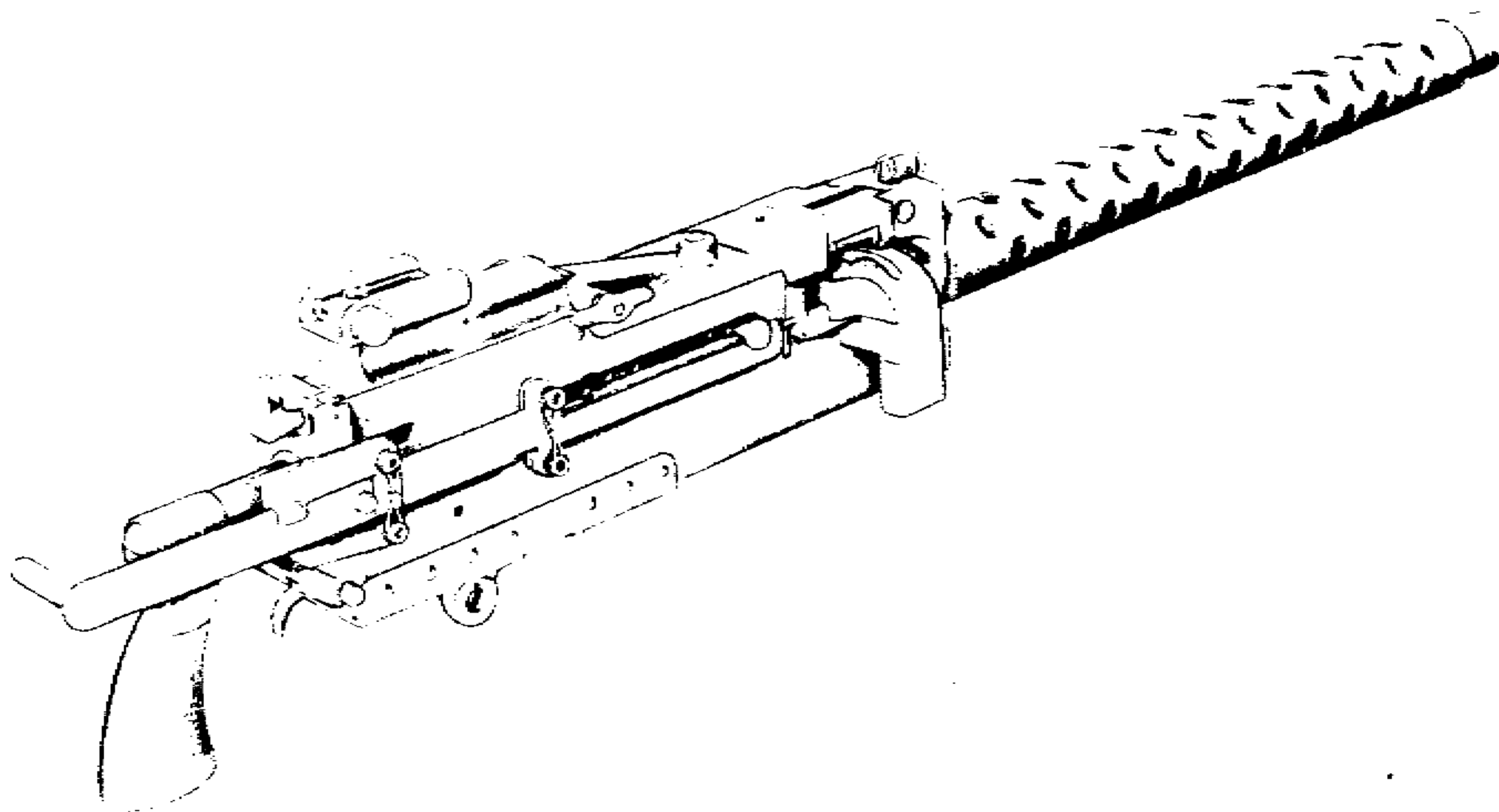
1-5. Tabulated Data

a. Caliber .30 Machine Guns, M1919A4 and M1919A6. For tabulated data on the machine guns refer to TM 9-1005-212-10.

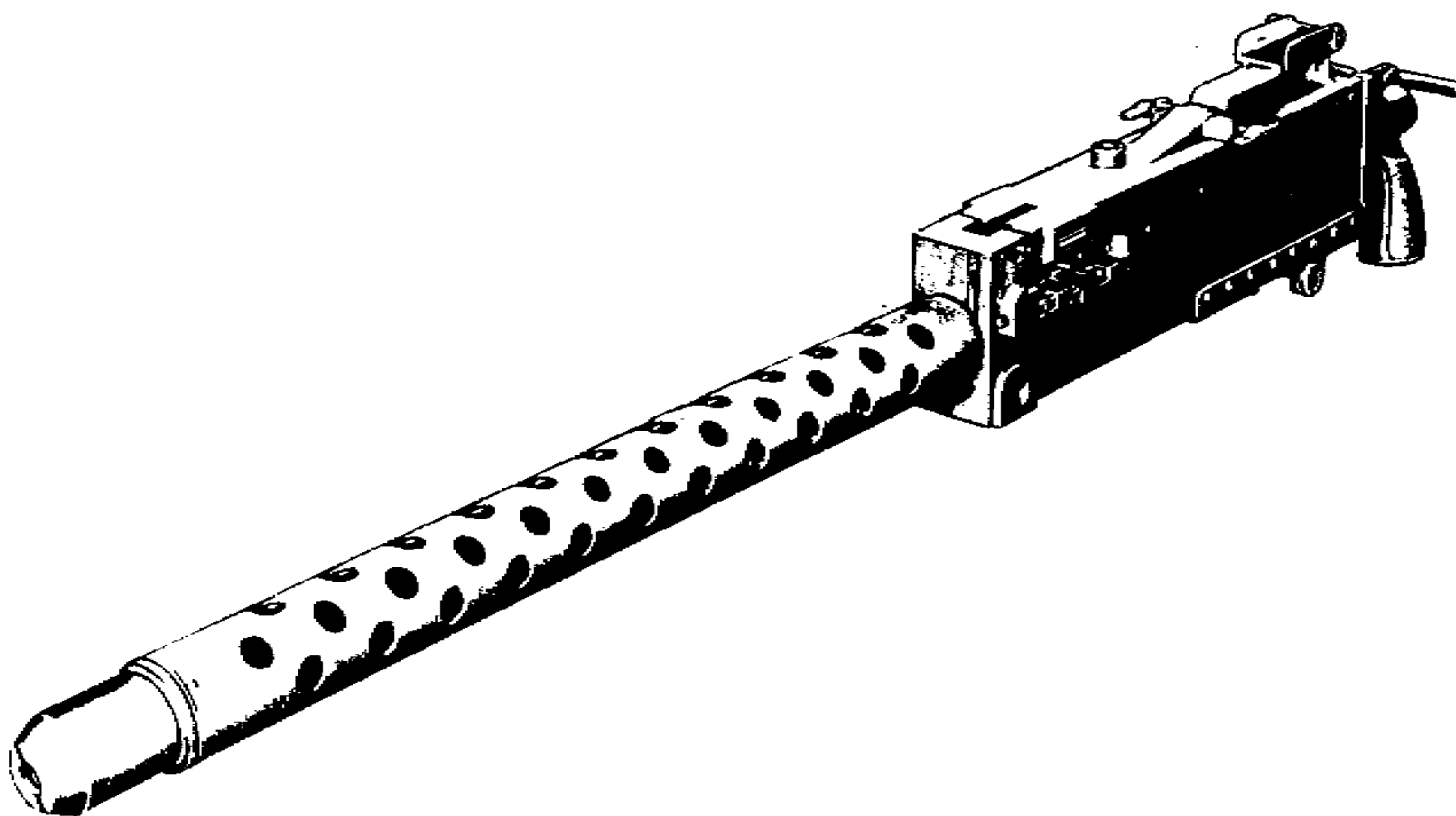
b. Caliber .30 Machine Gun, M37.

Weight	31 lbs approx
Length of weapon	41 3/4 in
Length of barrel	24 in
Feed	metallic link belt
Rate of fire	400 to 550 rds per min
Type of operation	recoil
Trigger pull:	
Maximum	12 lbs
Minimum	7 lbs

c. Machine Gun Tripod Mount, M2. For tabulated data on the mount refer to TM 9-1005-212-10.



A - RIGHT REAR VIEW WITH SIGHTS



E - LEFT FRONT VIEW W/O SIGHTS

WE G250

Figure 1-1. Caliber .30 Machine Gun, M37.

CHAPTER 2

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF MATERIEL

2-1. General

The procedures contained in table 2-1 will be observed by organizational maintenance when receiving new or rebuilt weapons and mounts before issuance to using troops.

Table 2-1. Service Upon Receipt of Materiel

Step	Action	Reference
1	Remove machine gun or tripod mount, and items from containers.	
2	Check for missing items. <i>Note.</i> Items must agree with Basic Issue Items List.	TM 9-1005-212-10 or pertinent vehicle operator's manual

Table 2-1. Service Upon Receipt of Materiel—Continued

Step	Action	Reference
3	Remove VCI bore tube from barrels.	
4	Field strip machine gun and inspect for: Missing parts Proper assembly	TM 9-1005-212-10 or pertinent vehicle operator's manual
5	Clean and lubricate, if necessary.	TM 9-1005-212-10 or pertinent vehicle operator's manual
6	Re-assemble <i>Note.</i> Install spare barrel assembly to make certain it locks securely.	
7	Adjust headspace.	TM 9-1005-212-10
8	Function, using dummy cartridges.	or pertinent vehicle operator's manual

Section II. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

2-2. Special Tools and Equipment

Refer to appendix B, section IV, for special tools and equipment that are required by organizational maintenance to maintain the machine gun and mount.

Note. Spare parts box 7148549 is issued only when the

Machine Gun, M1919A4 is used as vehicle armament. Spare parts box 7148550 is issued only with the Machine Gun, M37.

2-3. Maintenance Repair Parts

Organizational repair parts are listed and illustrated in appendix B, section III.

Section III. LUBRICATION

2-4. General

Refer to TM 9-1005-212-10 for lubrication of Machine Guns, M1919A4 and M1919A6 and

Tripod Mount, M2 and pertinent vehicle operator's manual for lubrication of Machine Gun, M37.

Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

2-5. General

Refer to table 2-2 for preventive maintenance

checks and services to be performed by organizational maintenance.

Table 2-2. Preventive Maintenance Checks and Services

Organizational Maintenance Category		Monthly Schedule (or quarterly)	
Sequence number	Item to be inspected	Procedure	Reference
	General condition	<i>Note.</i> During periods of inactivity perform preventive maintenance every 90 days unless inspection reveals more frequent servicing is necessary. Inspect protective coatings for effectiveness. Check for missing, loose, or damaged parts, tools, or equipment. Check to insure compliance with cleaning and lubrication instructions.	TM 9-1005-212-10 or pertinent vehicle operator's manual

Section V. TROUBLESHOOTING

2-6. General

a. Refer to table 2-3 for information useful in diagnosing and correcting unsatisfactory operation or failure of the machine gun and mount. Each malfunction stated is followed by a list of

probable causes. The corrective action recommended is described opposite the probable cause.

b. Malfunctions which may occur for operator and crew are listed in TM 9-1005-212-10 or pertinent vehicle operator's manual.

Table 2-3 Organizational Troubleshooting

Malfunction	Probable cause	Corrective action
	Machine Gun	<i>Note.</i> For malfunctions encountered but not listed, or if corrective action does not remedy condition, notify direct support maintenance.
1. Failure to feed	a. Defective belt feed lever b. Defective extractor assembly c. Defective belt feed pawl spring d. Defective belt feed pawl e. Defective belt feed slide f. Defective belt holding pawl g. Defective belt holding pawl spring h. Defective cover latch spring i. Defective belt feed lever pin j. Defective extractor plunger or spring k. Defective extractor cam l. Defective cover latch m. Defective feed pawl	a. Replace b. Replace c. Replace d. Replace e. Replace f. Replace g. Replace h. Replace i. Replace j. Evacuate to direct support maintenance k. Evacuate to direct support maintenance l. Evacuate to direct support maintenance m. Replace
2. Failure to chamber	a. Defective T-slot b. Defective recoil plate c. Defective extractor feed cam	a. Replace bolt b. Replace bolt c. Evacuate to direct support maintenance
3. Failure to lock	a. Defective breech lock b. Defective breech lock cam c. Defective accelerator d. Defective T-lug stud	a. Evacuate to direct support maintenance b. Evacuate to direct support maintenance c. Evacuate to direct support maintenance d. Evacuate to direct support maintenance

Table 2-3. Organizational Troubleshooting—Continued

Malfunction	Probable cause	Corrective action
4. Failure to fire	a. Defective firing pin b. Defective trigger c. Sear spring weak or broken d. Faulty engagement of firing pin and sear notch e. Defective firing pin spring f. Improper timing g. Defective barrel extension	a. Replace b. Replace c. Replace d. Replace e. Evacuate to direct support maintenance f. Evacuate to direct support maintenance g. Evacuate to direct support maintenance
5. Failure to unlock	a. Defective breech lock b. Faulty breech lock cam clearance	a. Evacuate to direct support maintenance b. Evacuate to direct support maintenance
6. Failure to extract	a. Defective T-slot b. Defective extractor	a. Replace breechbolt b. Replace
7. Failure to eject	a. Defective firing pin b. Defective ejector c. Defective ejector spring	a. Replace b. Evacuate to direct support maintenance c. Evacuate to direct support maintenance
8. Failure to cock	a. Defective cocking lever b. Defective firing pin sear notch c. Defective cocking lever pin d. Defective sear e. Defective sear spring	a. Replace b. Replace c. Replace d. Replace e. Replace
9. Uncontrolled automatic fire	a. Defective sear b. Defective trigger c. Defective firing pin	a. Replace b. Replace c. Replace
10. Failure to load	a. Defective belt holding pawl or spring b. Defective feed pawl or spring c. Defective belt feed lever Elongated firing pin hole	a. Replace b. Replace c. Replace Replace breechbolt
11. Ruptured primers		
12. Sluggish operation	a. Improper timing b. Burred parts Tripod Mount	a. Evacuate to direct support maintenance b. Remove burrs
1. Failure to traverse	a. Defective traversing handwheel b. Defective traversing and elevating mechanism assembly	a. Evacuate to direct support maintenance b. Evacuate to direct support maintenance
2. Machine gun not secured to mount	a. Defective quick release pin b. Defective pintle lock c. Defective traversing and elevating mechanism assembly d. Defective tripod mount pintle	a. Evacuate to direct support maintenance b. Evacuate to direct support maintenance c. Evacuate to direct support maintenance d. Evacuate to direct support maintenance
3. Legs fail to stay open or locked	a. Defective sleeve latch b. Defective sleeve lock spring	a. Evacuate to direct support maintenance b. Evacuate to direct support maintenance

Section VI. ORGANIZATIONAL MAINTENANCE PROCEDURES

2-7. General

Inspect components for rust, corrosion, burrs, scored areas or foreign matter and remove. Inspect springs for deformation and replace if necessary. Inspect for damage to threads of screws, bolts, and other components. Inspect for appearance, proper assembly and functioning. Repair or replace unserviceable parts as authorized.

Note. Maintenance of some groups and assemblies are not authorized by the maintenance allocation chart (app C) to organizational maintenance. Insure that no work is being accomplished beyond the scope authorized to organizational maintenance. Evacuate to direct and general support maintenance for repairs when necessary.

2-8. Removal/Installation of Major Groups and Assemblies

Refer to TM 9-1005-212-10 for procedures on removal and installation of major groups and assemblies of Caliber .30 Machine Guns, M1919A4 and M1919A6 and Tripod Mount, M2. Instructions for Caliber .30 Machine Gun, M37 are contained in the pertinent vehicle operator's manuals.

2-9. Disassembly/Assembly of Major Groups and Assemblies

Disassemble/assemble in accordance with illustrations in appendix B. Refer to figure 2-1 for use of socket wrench 6147277 to remove barrel bearing from Machine Guns, M1919A6 and M37.

2-10. Cleaning, Inspection and Repair*a. Cleaning.*

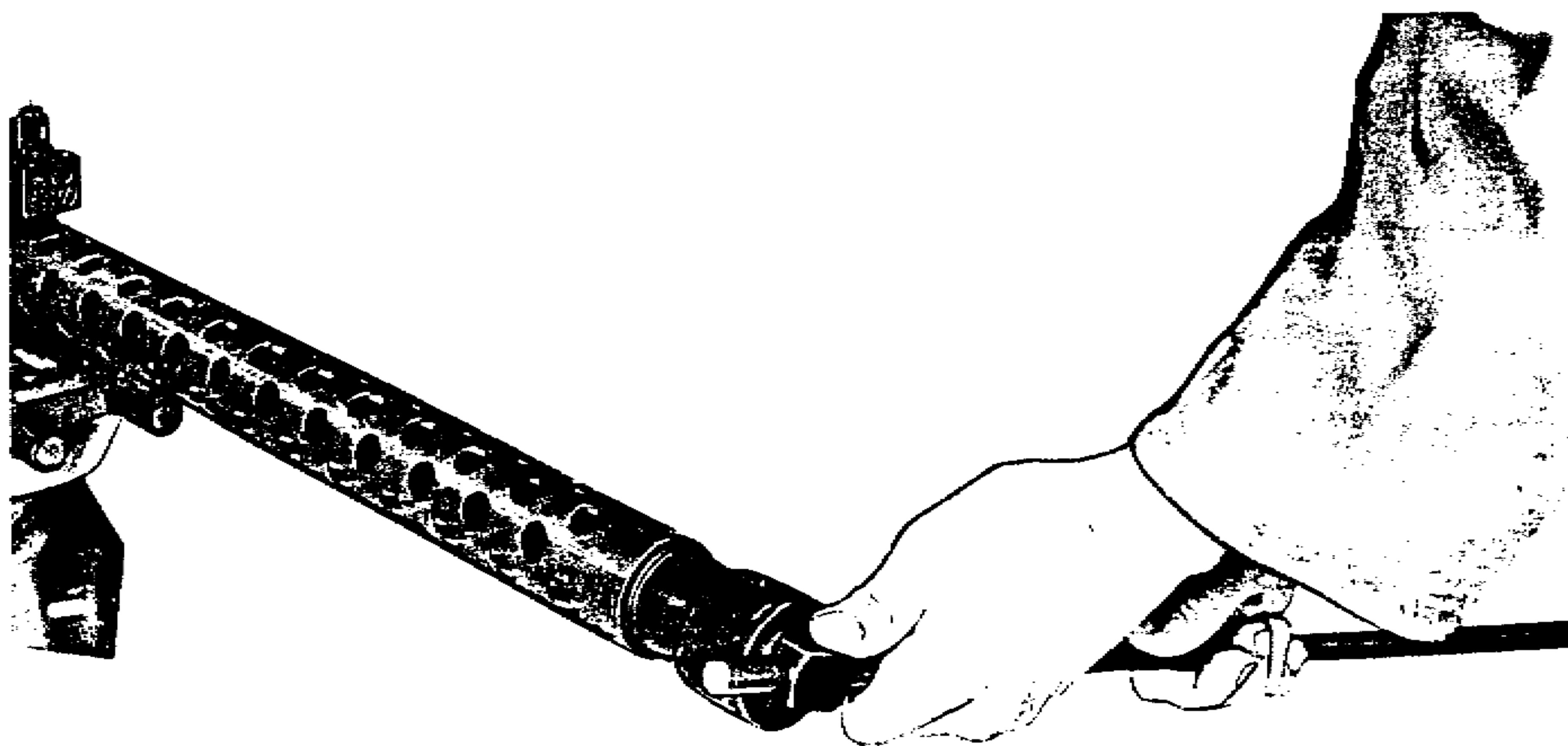
Note. During periods of inactivity, clean and lubricate every 90 days unless inspection reveals more frequent servicing is necessary.

(1) Refer to TM 9-1005-212-10 for a list of cleaning materials used in conjunction but not issued with this equipment.

(2) For specific cleaning instructions on Machine Guns, M1919A4 and M1919A6, and Tripod Mount, M2, refer to TM 9-1005-212-10.

(3) Refer to the pertinent vehicle operator's manual for instructions on cleaning Machine Gun, M37.

(4) On component parts which contain a hard carbon residue it may be necessary to clean



WE 61340

Figure 2-1. Use of socket wrench.

those parts with carbon removing compound, 6856-965-2332 (P-C-111). Depending on the amount of carbon residue, soak 2 to 16 hours, rinse with water and dry cleaning solvent (SD), brush with a stiff bristle brush, wipe the parts dry and lubricate.

Warning. Avoid skin contact with P-C-111.

The compound should be washed off thoroughly with running water if it comes in contact with the skin. A good lanolin base cream, after exposure to compound, is helpful. The use of rubber gloves and protective equipment is recommended.

b. Inspection and Repair. Refer to table 2-4.

Table 2-4. Organizational Maintenance Procedures

Group or assembly	Inspection	Repair	Reference
Machine Gun	Warning. Before starting an inspection, be sure to clear the weapon. Do not actuate the trigger until the weapon has been cleared. Inspect the chamber to insure that it is empty, and check to see that no ammunition is in position to be introduced.		
Shoulder gun stock group (M1919-A6 only)	Inspect to assure stock is secure. Nut on clamp must turn freely. Check clamp and wing nut for damaged threads. Inspect stock body for cracks.	Replace items 2, 3, 7, 8, 9, 17, 20, and 23, fig. B-1 and items 1, 2, 3, 4, 8, and 9, fig. B-5 if necessary. Evacuate to direct support maintenance.	Fig B-3
Back plate assembly	Adjusting screw must be tight, not below flush, or protruding more than 1 1/2 threads, slot either vertical or horizontal. Headless shoulder pin must be seated in its recess when adjusting screw is tight. Back plate assembly must be capable of being latched securely and must be free enough to be removed by hand. Check trigger safety (M37 only) for proper functioning.	Replace, if necessary. Evacuate to direct support maintenance for repair.	2, fig. B-1 1, fig. D-5
Bolt group (M1919A4 and M1919A6 only) and Driving spring assembly and bolt group (M37 only)	The ejector should return to neutral position when pulled to the side and released. Firing pin point should be smooth and well rounded. Firing pin should move freely in the bolt group. Sear should work smoothly in the guideways without binding. The angle on mating surface that engages the firing pin will be sharp without a feather edge. Driving spring for M1919A4 and M1919A6 must have a free length of 15 1/4 to 16 1/4 inches.	Replace items 1, 7 thru 11, 15, 17, and 18, fig. B-6 and items 5, 13 thru 17, 21, 22, and 23, fig. B-7, if necessary.	
Lock frame group	Headless shoulder pin (lock frame pin) must move freely under spring tension. Trigger cams must be free of distortion.	Replace items 1 and 3 thru 7, fig. B-8, if necessary.	
Barrel extension group	Breech lock will function freely with a minimum of looseness in its slot and forward beveled edges will be free from damage. Barrel locking spring must prevent rotation of the barrel/barrel assembly during firing of the weapon.	Replace items 1 and 3, fig. B-9, if necessary.	
Barrel/barrel assemblies	Inspect for pits large enough to cause extraction difficulties. Pits must not	Replace, if necessary.	7 and 8, fig. B-1 and 8, fig. B-

Table 2-1. Organizational Maintenance Procedure—Continued.

Group or assembly	Inspection	Repair	Reference
Cover group (M1919A4 and M1919A6)	be greater than the width of a land or groove or more than 3/8 inch in length. Cover will be held open by function cover catch assembly. The cover will operate freely in its travel. Functional components will operate freely. Cover latch will hold cover and back plate assembly securely.	Replace items 1 thru 5 and 7 thru 12, fig. B-10, if necessary.	
Cover group (M37 only)	Cover will be held open by function of cover detent panel. The cover will operate freely in its travel. Functional components must operate freely. Cover latch will hold cover and back plate assembly securely.	Replace items 1 thru 8 and 10 thru 13, fig. B-11, if necessary.	
Flash hider group (M1919A4 and M1919A6 only)	Check flash hider for carbon and for binding when assembled to front barrel bearing. Check clip assembly for looseness and set.	Evacuate to direct support maintenance for necessary repair.	18 and 19, fig. B-1
Bipod assembly (M1919A6 only)	Check for damaged threads and for missing or damaged components. Thumb screws must secure legs firmly.	Evacuate to direct support maintenance for necessary repair.	21, fig. B-1
Carrying handle assembly (M1919A4 and M1919A6 only)	Inspect for cracked or splintered handle and damaged threads. Body must be secure to barrel jacket when tight.	Replace, if necessary. After assembling to machine gun, stake screw MS 90725-6 (3, fig. B-13) <i>slightly</i> over nut. Evacuate to direct support maintenance for necessary repair.	23, fig. B-1
Casing and barrel jacket group	Elevation and windage screws must function freely. Front sight must be in alignment. Blade must be securely fastened in place. Barrel jacket must not cause binding of barrel/barrel assembly in front barrel bearing. Barrel jacket must be held securely to casing by machine screw.	Replace items 12, 20, 22, 23, and 24, fig. B-14 and items 12, 17, 18, 19, 21, 26, and 29, fig. B-15 if necessary.	
Tripod Mount			
Traversing and elevating mechanism assembly	Check to assure mechanism traverses and elevates properly.	Replace items 2, 3, and 6, fig. B-18, if necessary.	
Head and leg groups	Check to assure head and leg groups can be secured.	Replace items 1, 2, and 3, fig. B-19, if necessary.	

CHAPTER 3

DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

3-1. Special Tools and Equipment

Special tools and equipment required by maintenance to perform the repair operations described in this manual are listed and illustrated in appendix B.

3-2. Repair Parts

Direct support, general support, and depot maintenance repair parts are listed and illustrated in appendix B.

Section II. TROUBLESHOOTING

3-3. General

a. Refer to table 3-1 for troubleshooting procedures for direct support and general support

maintenance.

b. Refer to table 2-3 for organizational troubleshooting procedures.

Table 3-1. Direct and General Support Troubleshooting

Malfunction	Probable cause	Corrective action
	<i>Machine Gun</i>	
1. Failure to feed	a. Defective extractor cam b. Defective extractor plunger or spring c. Defective cover latch	a. Replace b. Replace c. Replace
2. Failure to chamber	Defective extractor feed cam	Replace
3. Failure to lock	a. Defective breech lock b. Defective breech lock cam c. Defective accelerator d. Defective T-lug stud	a. Replace b. Replace c. Replace d. Replace barrel extension
4. Failure to fire	e. Defective driving spring assembly a. Defective firing pin spring or firing pin b. Improper timing c. Defective barrel extension	e. Replace a. Replace b. Adjust timing c. Replace
5. Failure to unlock	a. Defective breech lock b. Faulty breech lock cam clearance	a. Replace b. Adjust
6. Failure to eject	a. Defective ejector b. Defective ejector spring c. Deformed T-slot	a. Replace b. Replace c. Replace barrel extension
7. Sluggish operation	Improper timing	Time correctly
	<i>Tripod Mount</i>	
1. Failure to traverse	Defective traversing and elevating mechanism assembly	Repair or replace
2. Machine gun not secured to mount	a. Defective quick release pin b. Defective pintle lock c. Defective traversing and elevating mechanism assembly d. Defective tripod mount pintle	a. Repair or replace b. Repair or replace c. Repair or replace d. Replace
3. Legs fail to stay open or locked	a. Defective sleeve latch b. Defective sleeve lock spring	a. Repair or replace b. Replace

Section III. PREEMBARKATION INSPECTION OF MATERIEL IN UNITS

ALERTED FOR OVERSEAS MOVEMENT

3-4. General

This section provides specific instructions for guidance during inspection by direct and general support personnel of materiel in alerted units scheduled for oversea duty. Inspection is made for the purpose of:

- a. Determining serviceability.
- b. Recognizing conditions that would cause failure.
- c. Assuring proper maintenance at prescribed levels.
- d. Determining the ability of a unit to accomplish its maintenance and supply mission.

3-5. Inspection Procedures

Warning. Before starting and inspection, be sure to clear the weapon. DO NOT actuate the trigger until the weapon has been cleared. Inspect the chamber to insure that it is empty, and check to see that no ammunition is in position to be introduced.

- a. Exercise judgment regarding degree of inspection of integral parts within assemblies.
- b. Refer to TB 9-1000-247-35 and table 3-2 for inspection criteria.

Table 3-2. Preembarkation Inspection

Item	Inspection criteria
<i>Machine gun</i>	
Breech bore unlined barrels	Preembarkation—Maximum 0.304 inch (Use gage 5564343.)
Barrel erosion for lined barrels	Use barrel erosion kit 5910297. Refer to TM 9-4933-208-34.
Bolt group	Recoil plate will be flush

Table 5-2. Preembarkation Inspection—Continued

Item	Inspection criteria
Firing pin hole	with face of bolt and firmly seated. Maximum 0.081 inch (Use gage 5077203.) Elongation of hole is also a cause for rejection.
Firing pin	Minimum 0.060 inch Maximum 0.068 inch (Use gage 7319929.)
Bottom plate group	Breech lock can will float slightly.
Back plate	Buffer plate must have a 3/16 inch projection. Adjusting screw will be flush or not protrude more than 1 1/2 threads beyond end of buffer tube. Slot either vertical or horizontal.
Trigger pull	Minimum 7 pounds Maximum 12 pounds (Use fixture 7274758.)
Timing	Minimum 0.030 inch Maximum 0.120 inch (Use gage 7319928.)
<i>Mount</i>	
Leg and head group	The distance between sleeve and collar is not to be less than 1/4 or more than 1/2 inch before locking.
Clearance between pintle shoulder and tripod head	Minimum clearance 0.003 inch.
Elevating and traversing mechanism assembly	Indicators on handwheel and elevating scale plate of the upper elevating screw must coincide at "0" reading.

Section IV. GENERAL MAINTENANCE

3-6. General

This section provides instructions on general maintenance procedures to be used by direct and general support maintenance in maintaining the machine gun and mount.

3-7. General Maintenance Repair Methods

a. Disassembly and Assembly Procedures.

- (1) In disassembling the machine gun or mount, remove the major groups and assemblies.

(Refer to figures B-1, B-2, B-18, B-19, T1 9-1005-212-10 and pertinent vehicle operator's manual.) Groups and assemblies may be disassembled, as necessary, into individual parts.

(2) Complete disassembly of a unit is not always necessary in order to make a required replacement or repair. Good judgment should be exercised to keep disassembly and assembly operations to a minimum.

(3) During assembly, assemblies and groups should be assembled first, then installed.

to form a complete unit. Lubricate sliding surfaces before assembly.

b. Replacement of Parts.

(1) Parts will be replaced when unserviceable.

(2) When assembling a unit, replace pins and cotter pins, if available. If screws, nuts, washers, and retainers are damaged they will be replaced.

(3) All springs will be replaced if they are broken, kinked, deformed, fail to function properly, or fail to meet specific requirements.

(4) If a new part is not available, a reconditioned part may be substituted. Such reconditioned parts should be examined carefully to determine their serviceability.

Section V. REPAIR INSTRUCTIONS FOR MACHINE GUNS

3-8. Specific Repair Instructions

For specific repair instructions of the machine gun refer to table 3-3.

Table 3-3. Direct and General Support Maintenance Procedures For Machine Gun

Group or assembly	Disassembly/assembly	Inspection	Repair	Tests and adjustments
		Warning. Before starting an inspection, be sure to clear the weapon. Do not actuate the trigger before the weapon has been cleared. Inspect the bore and chamber to insure that it is empty and free from obstructions. Check to see that no ammunition is in position to be introduced.		
Machine gun	Figs B-1 and B-2	Visually inspect machine gun for general appearance.	Refinish components as necessary. Repair or replace unserviceable components.	Check timing; use gage 7319928. Refer to figures 3-1 and 3-2. Check trigger pull, maximum 12 lb, minimum 7 lbs. Use fixture 7274758.
Shoulder gun stock group (M1919A6 only)	Fig B-3	Check clamp and wing nut for damaged threads. Check clamping groups for locking action. Inspect stock body for cracks.	Replace items 1 and 2, figure B-3, if necessary.	
Back plate assembly	Figs B-4 and B-5 Back plate assembly should fit firmly in the casing and barrel jacket group, but should be free enough to be removed by hand.	Adjusting screw must be tight. Headless shoulder pin will be seated in its recess when adjusting screw is tight. Buffer disks will be free from burrs and tears and edges must be smooth. Back plate assembly should fit firmly in the receiver but must be free enough to be removed by hand.	Replace items 1 thru 8, figure B-4 and items 1 thru 15 except 9 and 10, figure B-5, if necessary.	Adjusting screw must not be below flush, or protruding more than 1 1/2 threads, slot either vertical or horizontal. Adjusting screw must be tightened to 22-26 ft. lbs. torque. Buffer plate must have a 3/16 inch projection.
Bolt group (M1919A4 and M1919A6) and driving spring assembly and bolt group (M37 only)	Figs B-6 and B-7	All components should be free of sharp corners and burrs. The ejector should return to neutral position when pulled to the rear and released. Firing pin point should be smooth and well rounded.	Replace items 1 thru 18 except 6, 14, and 16, figure B-6 and items 1 thru 23 except 12 and 20, figure B-7, if necessary. Pin (2, fig B-6) must be staked at both ends.	Check firing pin protrusion: minimum 0.060 inch to maximum 0.068 inch. Use gage 7319929 (figures 3-3 and 3-4). Check firing pin hole: maximum 0.081 inch. Use gage 5077203 (figures 3-5 and 3-6).

Table 3-3. Direct and General Support Maintenance Procedures For Machine Gun—Continued

Group or assembly	Disassembly/assembly	Inspection	Repair	Tests and adjustments
Bolt group— Continued				Driving spring of M1919A4 and M1919A6 must have free length of 15-1/4 to 16-1/4 inches. Driving spring for M37 must have free length of 12-1/2 to 13-1/2 inches.
Lock frame group	Fig B-8	Firing pin should move freely in the bolt group. Sear should work smoothly in the guideways without binding. The angle on mating surfaces that engages the firing pin will be sharp without a feather edge. Check the driving spring assembly for deformation and proper functioning. Check to assure there is no binding between accelerator and depressors. Accelerator lugs are to be free of deformation affecting functional parts. Lock frame depressors are to work freely in the barrel extension. The guide pin on barrel extension plunger will be free from damage and/or distortion. The lock frame guides will be tight and free of damage. Headless shoulder pin (lock frame pin) will move freely under spring tension. The trigger cams will be free of distortion and burrs.	Replace items 1 thru 8, figure B-8, if necessary.	
Barrel extension group	Fig B-9	Barrel extension will be free of sharp edges and burrs. Breech lock will function freely with aluminum of looseness in its slot, and forward beveled edges will be free from damage. Barrel locking spring must prevent rotation of the barrel/barrel assembly during firing of the weapon	Replace items 1 thru 4, figure B-9, if necessary.	
Barrel/barrel assemblies	7 and 8, fig B-1, and 8, fig B-2	Barrel/barrel assemblies will pass a visual inspection. They must be clean and free of corrosion. For standards of serviceability refer to paragraph 3-9.	Replace items 7 and 8, figure B-1 and item 8, figure B-2, if necessary.	Para 3-9

Table 3-3. Direct and General Support Maintenance Procedures For Machine Gun—Continued

Group or assembly	Disassembly/assembly	Inspection	Repair	Tests and adjustments
Cover assembly	Figs B-10 and B-11	Cover assembly will be held open by function of cover catch assembly, on M1919A4 and M1919A6 and by cover detent on M37. The cover assembly will operate freely when opening and closing. Functional components will operate freely. Cover latch will hold cover assembly and back plate assembly securely.	Replace items 1 thru 13, figure B-10 and items 1 thru 19 except 16 and 18, figure B-11, if necessary.	
Flash hider group (M1919A4 and M1919A6 only)	18 and 19, fig B-1	Check flash hider for carbon and for binding when assembled to front barrel bearing. Check clip assembly for looseness or set.	Replace items 16 thru 20, figure B-1, if necessary. Refer to figure 3-7 for procedures for removing hard carbon residue with carbon removing reamer assembly.	
Bipod assembly (M1919A6 only)	Fig B-12	Check for bent or stripped screw threads and stripped screw holes. Check legs for damaged or missing components. Thumb screws must secure legs firmly.	Replace items 1 thru 9, figure B-12, if needed. Screw (7, fig -12) must be staked heavily.	
Carrying handle assembly (M1919A4 and M1919A6 only)	Fig B-13	Check for damaged or missing parts. Inspect handle for cracks or splintering.	Replace items 1 thru 6, figure B-13, if necessary.	
Casing and barrel jacket group	Figs B-14, B-15, B-16 and B-17	Inspect in accordance with standards in paragraph 3-10.	Replace items 1 thru 9, 12, 15 thru 24, and 30 thru 32, figure B-14, if necessary. Replacement of items 15 and 16 is restricted to general support maintenance. Replace items 1 thru 9, 12, 14 thru 26, 28 thru 32 and 34 thru 36, fig B-15 if necessary. Replacement of item 28 is restricted to general support maintenance. For repair of front sight group replace items 1 thru 11 except 8, figure B-16	

Table 3-3. Direct and General Support Maintenance Procedures For Machine Gun—Continued

Group or assembly	Disassembly/assembly	Inspection	Repair	Tests and adjustments
Casing and barrel jacket group—continued			as necessary. For repair of retracting bar group replace items 1 thru 8, figure B-17 as necessary. Body (11, fig B-16) must be staked into screw (12, fig B-14 and 12, fig B-15) and screw (1, fig B-16). Shoulder bolt (1 fig B-16) will be staked lightly in two places, 180 degrees apart. Barrel bearing lock (17, fig B-1 and 26, fig B-15) will be staked into the notches of the barrel jacket and barrel bearing. Choose notch which eliminates possibility of slot and bearing hole being adjacent. Barrel jacket must be staked into slot of screw (14, fig B-14 and 27, fig B-15) in two places. Screw (18, fig B-14 and 23, fig B-15) must be drawn up tight, backed off 1/6 to 1/4 turn, and staked in two places on breech lock cam (19, fig B-14 and 24, fig B-15). Stop, short round, front cartridge (21, fig B-14) must be staked into slots of stop, short round (20, fig B-14) in two places. Rivet (30, fig B-14 and 34, fig B-15) must be ground flush inside and outside.	

3-9. Serviceability Standards for Barrels/ Barrel Assemblies

Barrels of barrel assemblies will pass a visual inspection utilizing a gun barrel reflector (figure 3-8). They must be clean and free of corrosion. The following standards of serviceability are applicable:

a. Pits in the chamber ARE allowable if they are not large enough to cause extraction difficulties.

b. Pits greater than the width of a land or groove and more than three-eighths inch in length ARE cause for rejection.

c. Scattered or uniformly fine pits or fine pits in a densely pitted area ARE allowable.

d. Tool marks or scratches are acceptable regardless of length. These marks will appear as lines running laterally in the grooves or may run spirally across the top of the lands.

e. Definitely ringed bores or bores ringed sufficiently to bulge the outside surface of the barrel or barrel assembly ARE cause for rejection.

f. Lands that appear dark due to coating of gilding metal from projectiles should NOT be cause for rejection.

g. Stellite lined barrel assemblies can be identified by a gap, located at the junction of the liner and the tube. Presence of this gap is NOT cause for rejection.

h. Serrations will be well defined so as to retain barrel/barrel assembly in its setting by the locking spring.

i. Barrels will be rejected when reject limit on breech bore gage is reached (figure 3-9).

j. Refer to TM 9-4933-208-34 for use of the barrel erosion gage on barrel assemblies.

Caution. Never attempt to check or gage a "hot" barrel or barrel assembly.

3-10. Serviceability Standards for Casing and Barrel Jacket Group

a. Casing Group.

(1) Steel trunnion block will NOT be cracked or severely damaged (figure 3-10). Chrome plated trunnion blocks are preferred for Machine Guns, M1919A6 and M37. Weapons with unplated trunnion block will not be replaced unless grooves (damaged areas) exceed 0.010 inch in depth (figure 3-11) measured from the adjacent flat surface. Serviceability of chrome plated trunnion blocks with evidence of chipped plate in areas that may affect feeding of the weapon will be governed by criteria indi-

cated in figures 3-12 and 3-13. Chrome flaking caused by feathered edges will NOT make weapon unserviceable. Chrome plated trunnion blocks are easily identified by the aluminum colored appearance of the top rear flat surface.

(2) The side plate assembly will be straight and will have no sharp corners. Bolt handle will not bind against any portion of the slot in side plate.

(3) Top plate group will not be bulged and will be free of dents. Cocking lever operating slot will be smooth with edges free of burrs and sharp corners.

(4) The bottom plate group will be straight and tightly riveted.

(5) The sight bracket will fit tight and be free of distortion. Component parts of the rear sight will not be distorted so as to interfere with functioning. Elevation and windage screws will function freely. The front sight will be in alignment and free from distortion. The blade will be securely fastened in place. Front sight will raise and lower without binding but will not fit loosely on the machine gun.

(6) Rivets must not be loose. The rivets in the receiver are not considered "loose" until there is perceptible movement between components, interference with functioning of the weapon, or possibility of the loss of the rivet. To determine the extent of loose rivets, try to insert a 0.001 inch feeler gage between the riveted components, top and bottom plate. The feeler gage must go between the riveted components for their entire length before the rivets are loose enough for turn-in of the weapon as unserviceable. Entrance of the gage at one point only is not cause for rejection.

(7) Receivers that will accept 0.010 inch feeler gage freely and without bind between side plates and trunnion will be rejected. However, those receivers that accept the 0.010 inch feeler gage freely in the area 1 inch from rear end of the trunnion will be acceptable.

(8) Markings must be legible.

b. *Barrel Jacket Group.* The barrel jacket will not be damaged so as to cause binding of the barrel assembly in the front barrel bearing. The barrel jacket will be held securely to the receiver by the machine screw.

c. *Retracting Bar Guide Group (M37 Only).* The retracting bar guide spacer should be firmly secured to the casing assembly. Check for missing or damaged components. If locking wire is broken or missing, replace. The retracting bar lock should function freely.

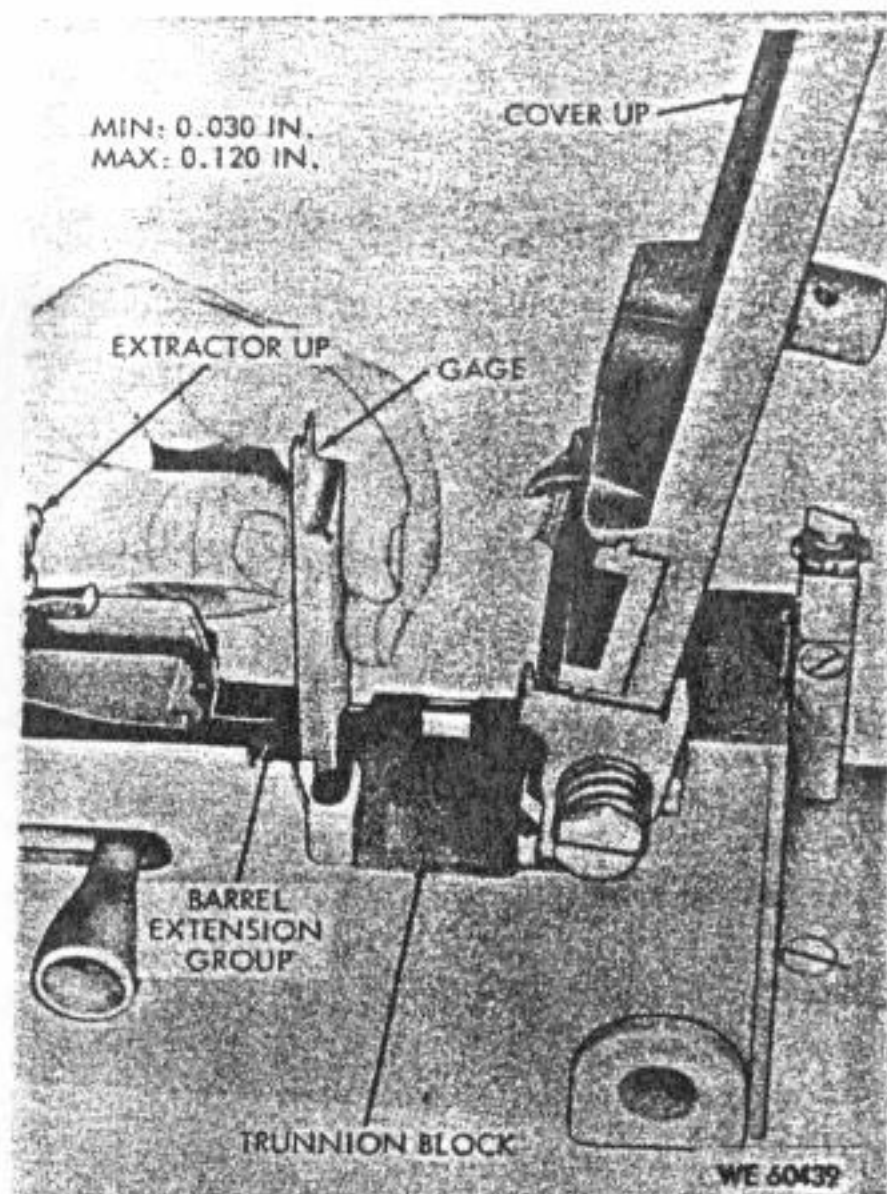


Figure 3-1. Maintenance procedures to determine serviceability of timing for Machine Guns, M1919A4 and M1919A6.

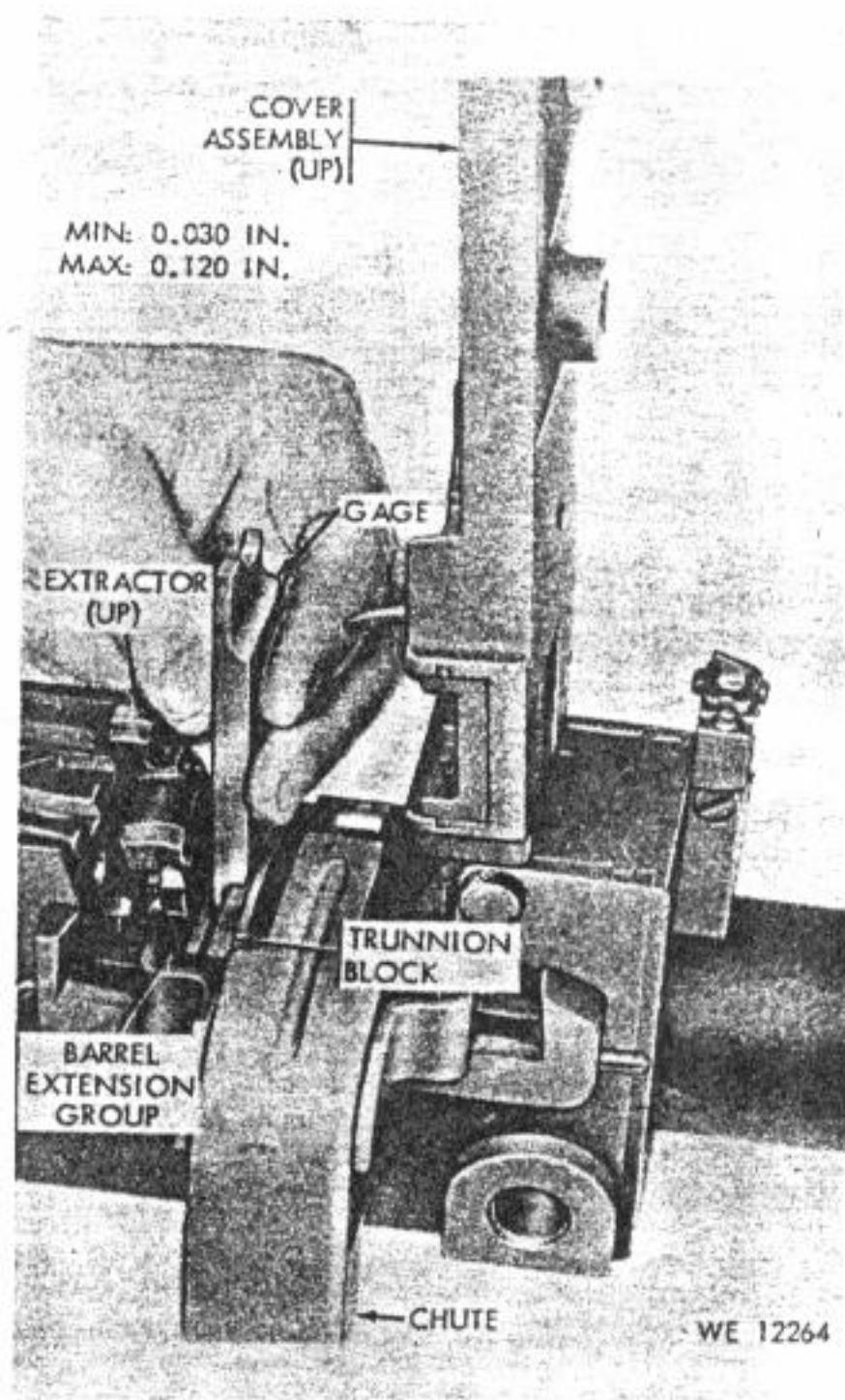


Figure 3-2. Maintenance procedures to determine serviceability of timing for Machine Gun, M37.

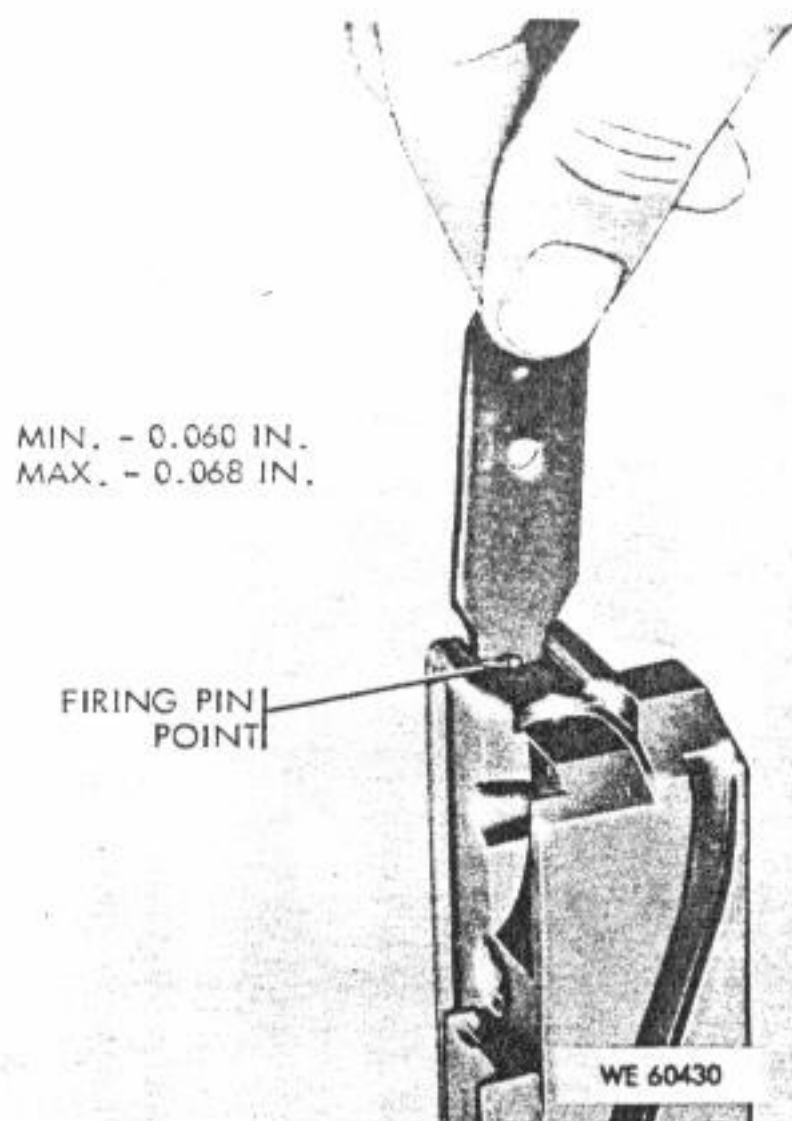


Figure S-3. Maintenance procedures to determine serviceability of firing pin protrusion for Machine Guns, M1919A4 and M1919A6.

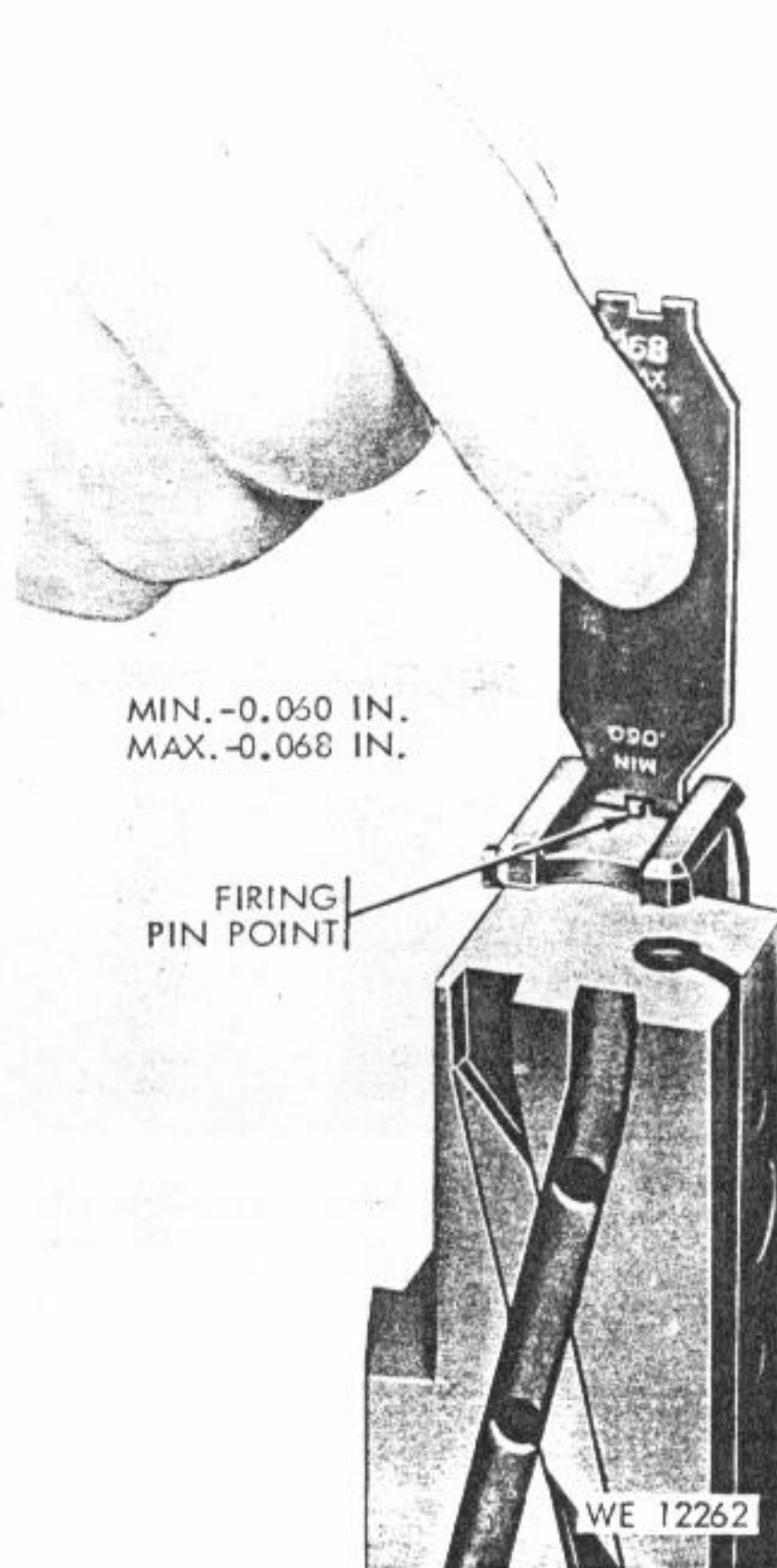


Figure S-4. Maintenance procedures to determine serviceability of firing pin protrusion for Machine Gun, M37.

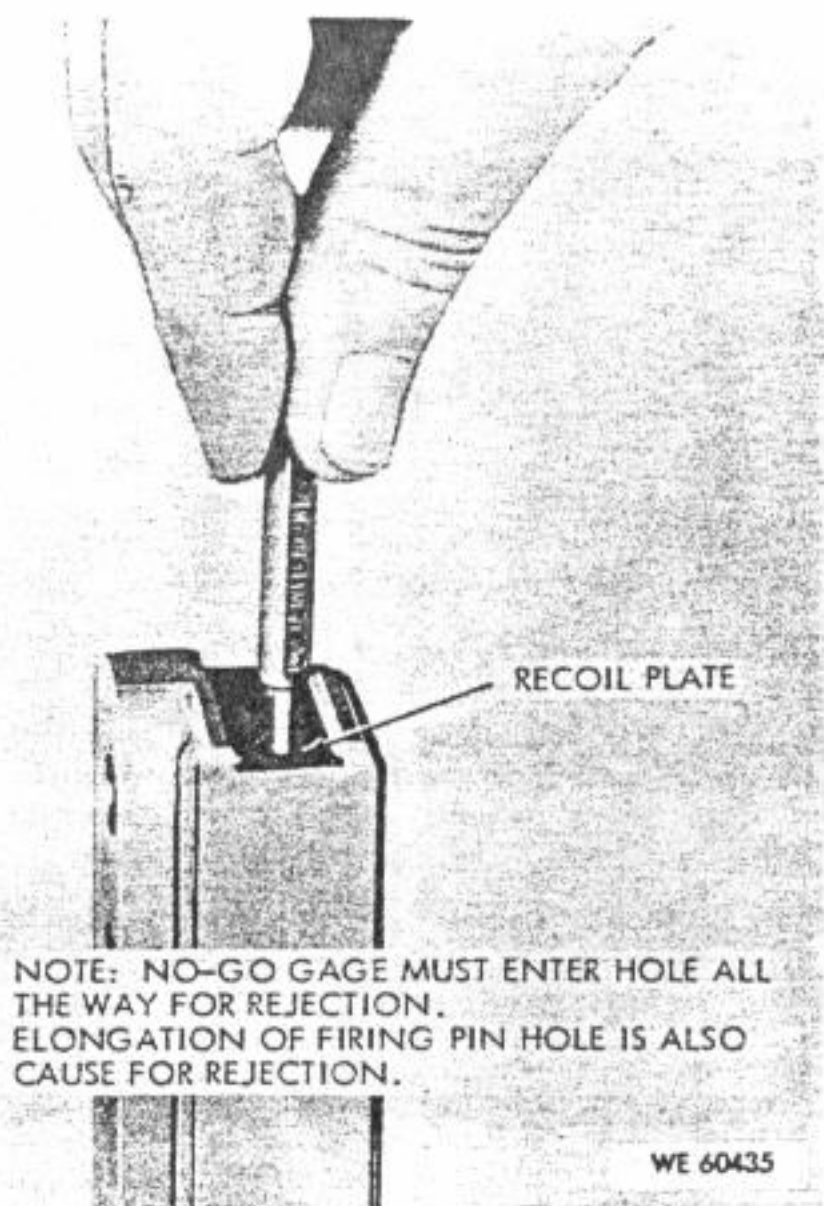


Figure 3-5. Maintenance procedures to determine serviceability of firing pin hole for Machine Guns, M1919A4 and M1919A6.

NOTE: NO GO GAGE MUST ENTER HOLE ALL THE WAY FOR REJECTION. ELONGATION OF FIRING PIN HOLE IS ALSO CAUSE FOR REJECTION.

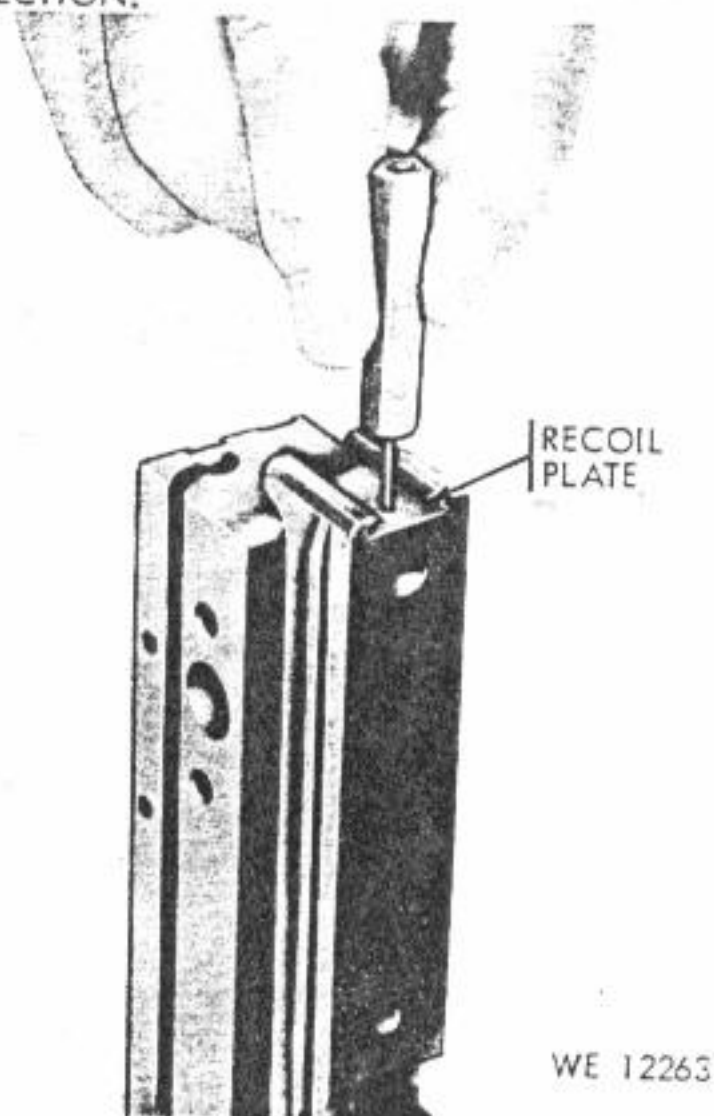


Figure 3-6. Maintenance procedures to determine serviceability of firing pin hole for Machine Gun, M37.

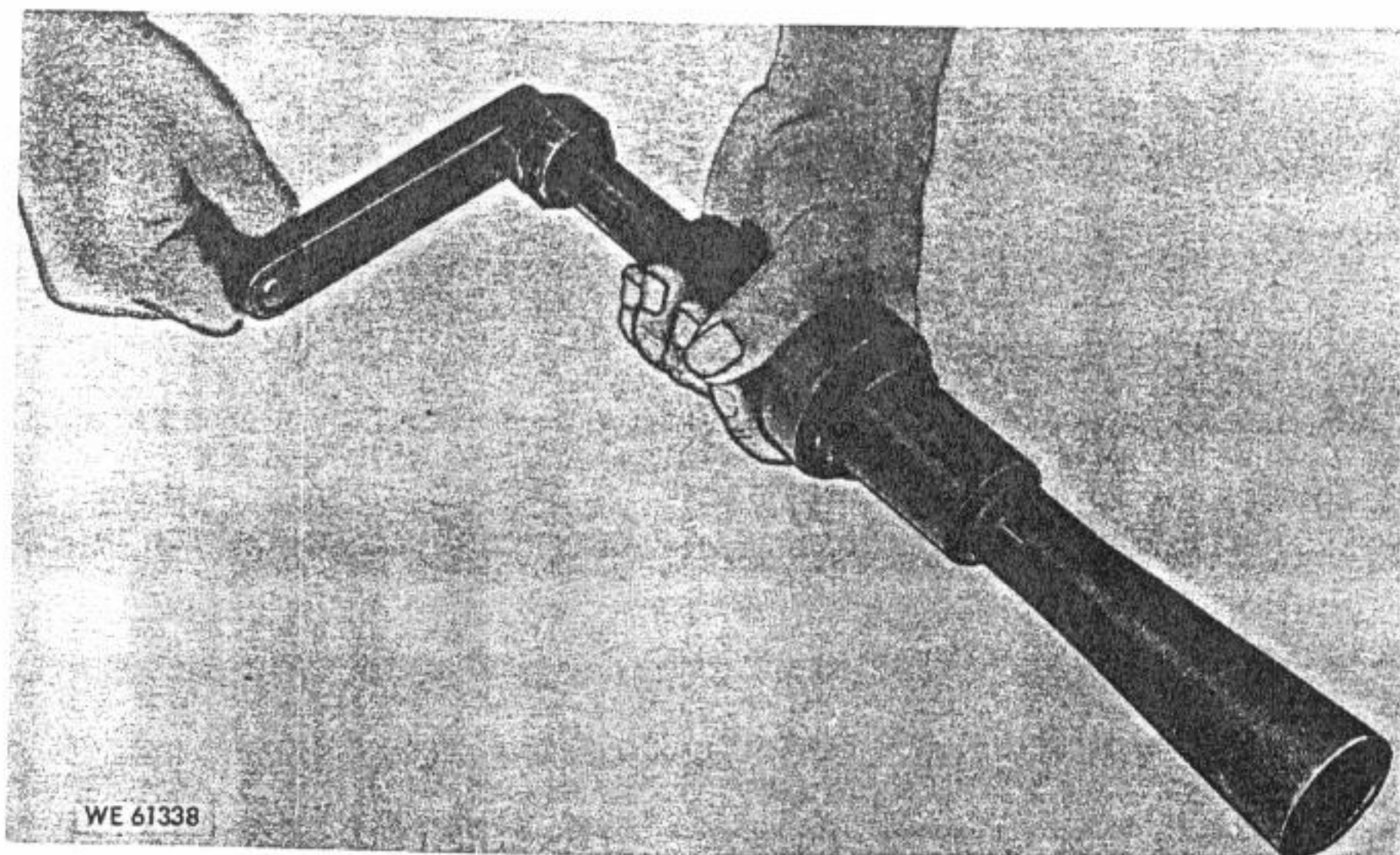


Figure 3-7. Maintenance procedure for removing carbon from flash hider.

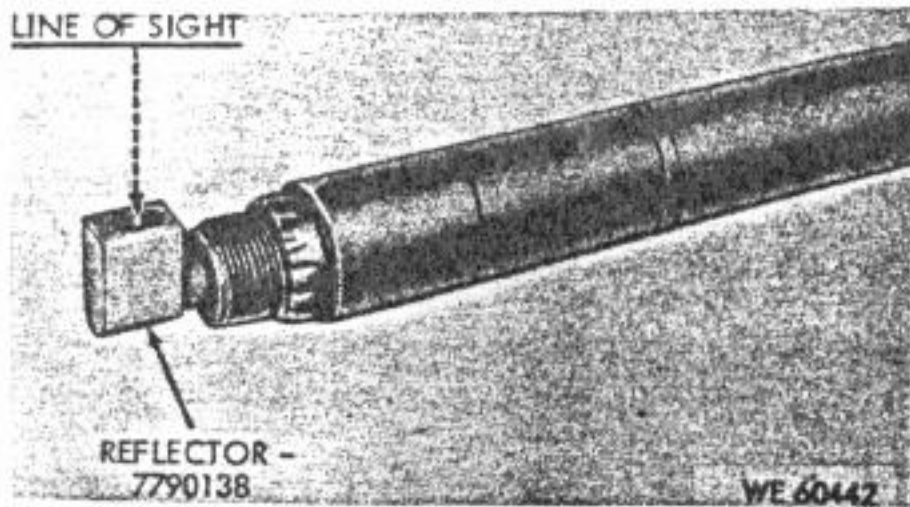


Figure 3-8. Maintenance procedures for checking barrel or barrel assembly with gun barrel reflector.

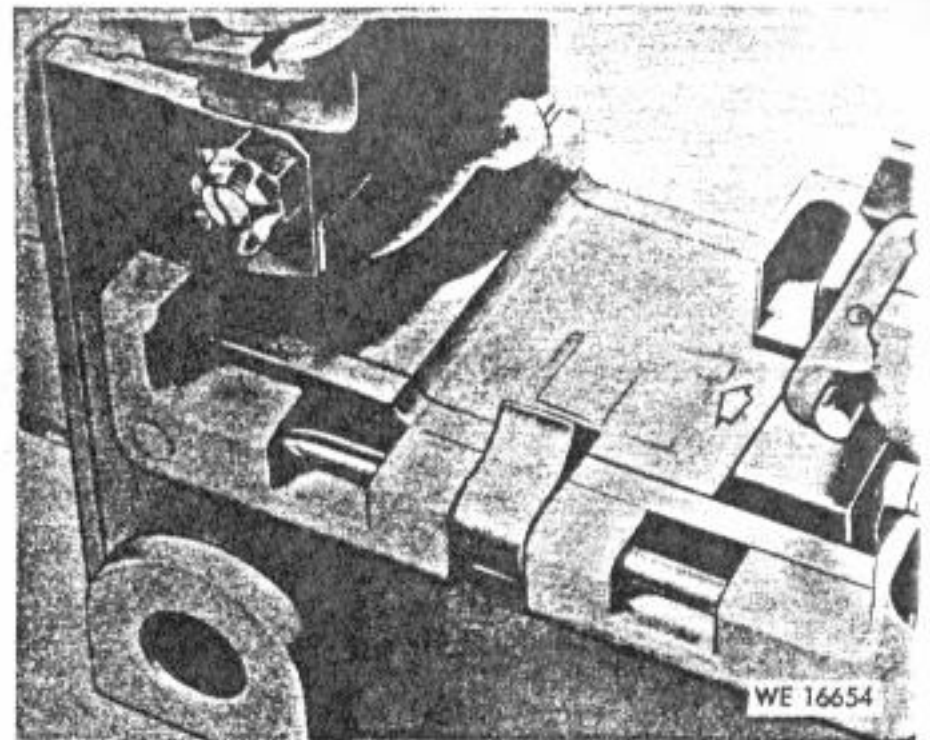


Figure 3-11. Maintenance procedures for determining serviceability of chrome-plated trunnion block with damage exceeding 0.010 inch—NOT acceptable.

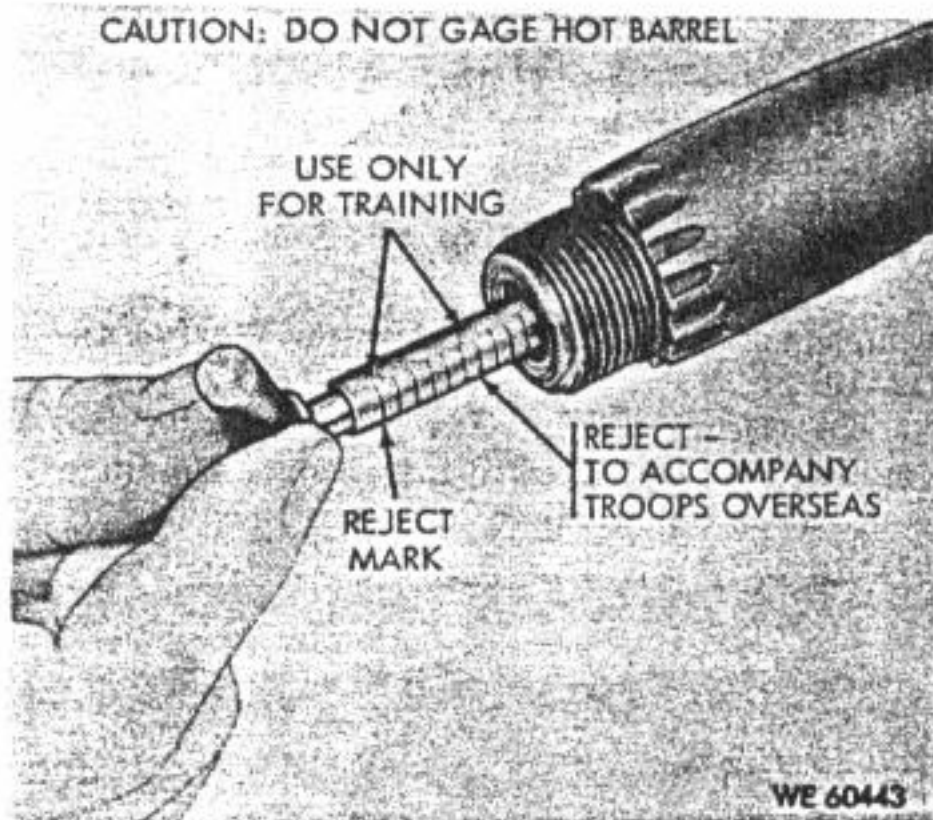


Figure 3-9. Maintenance procedures for determining serviceability of barrels with breech bore gage.

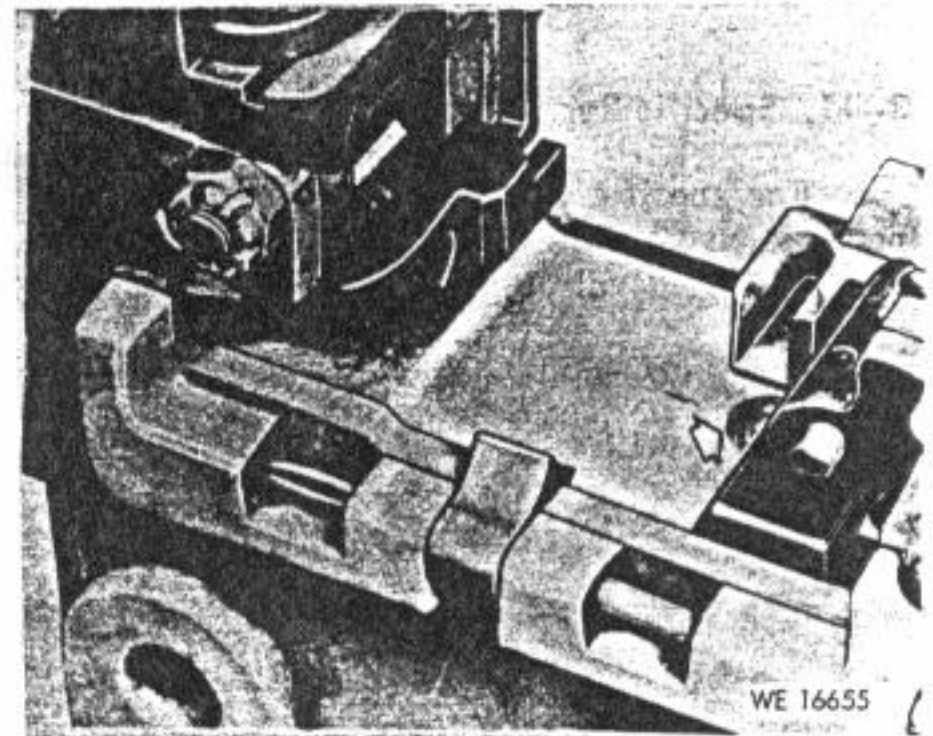


Figure 3-12. Maintenance procedures for determining serviceability of chrome-plated trunnion block with heavy chipped area—NOT acceptable.

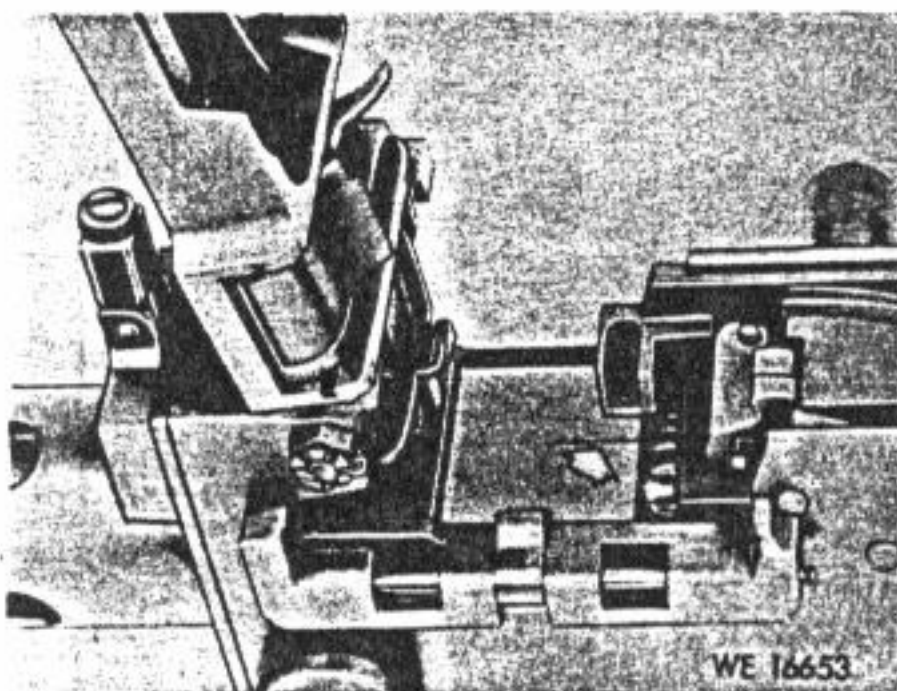


Figure 3-10. Maintenance procedures for determining serviceability of cracked steel trunnion block—NOT acceptable.

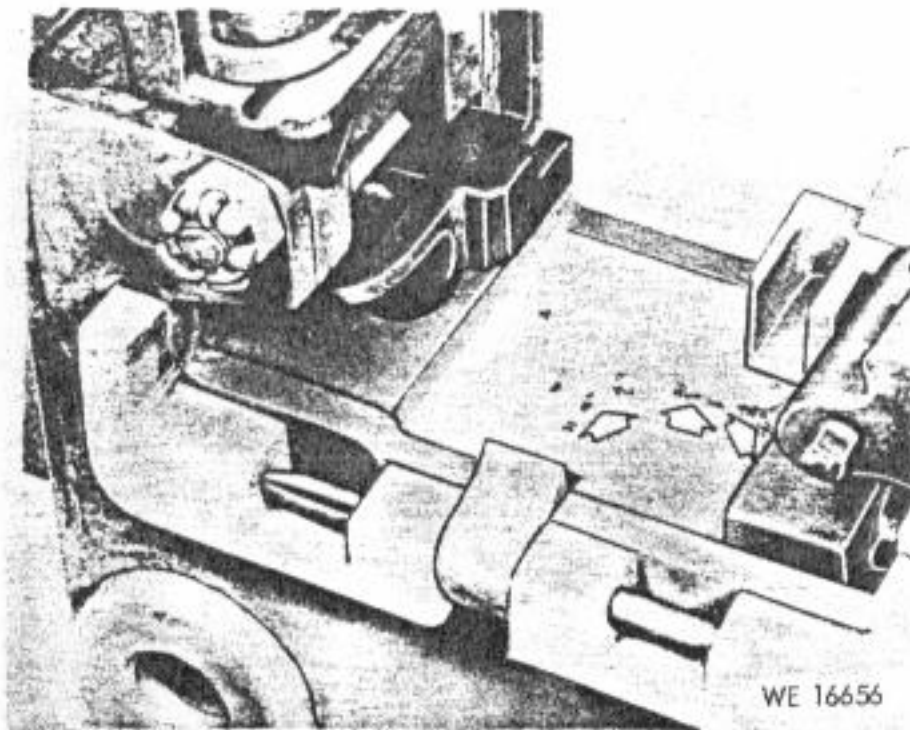


Figure 8-13. Maintenance procedures for determining serviceability of pitted and slightly chipped trunnion block—ACCEPTABLE.

Section VI. REPAIR INSTRUCTIONS FOR TRIPOD MOUNT, M2

3-11. Specific Repair Instructions

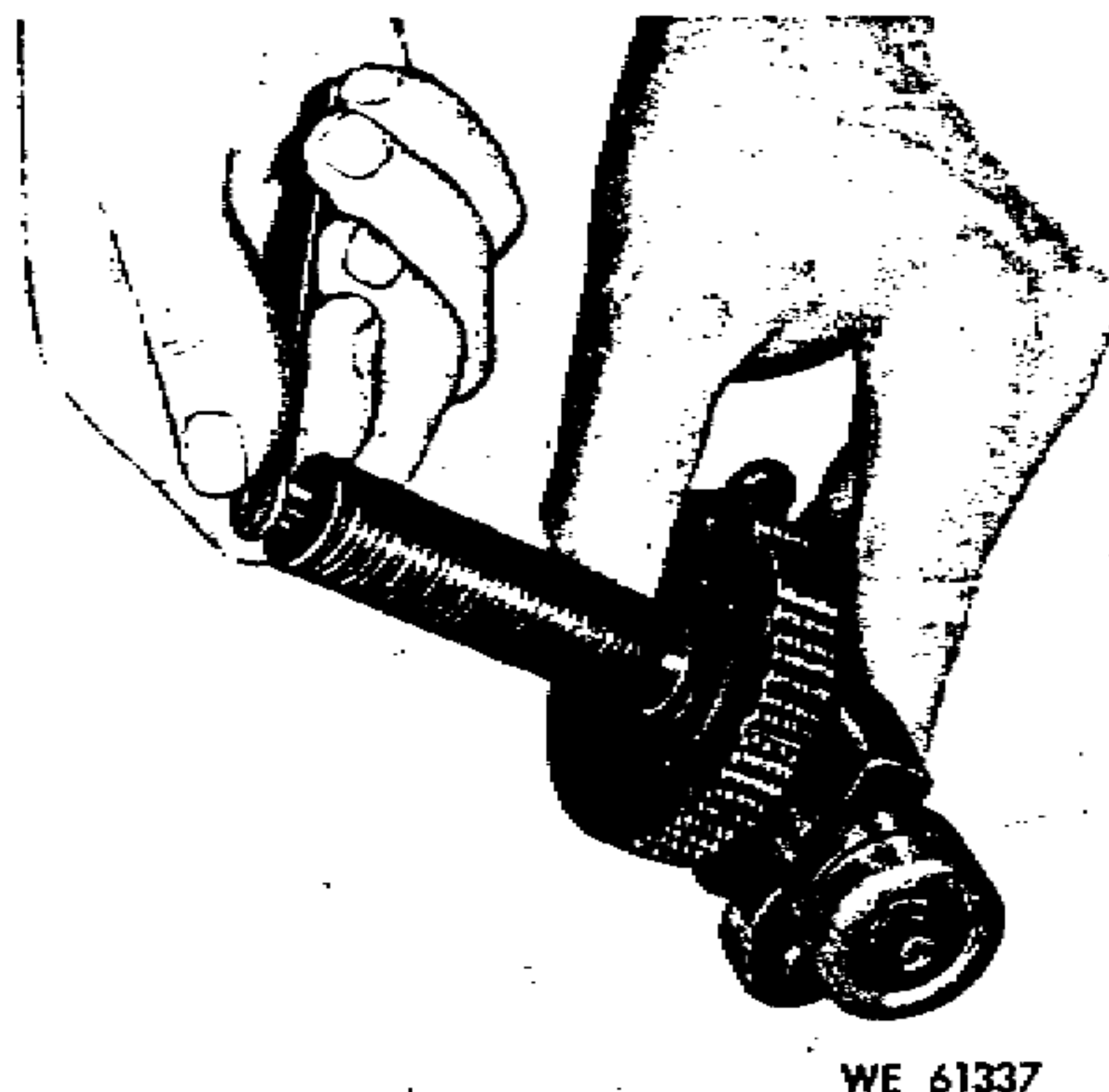
- a. For specific repair instructions of the Tripod Mount, M2, refer to table 3-4.
- b. For removal and installation of major

groups and assemblies, refer to TM 9-1005-212-10.

- c. Disassembly of the traversing and elevating mechanism is restricted to the absolute minimum required to replace defective components.

Table 3-4. Direct and General Support Maintenance Procedures for Tripod Mount

Group or assembly	Disassembly/assembly	Inspection	Repair	Tests and adjustments
Tripod mount		Visually inspect tripod mount for general appearance. Check to insure that all components are serviceable.	Repair or replace unserviceable components.	
Traversing and elevating mechanism assembly	Fig B-18 To disassemble/assemble upper elevating screw stop refer to figure 8-14.	Check for missing plug in lower end of sleeve. Check upper elevating screw stop and traversing slide lock lever for proper functioning. Check lower elevating screw stop spring and lock lever for tension and fit of spring in dovetailed spring seat. Test upper and lower elevating screws for binding. Check the dial pointer for looseness. In the elevating handwheel check headless pin for functioning on click ring and setting of handwheel with pointer. In the traversing handwheel check function of click pin, union nut and scale dial and check traversing screw for function with traversing handwheel (screw should not bind). Markings must be legible.	Replace items 1 thru 36, except 16, 18, 22, 25, and 29, fig B-18, if necessary.	Dial Pointer on handwheel and designation plate of upper elevating screw must coincide at "O" reading.
Head and leg groups groups	Fig B-19	Check front leg to insure that it opens and closes without binding. Check functioning of sliding sleeve and sleeve lock latch on right rear leg. In the tripod head, check pintle, bolt and nut for damaged threads, burs, and missing cotter pin. Check tripod head for cracks and burs. Check function of pintle and lock assembly. Check setscrew for staking. Check tension of helical compression springs in lock assembly. Check bearing for burs. Check pintle lock release cam for damage and pin for looseness. Check lock assembly housing screws for looseness and burs.	Replace items 1 thru 30 except 16, 25, 27, and 28, figure B-19, if needed.	The distance between sleeve and collar is not to be less than one-quarter or more than one-half inch before locking. Minimum clearance between pintle shoulder and tripod head 0.003 inch.



WE 61337

Figure 3-14. Maintenance procedures for utilizing screw stop tool on upper elevating mechanism of Tripod Mount, M2.

Section VII. DEPOT MAINTENANCE INSTRUCTIONS

3-12. General

a. Depot maintenance instructions are contained in USAWECOMDMWR 100-212 which is available through Commanding General, Headquarters, U. S. Army Weapons Command,

ATTN: AMSWE-SMM-SA, Rock Island, Illinois 61201.

b. Repair parts, special tools and equipment are listed in appendix B of this manual.

CHAPTER 4

FINAL INSPECTION

4-1. General

The machine gun and mount must meet the limits of serviceability as indicated in tables 3-3 and 3-4.

4-2. Function and Firing Tests

a. The machine gun that has been repaired should be function fired whenever possible, to assure proper operation. The machine gun that fails to meet functioning and firing tests is to

be corrected by replacement of defective components.

b. Upon completion of firing, machine gun will be properly cleaned and lubricated.

4-3. Completion of Inspection

When the machine gun and/or mount have been restored to a completely serviceable condition, it shall be certified that the item is acceptable for "return to user" or for "return to stock".

CHAPTER 5

DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE

5-1. General

a. Destruction of the machine gun when subject to capture or abandonment in the combat zone, will be undertaken only when in the judgment of the commander concerned such action is necessary. If destruction is resorted to, the equipment must be so badly damaged that it cannot be restored to a usable condition in the combat

zone either by repair or cannibalization. The reporting of the destruction of equipment is to be through regular channels.

b. Priorities for destruction of repair parts are:

- (1) Bolt
- (2) Barrel
- (3) Sighting equipment
- (4) Mount