TM 9-1005-224-34

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

FIELD MAINTENANCE

7.62-MM MACHINE GUN M60 AND 7.62-MM MACHINE GUN MOUNT M91

HEADQUARTERS, DEPARTMENT OF THE ARMY

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TECHNICAL MANUAL
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FIELD MAINTENANCE:
7.62-MM MACHINE GUN M60 AND 7.62-MM MACHINE GUN MOUNT M91

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual contains instructions for the information and guidance of personnel responsible for field maintenance of the 7.62-mm machine gun M60 and mount M91. It contains information on maintenance which is beyond the scope of the tools, equipment, or supplies normally available to using organizations. This manual does not contain information which is intended primarily for the using organization, since such information is available to Ordnance maintenance personnel in the pertinent operators technical manuals or field manuals.

b. This manual contains a description of, and procedures for, disassembly, inspection, repair, and assembly of the 7.62-mm machine gun M60 and the mount M91. The appendix contains a list of current references, including supply and technical manuals and other publications applicable to the materiel.

c. TM 9–1005–224–12 contains operating and lubricating instructions for the materiel and the maintenance allocation chart, which outlines authorized maintenance operations allocated to using organizations in performing maintenance work within their scope.

d. TM 9–1005–224–35P contains a list of repair parts and special tools.

e. This first edition is being published in advance of complete technical review. Any errors or omissions will be brought to the attention of the Commanding Officer, Raritan Arsenal, Metuchen, N. J., ATTN: ORDJR-CPRA, using DA Form 468.

2. Field Maintenance Allocation

The publication of instructions for complete disassembly is not to be construed as authority for the performance by field maintenance units of those functions which are restricted to depots and arsenals. In general, the prescribed maintenance responsibilities will be as reflected in the maintenance allocation charts. Instructions for depot maintenance are to be used by maintenance companies in the field only when the tactical situation makes the repair functions imperative. Supply of parts listed in the depot guide column of TM 9–1005–224–35P will be made to field maintenance only when the emergency nature of the maintenance to be performed has been certified by a responsible officer of the requisitioning organization.

3. Forms, Records, and Reports

a. General. Responsibility for the proper execution of forms, records, and reports rests upon the officers of all units maintaining this equipment. However, the value of accurate records must be fully appreciated by all persons responsible for compilation, maintenance, and use. Records, reports, and authorized forms are normally utilized to indicate the type, quantity, and condition of materiel to be inspected, to be repaired or used in repair. Properly executed forms convey authorization and serve as records for repair or replacement of materiel in the hands of troops and for delivery of materiel requiring further repair to Ordnance shops in arsenals, depots, etc. The forms, records, and reports establish the work required, the progress of the work within the shops, and the status of the materiel upon completion of its repair.

b. Authorized Forms. The forms generally applicable to units maintaining this materiel are listed in the appendix. For a listing of all blank forms, prescribed for use generally throughout the Department of the Army refer to DA Pam 310–2.

c. Field Report of Accidents.

(1) *Injury to personnel or damage to materiel.* The reports necessary to comply with the requirements of the army safety program are prescribed in detail in AR 385–40. These reports are required whenever accidents involving injury to personnel or damage to materiel occur.

(2) *Ammunition.* Whenever an accident or malfunction involving the use of ammunition occurs, firing of the lot which malfunctions will be immediately discontinued. In addition to any applicable reports required in (1) above, details of the accident or malfunction will be reported as prescribed in AR 700–1300–8.

d. Report of Unsatisfactory Equipment and Materials or Publications. Any deficiencies detected in the equipment covered herein which occur under the circumstances indicated in AR 700–38 should be immediately reported in accordance with the applicable instructions in cited regulations.

Section II. DESCRIPTION AND DATA

4. Description

a. 7.62-MM Machine Gun M60. The 7.62-mm machine gun M60 (figs. 1–3) is an aircooled, link-belt fed and gas operated machine gun. It can be fired from the shoulder, hip, in sitting or prone positions. In the sitting or prone positions, the bipod or 7.62-mm machine gun mount M91 may be used.

(1) *Barrel group.* The barrel group is composed of the barrel with the gas cylinder and integral parts as a unit, front sight, flash suppressor and bipod. The barrel carries the projectile to target and a gas port supplies gas to the gas cylinder propelling the operating rod to recock the weapon. The front sight is used in conjunction with the rear sight for targeting the weapon and has no movable settings. The function of the flash suppressor is to reduce flash of burning gases also to aid in targeting weapon by spreading gases making visibility of target more clearly. The bipod is used for supporting the weapon to aid in targeting.

(2) *Stock group.* The stock is located at the rear of the weapon and is rubber coated. It is composed of a stock, shoulder rest, sling swivel, and a latch that secures stock to the buffer. The stock is designed to rest weapon

Figure 1. 7.62-mm machine gun M60—right rear view.

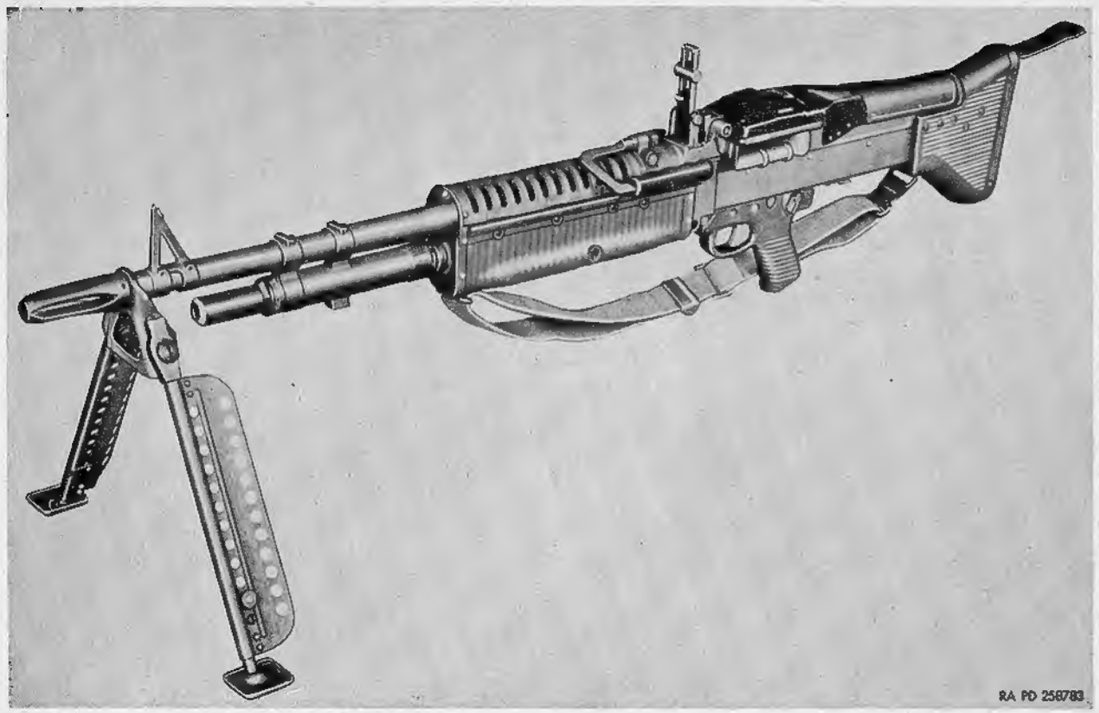


Figure 2. 7.62-mm machine gun M60—left front view.

against the shoulder when firing weapon, also the shoulder rest, when positioned horizontally, will aid in holding gun steady when firing. The purpose of the sling swivel is to provide a means to secure the sling.

(3) *Buffer group.* The buffer group is located at the rear of the receiver and secured in position by a yoke. The buffer, with pads and springs, controls the remaining energy from rod and bolt in the weapon's recoil action and also the counterrecoil action.

(4) *Bolt group.* The bolt group is located in the receiver on guides attached to the operating rod. The bolt in its forward action pushes the cartridge from the link, chambers, and fires it. On the rearward action, the bolt extracts the empty cartridge case and ejects it.

(5) *Operating rod group.* The operating rod group is located in the lower inner portion of the receiver, extending from the buffer to the gas piston in the gas cylinder. The yoke of the operating rod is installed over the firing pin in the bolt and secured by the tension of the firing pin spring. The forward movement of the rod is propelled by the operating spring and the rearward movement is propelled by the energy of the gas in the gas cylinder against the piston. The operating rod controls the function of the bolt.

(6) *Forearm group.* The forearm group is located in front of the receiver and over the barrel. The purpose of the forearm is to protect the operator from heat of the barrel, and furnish a surface for the operator to grip and steady the weapon.

(7) *Cover group.* The cover group is located on the top of the receiver and secured in position by a latch at the rear end of cover. The action of the components of the cover with the action of the bolt feeds the cartridge in position for loading the weapon.

(8) *Tray group.* The tray group is located

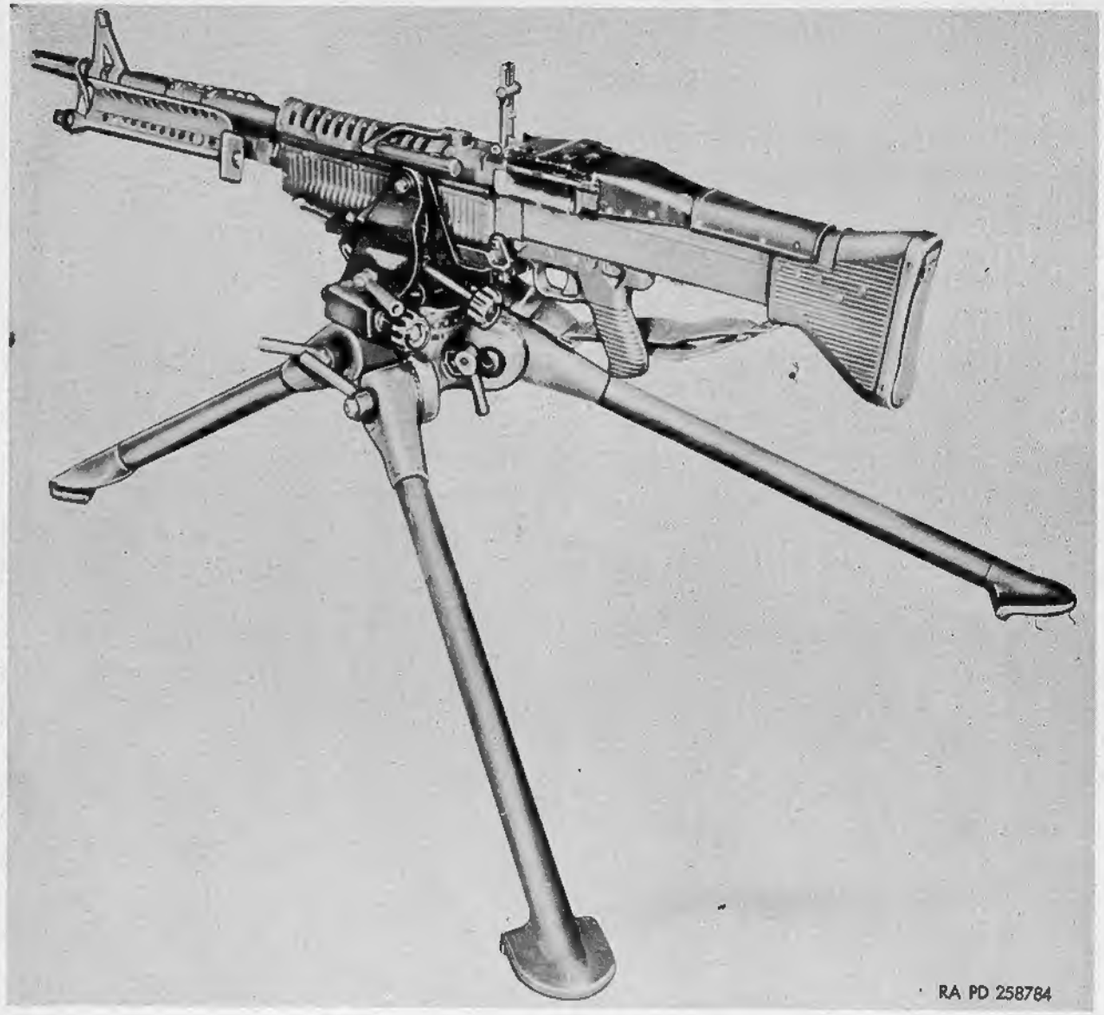


Figure 3. 7.62-mm machine gun M60, mounted on 7.62-mm machine gun mount M91.

in the forward end of the receiver body. The purpose of the tray is to position and hold the cartridge for feeding the round into the chamber.

(9) *Trigger mechanism group.* The trigger mechanism group is located under the forward end of the receiver. The purpose of the trigger mechanism is to control the firing of the weapon. It has a safety that also controls the firing.

(10) *Receiver group.* The receiver is the main body of the weapon. The receiver houses the buffer group, bolt group, and operating rod group. The guides, in the receiver, control the position of the bolt and operating rod.

(11) *Sight group.* The sight group is located on top of the receiver. The sight has controls for azimuth, elevation and depression settings. The purpose of the sight is for targeting the weapon.

b. 7.62-MM Machine Gun Mount M91. The 7.62-mm machine gun mount M91 is a lightweight, portable, folding unit used primarily for ground fire. It is composed of two main

groups, the tripod and cradle assemblies (fig. 3).

(1) *Tripod.* The tripod assembly consists of three legs and a socket head. The mounting portion for the legs is scaled so that various positions of the legs can be attained fitting to the terrain. The head also has a locking pin to secure the cradle when installed in the tripod.

(2) *Cradle assembly.* The cradle assembly consists of azimuth, depression and elevation controls, also a recoil, location pins, and a dial for setting of the azimuth. The purpose of the controls is to arrive at a positive setting for targeting the gun. The recoil aids in buffering the shock of the recoil when weapon is fired.

5. Tabulated Data

Refer to TM 9–1005–224–12 for tabulated data pertaining to machine gun and mount performance and fire control. The following data is for Ordnance maintenance:

Rifling:
- Number of lands — 4
- Right hand twist — one turn in 12 in.

Trigger pull — 11.5 lb (max); 6 lb (min)

Chamber pressure maximum — 2,800 lb psi

CHAPTER 2

PARTS, SPECIAL TOOLS, AND EQUIPMENT FOR FIELD MAINTENANCE

6. General

Tools, equipment, and maintenance parts over and above those available to the using organization are supplied to Ordnance field maintenance units for maintaining and repairing the materiel.

7. Maintenance Parts

Maintenance parts are listed in TM 9–1005–224–35P, which is the authority for requisitioning replacements.

8. Common Tools and Equipment

Standard and commonly used tools and equipment having general application to this materiel are listed in SM 9–4–5180 (J8–6), and are authorized, for issue, by tables of allowances and tables of organization and equipment.

9. Special Tools and Equipment

The special tools and equipment tabulated in table I are listed in and authorized for issue by TM 9–1005–224–35P. This tabulation contains only those special tools and equipment necessary to perform the operations described in this manual, is included for information only, and is not to be used as a basis for requisition.

Table I. Special Tools and Equipment

Item	Identifying number	References		Use
		Figure	Paragraph	
ASSEMBLING TOOL, BUFFER:	7269361	5	42, 44	For use in assembling and disassembling buffer.
BOLT, FIELD TEST:	7799699	----------	34*b*, *d*	To check headspace.
GAGE, FIRING PIN PROTRUSION: .035–.043.	7274754	----------	48*b*(6)	To measure firing pin protrusion in bolt.
GAGE, HEADSPACE: max 1.640 (field rejection).	7274748	----------	34*d*	To inspect maximum requirement of headspace.
GAGE, HEADSPACE: min 1.631.	7274739	----------	34*d*	To inspect minimum requirement of headspace.
GAGE: plug firing pin hole, max 0.108.	7458598	----------	48*b*(4)	To measure maximum diameter of firing pin hole in bolt.
KIT, BARREL EROSION GAGE M8:	5910297	----------	34*c*	To inspect barrel wear.
REFLECTOR, BARREL CALIBER .30:	7265788	5	34*c*	To inspect barrel.
WRENCH, COMBINATION, SCREWDRIVER AND REAMER:	7269345	4	33*d*, *e*, *f* 34*b*(2)(*a*)	Disassembly, cleaning and assembly of weapon.

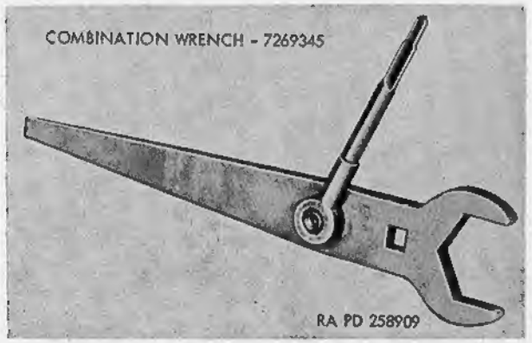


Figure 4. Special tools for field maintenance.

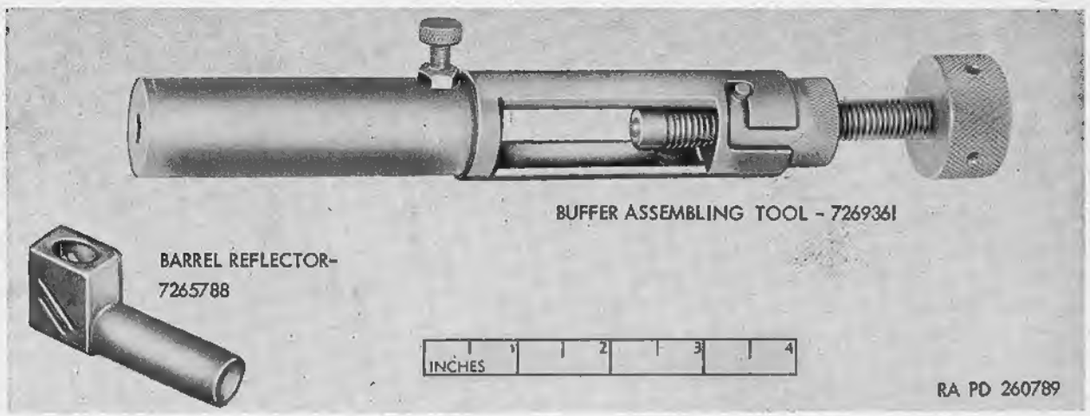


Figure 5. Special tools for field maintenance.

CHAPTER 3

INSPECTIONS

Section I. GENERAL

10. Scope

This chapter provides specific instructions for the inspection by Ordnance maintenance personnel of materiel in the hands of troops in the field, in Ordnance shops, and in alerted units scheduled for oversea duty. Trouble-shooting information is incorporated whenever applicable as a normal phase of inspection.

11. Purpose of Inspection

Inspections are made for the purpose of—determining the condition of an item as to serviceability; recognizing conditions that would cause failure; assuring proper application of maintenance policies at prescribed levels; and determining the ability of a unit to accomplish its maintenance and supply missions.

12. Categories of Inspection

In general, three categories of inspection are performed by Ordnance field maintenance personnel.

a. Inspection of Materiel in the Hands of Troops.

(1) *Spot-check inspection.* This is an inspection performed on a percentage of materiel in order to ascertain the adequacy and effectiveness of organizational maintenance and supply. Included within this scope is inspection of equipment to detect incipient failures before unserviceability occurs; inspection to ascertain the availability and use of technical and supply manuals and lubrication orders; inspection to determine the accuracy of records, authorized levels of equipment and supplies, practice of supply economy, preservation, and safe keeping of tools, availability of repair parts and supplies, and knowledge of the proper procedures for requisitioning supplies and equipment, and followup thereon. For frequency of spot check, see AR 750–925.

(2) *Command maintenance.* Command maintenance inspections will be performed, at least, annually. The purpose of the inspection is to ascertain the serviceability of equipment, to predict maintenance and supply requirements, and to determine the adequacy of facilities and effectiveness of procedures. Information obtained during the inspection should indicate future requirements for depot maintenance and for replacement as well as disclose immediate needs for maintenance and application of modification work orders. During inspections, corrections or deficiencies will be made on the spot when practical. For additional information relative to these inspections and the forms to be used therewith, refer to AR 750–8.

b. Ordnance Shop Inspection.

(1) *Initial inspection.* This is an inspection of materiel received in Ordnance shops for purpose of determining the degree of repair and parts required. This includes determination of modification work orders to be applied.

(2) *In-process inspections.* These are inspections performed in the process of repairing (field maintenance) the materiel. This is to insure that all parts conform to the prescribed repair standards, that the workmanship is in accordance with approved methods and procedures, and that defi-

ciencies, not disclosed by the initial inspection, are found and corrected.

(3) *Final inspection.* This is an acceptance inspection performed by a final inspector, after repair has been completed, to insure that the materiel is acceptable for return to user or for return to replacement stock according to the standards established.

c. Preembarkation Inspection. This inspection is conducted on materiel in alerted units scheduled for oversea duty to insure that such materiel will not become unserviceable or worn out in a relatively short time. It prescribes a higher percentage of remaining usable life in serviceable materiel to meet a specific need beyond minimum serviceability.

Section II. INSPECTION PROCEDURES

13. General

***Warning:* Before starting an inspection, be sure to clear the weapon. Do not actuate the trigger or firing mechanism until the weapon is cleared. Inspect the chamber to insure that it is empty and check to see that no ammunition is in position to be introduced. Avoid having live ammunition in the vicinity of the work.**

a. Check to see that the weapon has been cleaned of all corrosion-preventive compound, grease, excessive oil, dirt, or foreign matter which might interfere with proper functioning or obscure the true condition of the parts.

b. Make an overall inspection of the weapon for general appearance, condition, operation, and manual functioning. Use dummy or drill cartridges.

14. Inspection of Materiel in the Hands of Troops

a. Refer to TM 9–1100 and AR 750–8 for responsibilities and fundamental duties of inspecting personnel, the necessary notice and preparations to be made, forms to be used, and general procedures and methods to be followed by inspectors. Materiel to be inspected includes organizational spare parts and equipment and the stocks of cleaning and preserving materiels.

b. Determine serviceability, i. e., the degree of serviceability, completeness, and readiness for immediate use, with special reference to safe and proper functioning of the materiel. If the materiel is found unserviceable or incipient failures are disclosed, the deficiencies will be corrected on the spot or advice given as to corrective measures when applicable. When the materiel needs repair it will be tagged for delivery to, and repaired by, Ordnance maintenance personnel.

c. Determine causes of mechanical and functional difficulties that troops may be experiencing. Check for apparent results of lack of knowledge, misinformation, neglect, improper handling and storage, security, and preservation.

d. Check to see that all authorized modifications have been applied and that no unauthorized alterations have been made. Also that no work beyond the authorized scope of the unit is being attempted. Check the index in DA Pam 310–4 and the current MWO files for any MWO's printed after this publication.

e. Instruct the using personnel in proper preventive-maintenance procedures where found inadequate.

f. Check on completeness of the organizational maintenance allowances and procedures for obtaining replenishments.

g. Inspect lettering of name and serial number stamped on gun for legibility.

h. Note general appearance. Check exterior of materiel for missing or broken parts.

i. Check storage conditions of general supplies and ammunition.

j. Initiate a thorough report on materiel on "deadline" with reasons therefore, for further appropriate action.

k. Report to the responsible officer any carelessness, negligence, unauthorized modifications, or tampering. This report should be accompanied by recommendations for correcting the unsatisfactory condition.

15. Barrel Assembly
(fig. 6)

a. Barrel. Examine the bore for dirt, rust, erosion and deformation of lands and grooves.

Note. A clean bore is not necessarily shiny and the

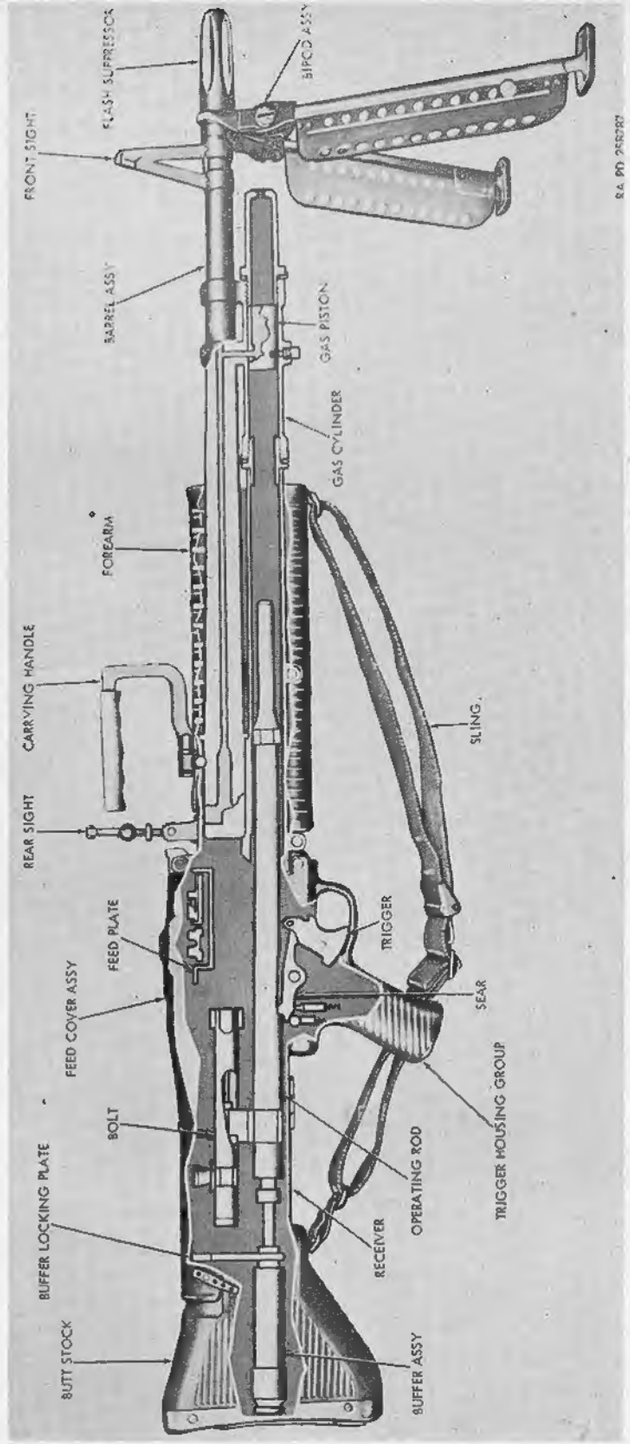


Figure 6. Cutaway view of 7.62-mm machine gun M60.

fact that a bore is shiny may indicate the unauthorized use of abrasives to clean the bore.

Inspect rifling for scratches, nicks, burrs, scoring, etc. Check particularly at the origin of rifling for burred, flattened, chipped, raised, sheared, or stripped lands. Examine tube for bulges or stress cracks. Inspect the chamber for rust, grit, powder fouling, or other foreign material.

b. Gas Cylinder. Examine gas cylinder and piston for scratches, abrasions, cracks or any other imperfections that may cause loss of propulsion to operate operating rod. Inspect for grit, powder fouling or other foreign material.

c. Bipod. Check for ease of operation. Inspect locks on legs so adjustments of position can be easily attained.

d. Front sight. Inspect front sight for cracks, burrs on tip and also see if sight is not bent or distorted.

16. Butt Stock and Forearm
(fig. 6)

a. Butt Stock. Inspect lock in butt for weak or broken spring. Examine stock for damage or distortion.

b. Forearm. Inspect spring for loss of tension or if broken. Examine the forearm for cracks, distortion or if rivets are missing or loose.

17. Buffer Assembly
(fig. 6)

Examine buffer assembly for dirt, rust, and corrosion. Inspect springs for cracks or distortion. Examine pads for wear, cracks or if broken. Check pin to see if cracked, broken, or distorted. Be sure no oil or grease is used on buffer.

18. Trigger Housing Group
(fig. 6)

Examine trigger housing group for dirt, rust, erosion and deformation of the body. Examine rubber coating for deterioration, wear, and for chips or broken portions. Inspect sear for wear or if deformed or broken. Check all springs. If distorted, bent or broken, replace. Check all pins. If worn, bent, burred or broken, replace. Inspect safety lever for wear, or cracks.

19. Bolt Group and Operating Rod
(fig. 6)

a. Bolt Group. Inspect the following parts for satisfactory operation and condition: bolt plug, firing pin spring, firing pin bearing, firing pin, cam actuator, bolt body, extractor, extractor spring and plunger, ejector, ejector spring, and ejector pin. Care should be exercised in inspecting bolt body for wear in camming surface.

b. Operating Rod. Examine body of operating rod for rust, dirt, corrosion, or deformation. Check sear notch surface for wear. Inspect camming surface on operating rod for wear.

20. Feed Cover Group and Feed Plate
(fig. 6)

a. Feed Cover Group. Examine the feed cover group for dirt, rust, corrosion, and deformation of parts. Inspect all parts for burrs, scoring, scratches, or stress cracks. Inspect springs and pins for distortion, breaks or being bent. Close cover and be sure cover lock secures cover to gun.

b. Feed Plate Assembly. Examine feed plate for dirt, rust, corrosion, and deformation. Inspect rollers for roundness and shaft for wear. Inspect feed pawl for wear and feed plate pawl spring to ascertain spring has not lost its tension or is not broken.

21. Receiver
(fig. 6)

Examine receiver for dirt, rust, corrosion, cracks, loose or broken rivets, wear on the guides and other defects that may cause weapon to malfunction. Inspect springs for distortion or breaks. Examine receiver body for wear or cracks.

22. Ordnance Shop Inspections

a. Initial Inspection. Inspection procedures outlined in paragraphs 18 through 21 apply also to initial shop inspection. If materiel received in Ordnance shops is not tagged to indicate the nature of the repair, steps should be taken to determine the cause of unserviceability, and the estimate of parts required (troubleshooting).

b. Troubleshooting. Table II lists malfunctions, probable causes, and corrective actions. For troubleshooting within the scope of organizational maintenance, refer to TM 9–1005–224–12.

c. In-Process Inspection. Detailed instructions for in-process inspection of the materiel are contained in the repair chapter together with the applicable repair instructions. A tabulated list of repair standards is provided in chapter 8 for ready reference.

d. Final Inspection. Detailed instructions for final inspection of materiel in field maintenance shops are contained in chapter 7.

23. Preembarkation Inspection of Materiel in Units Alerted for Oversea Movement

a. General. Materiel destined for oversea movement must be inspected for serviceability as described in paragraphs 13 through 21. Serviceable materiel will also meet the standards set forth in TB ORD 385.

b. Spare Parts and Equipment. When shipped overseas the weapon must be accompanied by a complete set of spare parts and equipment as normally issued. All parts and equipment must be examined for serviceability. Replace any defective items. It is not normally necessary to inspect items in sealed packages since these items were inspected prior to sealing and storage.

Table II. Troubleshooting

Malfunction	Probable causes	Corrective action
Failure to load	Cover or components defective or damaged.	Replace cover or defective components.
	Retainer cartridge pawl worn.	Replace.
	Cartridge feed roller worn or chipped.	Replace.
	Cartridge feed tray spring and pins worn or damaged.	Replace.
Failure to feed	Damaged or worn cartridge feed tray components.	Replace.
	Damaged or worn gas cylinder or piston.	Replace barrel assy.
	Broken or kinked operating spring.	Replace.
	Yoke roller and pin worn or damaged.	Replace.
	Actuator cam worn	Replace actuator assy.
	Damaged or worn component or components.	Replace.
Failure to fire	Damaged or worn bolt components.	Replace.
Failure to extract or eject.	Damaged or worn bolt components.	Replace.
	Faulty function of the gas cylinder.	Replace barrel assy.

CHAPTER 4

GENERAL MAINTENANCE

24. General

a. This chapter contains general maintenance information.

b. In the chapters which follow, major units are disassembled, repaired, replaced, assembled, and given a final inspection. These instructions are supplementary to instructions for the using organizations contained in TM 9–1005–224–12.

25. Disassembly and Assembly Procedures

a. In disassembling a unit, remove the major subassemblies and assemblies whenever possible. Subassemblies may then be disassembled, as necessary, into individual parts.

b. During assembly, subassemblies should be assembled first and then installed to form a complete unit. Lubricate bearings and sliding surfaces before assembling. Apply rust-preventive compounds to unpainted mating parts, which will be assembled together permanently.

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

26. Replacement of Parts

a. When assembling a unit, replace taper pins and cotter pins with new ones, if possible. If screws, bolts, washers, or nuts are damaged beyond repair, they will be replaced.

b. All springs will be replaced, if broken, kinked, bent, cracked, fail to function properly, or fail to meet specific requirements.

c. If a required new part is not available, a reconditioned part may be substituted. Such reconditioned parts should be examined carefully to determine their suitability.

27. Use of Tools

a. Care must be exercised to use tools that fit and are suitable for the task to be performed in order to avoid unnecessary mutilation of parts and/or damage to tools.

b. A number of special tools (table I) are provided for the maintenance of the materiel. These tools should be used only for the purpose for which they are intended.

c. Keep tools clean and work with clean parts. Normal rules of good housekeeping must be observed.

28. Painting

For instructions on painting, that may be necessary when rust or corrosion has removed original finish of the weapon, refer to TM 9–2851.

29. Cleaning

a. As assemblies are removed and disassembled, the parts should be cleaned thoroughly of all grease, oil, water, and dirt. They should be dried with wiping cloths and then coated with the lubricant prescribed in the lubrication orders to prevent rusting when disassembled.

Note. Sandblasting is permissible on nonworking surfaces for removal of dirt, paint, and rust. After repair has been completed, the use of steam or high pressure stream of water is prohibited.

b. For cleaning instructions on all parts, refer to TM 9–1007.

30. Finished Surfaces

a. All painted or treated surfaces will be refinished to match the appearance of new parts according to the information outlined in (1) through (4) below.

(1) Paint all surfaces on which paint has deteriorated or become damaged.

(2) Do not paint working parts inside groups or mechanism. Lightly lubricate such components in accordance with the lubrication order.

(3) Do not paint highly polished machine-finished surfaces.

(4) Do not paint rubber surfaces.

b. For detailed information on finished surfaces and painting, refer to TM 9–2851.

31. Repairing Damaged Threads

Damaged threads should be repaired by use of a thread chaser or by chasing on a lathe.

32. Lubrication

a. Refer to LO 9–1005–224–10 and TM 9–1005–224–12, which covers lubrication by the using personnel.

b. Thoroughly clean weapon of dust, dirt or powder fouling and apply a coat of preservative oil.

c. Above 0° F. use PL Special oil and LAW oil below 0° F.

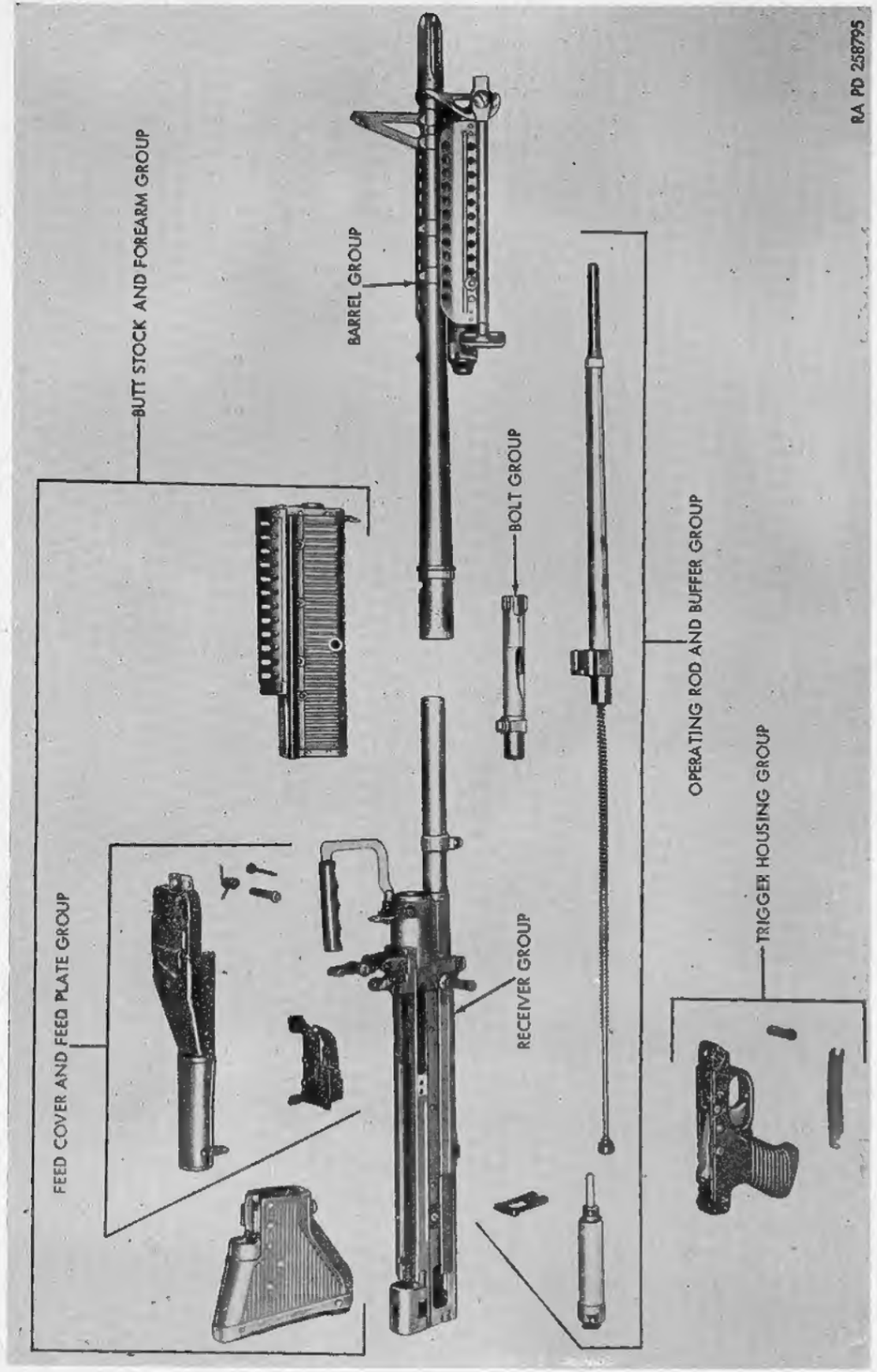


Figure 7. Major groups of 7.62-mm machine gun M60.

CHAPTER 5

MAINTENANCE OF 7.62-MM MACHINE GUN M60 AND MOUNT M91

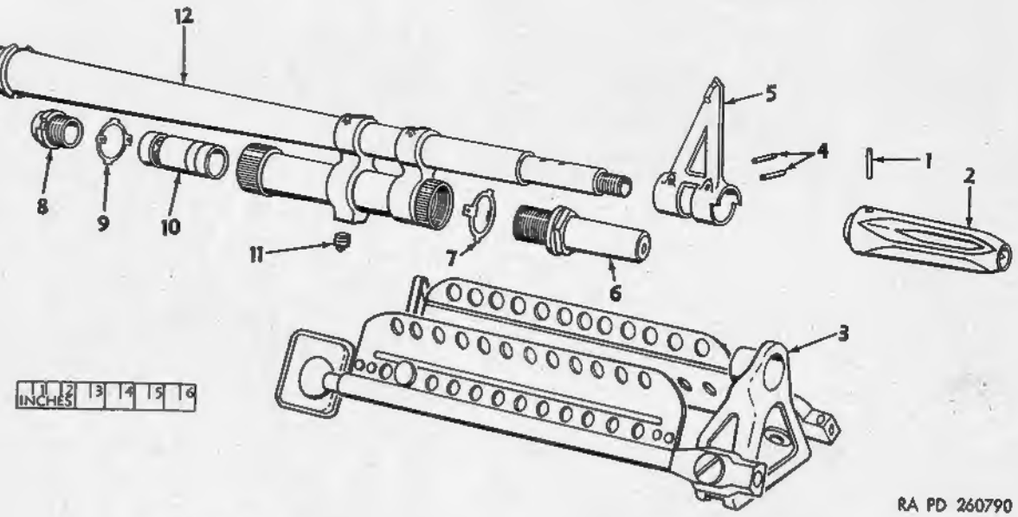
Section I. BARREL GROUP

33. Removal
(fig. 7)

Refer to TM 9–1005–224–12 for instructions for removal.

34. Disassembly
(fig. 8)

a. Remove barrel group by raising locking lever at right front of receiver to vertical



1	Pin 505485	7	Washer 7269035
2	Suppressor 7269034	8	Nut 7269031
3	Bipod assembly 7269029	9	Washer 7269035
4	Rivet 7269038	10	Piston 7269032
5	Sight 7269040	11	Plug 7269033
6	Extension 7269030	12	Barrel 7269028

Figure 8. Barrel Group—Exploded View.

position. Use bipod as handle and withdraw barrel assembly from receiver.

b. Remove flash suppressor pin from body of flash suppressor. Unscrew and remove flash suppressor from the barrel (fig. 9).

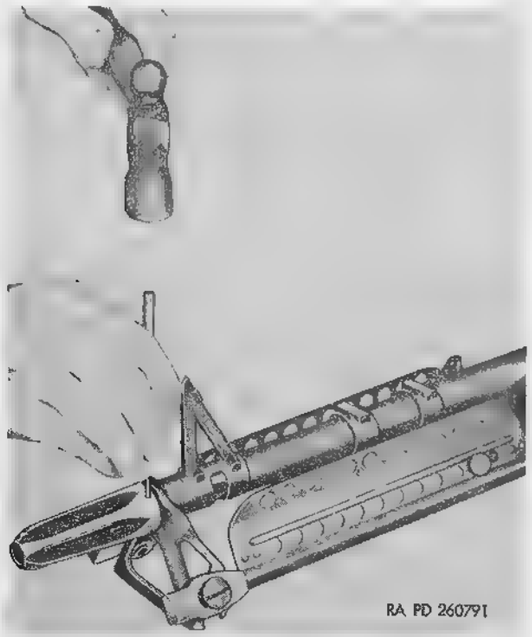


Figure 9. Removing pin from flash suppressor.

c. Remove bipod assembly from barrel.

d. Remove gas cylinder extension, rear gas cylinder nut, and key washers (fig. 10), using combination wrench 7269345 as shown in figure 4.

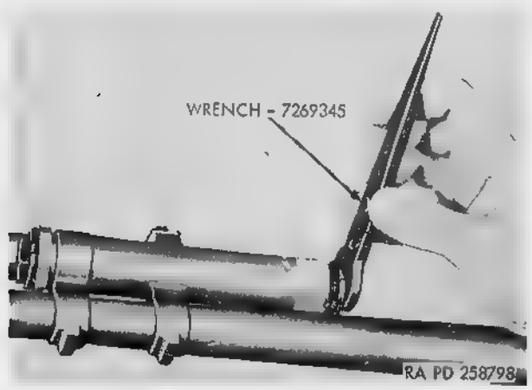


Figure 10. Removing gas cylinder nuts and extension w/wrench 7269345.

e. Elevate muzzle of barrel and remove piston from gas cylinder.

f. Using combination wrench 7269345 (fig. 4), remove gas cylinder plug from gas cylinder (fig. 11).

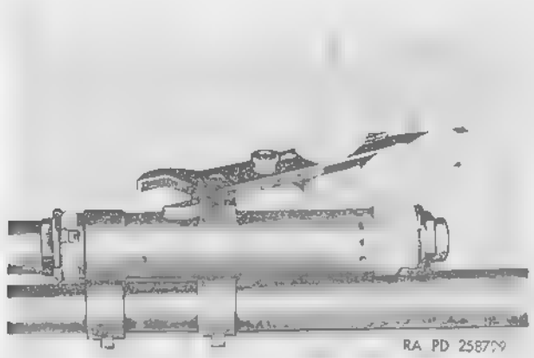


Figure 11. Removing gas cylinder plug with wrench 7269345.

g. Remove both tubular rivets securing front sight to the barrel. Then remove front sight (fig. 12).

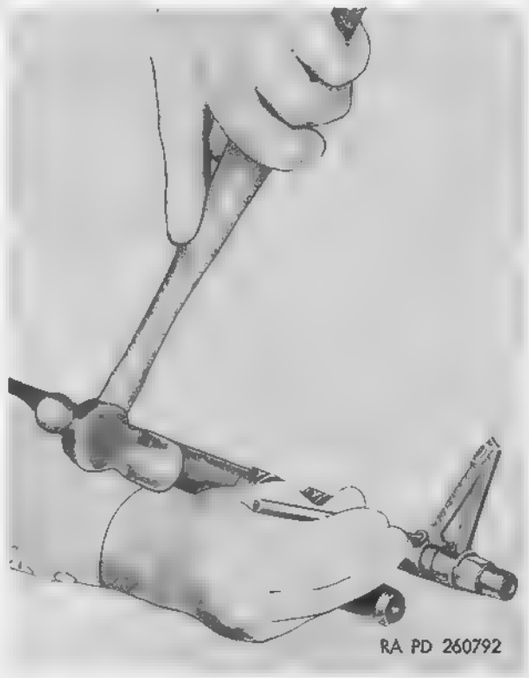


Figure 12. Removing rivets from front sight.

35. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair.

(1) *Barrel assembly.* Inspect the barrel, as a whole, from the standpoint of serviceability.

(*a*) Inspect gas cylinder (fig. 8) for deformations and assure proper functioning of gas piston (fig. 8) within the cylinder. Inspect gas port for obstructions from carbon deposits. Ream with combination wrench 7269345 (fig. 4).

(*b*) Inspect barrel locking lugs surfaces for burrs, restrictions and/or cracks (paying particular attention to radii of any corner). Repair minor deformations by stoning or other means without altering overall critical dimensions. Check for headspace wear using field test bolt 7799699 and headspace gage—minimum 7274739, maximum 7274748.

(*c*) Before inspecting bore of the barrel, all metal and other fouling must be removed and the barrel wiped dry. When the barrel is not bent or otherwise deformed it is serviceable. It must be free of bulges and large pits and the lands should appear sharp and uniformly distinct. A bulge is indicated by a shadowy depression or ring in the bore. Bulges may also be indicated by a raised ring on the exterior surface of the barrel. Pits may not have a diameter larger than the width of a land. When the lands are worn to the extent that the first six inches or more of the bore are smooth, the barrel is unserviceable. If pitting exists to the extent, throughout the bore, that sharpness of lands is affected or if a pit or pits in either the lands or grooves is large enough to permit passage of gas around the bullet (that is, a pit the width of a land or groove and ⅜ inch long or longer) the barrel is unserviceable. Bore of the barrel should be check for the above malformations by using barrel reflector 7265788 (fig. 13). Use barrel erosion gage 5910297 to check extent of bore erosion within barrel. Wear limit of 0.306 or greater will be declared unserviceable.

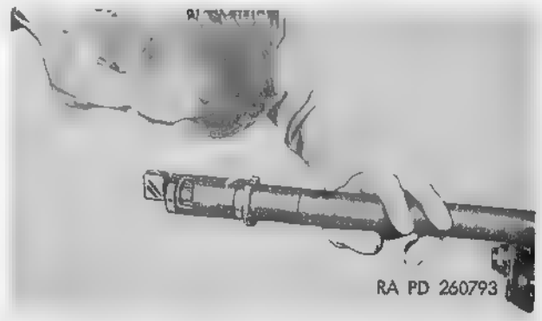


Figure 13. Inspecting bore using barrel reflector 7265788.

(*d*) Use field test bolt 7799699 to check headspace (minimum 1.631, maximum 1.640 for field).

(2) *Flash suppressor.* Inspect flash suppressor (fig. 8) for cracks at front of splines. Any evidence of cracks will be cause for replacement.

(3) *Bipod assembly.* Inspect bipod assembly (fig. 8) for free movement of legs, leg extension and locking action. If otherwise unserviceable, replace assembly.

(4) *Front sight.* Damaged or deformed front sight (fig. 8) will be replaced. Replace tubular rivets.

36. Assembly

a. Insert gas cylinder plug (fig. 8) in gas cylinder and secure using combination wrench 7269345 (fig. 4).

b. Insert piston in gas cylinder, solid face towards receiver and install gas cylinder extension, rear gas cylinder nut also key washers and secure using combination wrench 7269345. Draw extension and nut up firmly. Extreme tightening is not necessary.

Decompress buffer assembly and remove components of buffer from the tool.

44. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair. (fig. 15)

(1) All springs will be tested for deformation and will be installed for functional testing. Any malfunction attributable to spring operation will be cause for spring replacement.

(2) Inspect body for dents or other damage. Replace seal in front portion of body as required.

(3) Inspect plunger for alinement and wear, peening, or other damage that impairs functioning. Minor surface scratches or burrs may be repaired with a fine stone.

(4) Inspect pads for deterioration of rubber and worn or damaged metal surfaces. Replace as required.

(5) Inspect buffer cap and cover for cracks or other wear or damage that would impair functioning and retention of the pin. Replace as required.

(6) Inspect pin for damage that would prevent locking and retaining components within body.

(7) Inspect yoke for damage that impairs installation or removal. Replace if unserviceable.

45. Assembly

(fig. 15)

With gasket installed in the body, insert plunger until plunger shaft projects. Insert pad within body with rubber surfaces contacting metal of plunger head and mating pads. Install springs, cap (with packing) in the body. Insert remaining springs (2) in the body against the cap and hold in position with the cover. Aline the hole in body, cap and cover to permit installation of retaining pin. Place buffer assembly in tool 7269361, compress buffer and install pin. Release and remove buffer assembly from tool.

46. Installation

Refer to TM 9–1005–224–12 for installing buffer assembly in weapon.

Section IV. BOLT GROUP

47. Removal

(fig. 7)

Refer to TM 9–1005–224–12 for removal of bolt assembly.

48. Disassembly

(fig. 17)

For disassembly of bolt refer to TM 9–1005–224–12.

49. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair. (fig. 17)

(1) Inspect face of stripping lug for deformation. Face of stripping lug cannot be rounded and must make full contact with cartridge base.

(2) Locking lugs must not be burred or otherwise deformed.

(3) Inspect all bolt camming surfaces for burrs or other deformations.

(4) Inspect firing pin aperture in face of bolt. Diameter may not exceed 0.108 inches.

(5) Inspect extractor slot for wear or damage that could prohibit free functioning of extractor.

(6) Insert firing pin in bolt in fully forward position. Dimension of protrusion through face of bolt should be within a minimum of 0.035 inches and maximum of 0.043 inches.

(7) All springs will be inspected for deformation and will be installed for functional testing. Any malfunction attributable to spring operation will be cause for spring replacement.

(8) Actuator rollers on actuating cam assembly must function freely and smoothly. A broken or frozen roller will be cause for replacement of cam assembly.

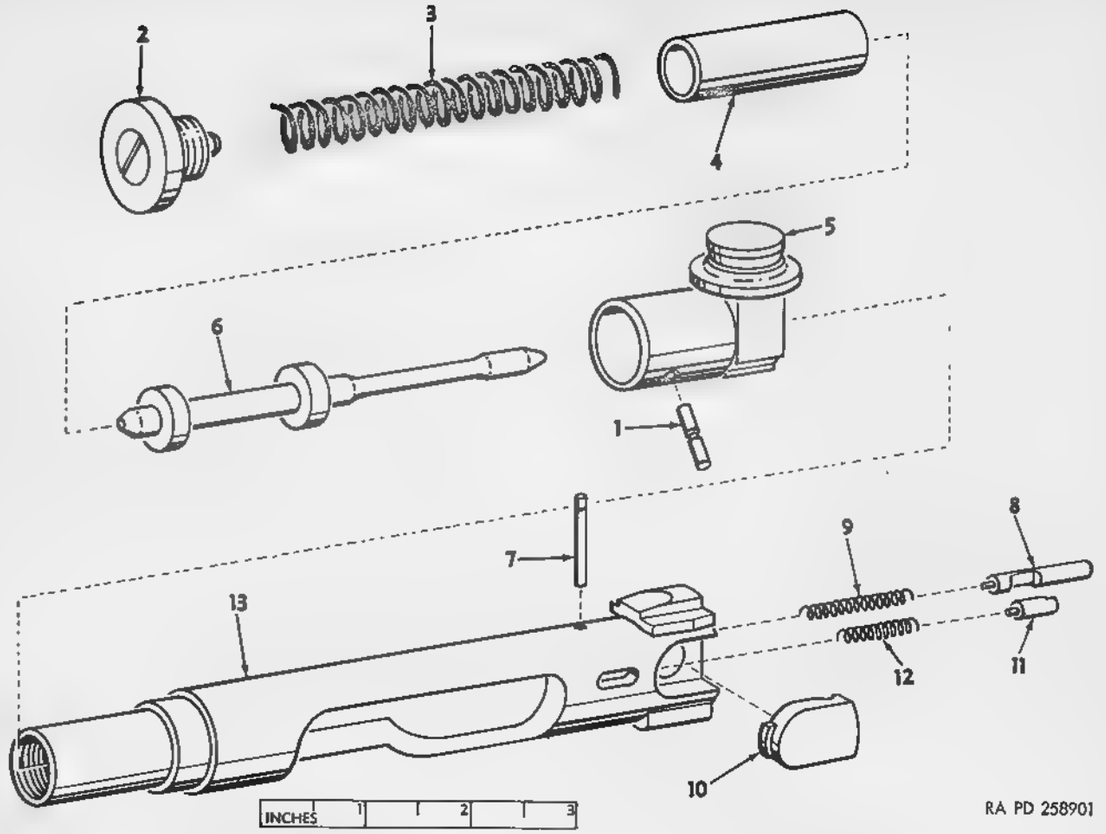
(9) Inspect extractor and replace if lip is cracked, broken or chipped.

(10) Inspect ejector for any damage that would impair proper functioning.

(11) Inspect bolt plug for proper installation and functioning.

(12) Inspect firing pin bearing (sleeve) for wear or damage that would impair functioning. Replace as required.

(13) All pins and plungers damaged or worn beyond serviceability replace.



1 Pin 7269080
2 Plug 7269082
3 Spring 7269087
4 Bearing 7269065
5 Cam 7269063
6 Pin 7269081
7 Pin 7269084
8 Ejector 7269073
9 Spring 7269085
10 Extractor 7269074
11 Plunger 7269083
12 Spring 7269086
13 Bolt 7269060

Figure 17. Bolt group—exploded view.

50. Assembly

Refer to TM 9–1005–224–12 for assembly of bolt.

51. Installation

Refer to TM 9–1005–224–12 for installation instructions.

Section V. OPERATING ROD GROUP

52. Removal
(fig. 7)

Refer to TM 9–1005–224–12 for instructions on removal of operating rod.

53. Cleaning, Inspection, and Repair
(fig. 18)

a. Cleaning. Refer to TM 9–1005–224–12 for instructions on cleaning.

b. Inspection and Repair.

(1) Operating rod must not be bent or distorted.

(2) Leading contact edge of sear notch should not have a radii in excess of 0.030 inches. Further rounding or other damage will be cause for replacing rod.

(3) Inspect camming surfaces of yoke. Burrs and minor damage will be corrected by stoning without altering critical dimensions. Replace rod if damage is beyond repair.

(4) Inspect operating rod yoke roller for free movement and functioning. If worn or damaged beyond serviceability, replace. Replace damaged, worn, or bent pin.

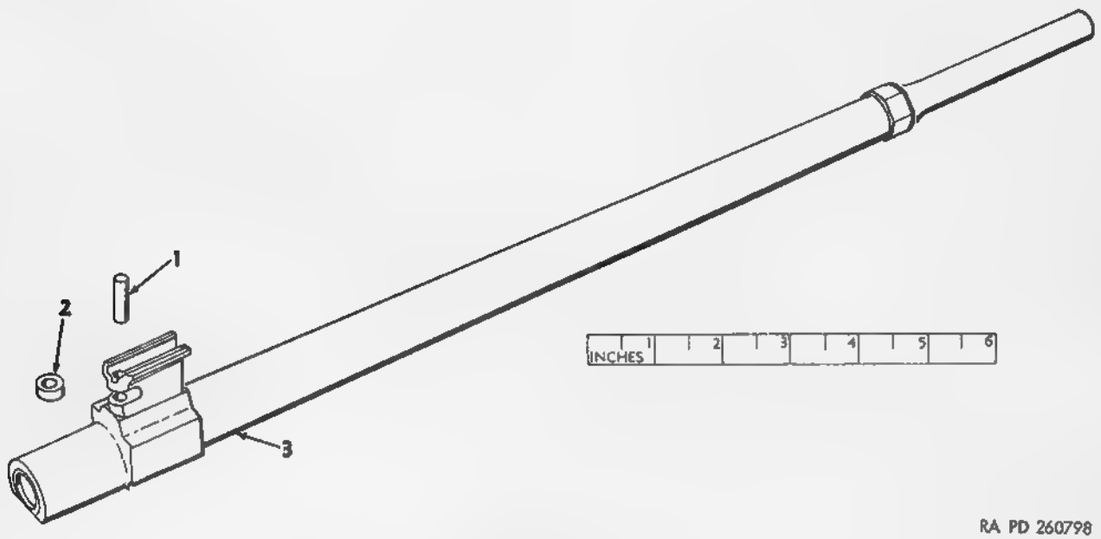
(5) Inspect front end of rod for wear or damage that would impair serviceability.

(6) Driving spring will be inspected for wear, distortion, or breaks impairing serviceability. Spring will be function tested. Replace when unserviceability impairs weapon functioning.

(7) Operating rod spring guide will be inspected for wear or damage restricting spring operation. When unserviceable, replace guide.

54. Installation

Refer to TM 9–1005–224–12 for installation instructions.



1 Pin 7269270
2 Roller 7269273
3 Body

Figure 18. Operating rod group—exploded view.

Section VI. FOREARM GROUP

55. Removal

Refer to TM 9–1005–224–12 for instructions for removal of forearm assembly.

56. Disassembly
(fig. 19)

a. Apply slight pressure to forearm catch spring while holding assembly sideways to remove headless shoulder pin. With pin removed, withdraw forearm catch and spring.

b. Bend back locking tang on swivel key washer, unscrew swivel and remove swivel, nut, and washer.

57. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning.

b. Inspection and Repair.

(1) Bent or damaged portions of forearm (handguard) which prohibits removal and installation or functioning of the weapon will be cause for replacement.

(2) Inspect forearm catch for cracks or other damage. Replace if catch will not lock forearm assembly when installed.

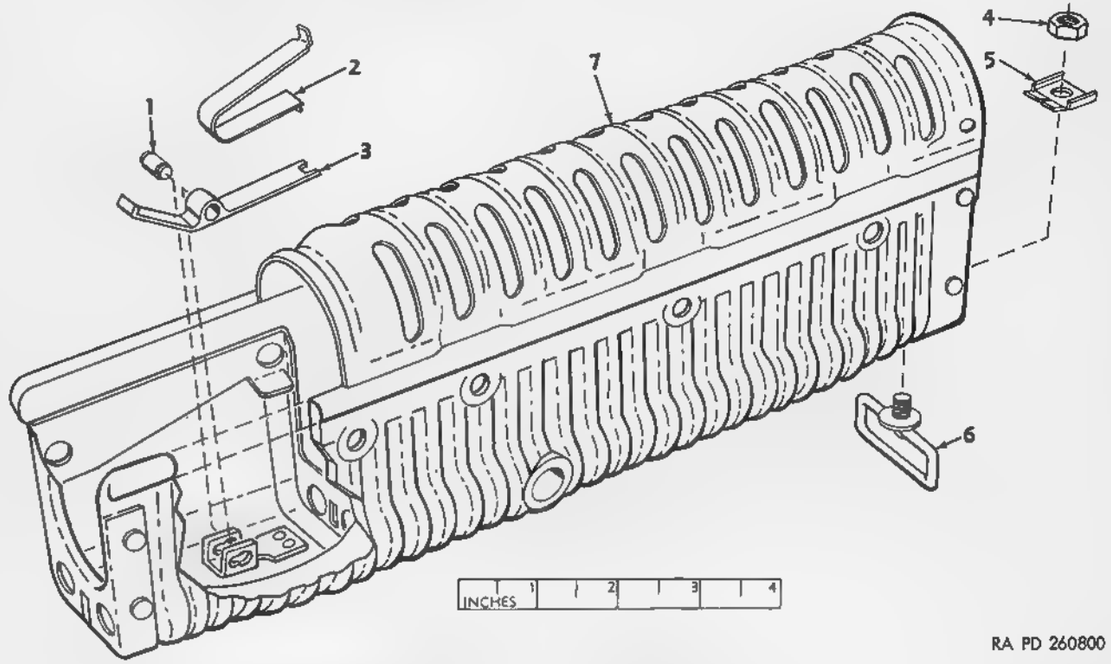
(3) Replace forearm catch spring when damaged or deformed and not capable of holding forearm catch in locked position.

(4) Inspect headless shoulder pin securing catch if damaged or unserviceable. Replace as required.

(5) Inspect sling swivel assembly for capability of functioning. Replace if unserviceable.

58. Assembly

a. Insert catch in yoke within forearm alining the holes to permit installation of headless shoulder pin. Install pin. Snap catch spring in position with longest portion of spring up. Tangs of spring will engage bridge of forearm and catch.



1 Pin 7269184
2 Spring 7269187
3 Catch 7269180
4 Nut 21844
5 Washer 7269189
6 Swivel 7269188
7 Body 7269168

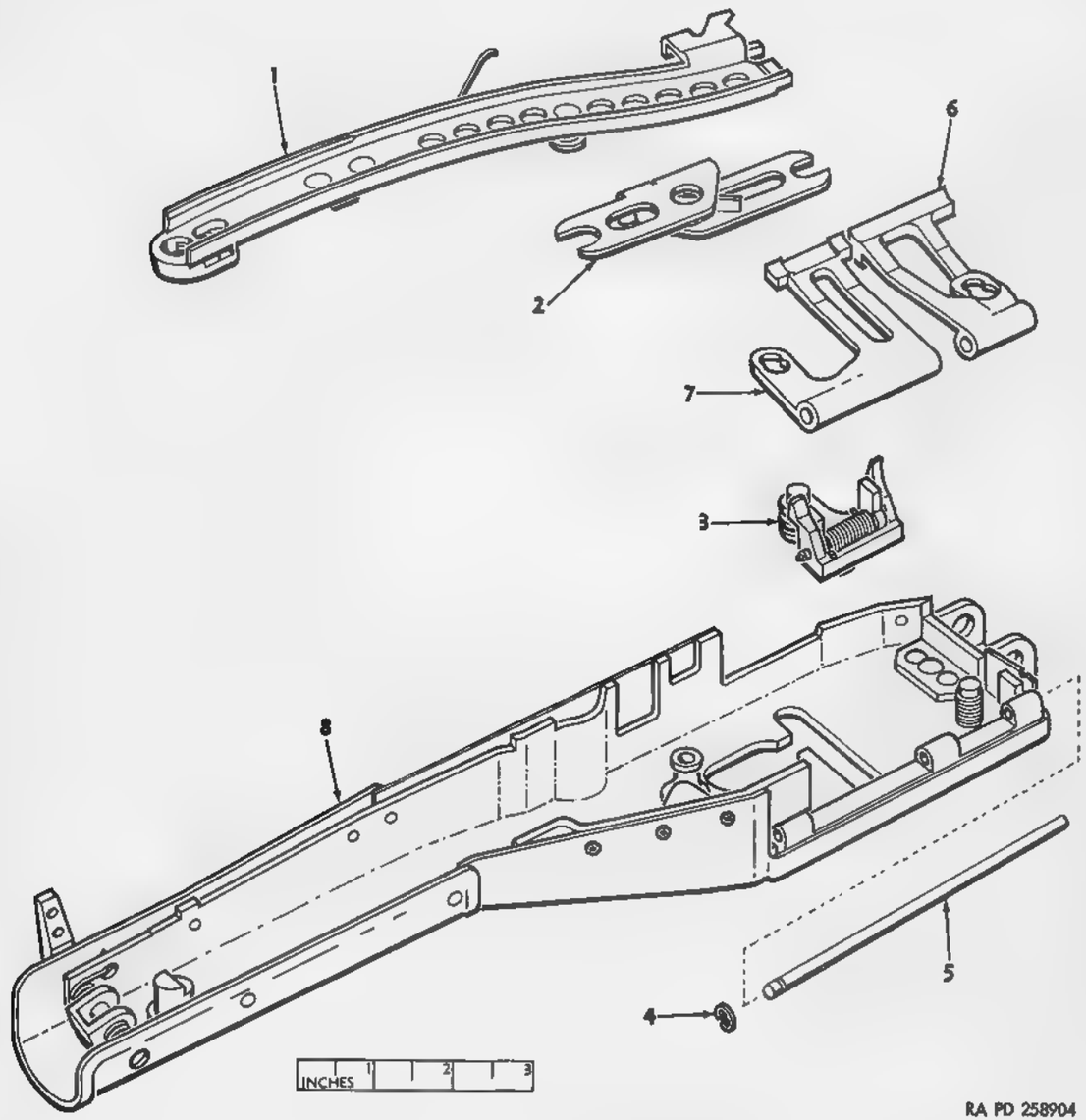
Figure 19. Forearm group—exploded view.

b. Install threaded portion of swivel in hole on bottom forward end of forearm. Secure with key washer and nut and lock in position.

59. Installation

Refer to TM 9–1005–224–12 for installing forearm.

Section VII. COVER GROUP



1 Cam 7269153	3 Pawl 7269120	5 Pin 7269121	7 Guide 7269117
2 Lever 7269145	4 Ring 587571	6 Guide 7269116	8 Frame 7269129

Figure 20. Cover group—exploded view with insert of cover latch.

60. Removal

(fig. 7)

Refer to TM 9–1005–224–12 for removal of cover group.

61. Disassembly

(fig. 20)

a. Cover Group. Refer to TM 9–1005–224–12 for instructions for disassembly of cover group.

b. Carrier Chassis Assembly. Use ⅛ inch punch to drift pin out of carrier assembly and feed pawl. Release and remove spring.

62. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair.

(1) Inspect studs and roller for feed cam and cartridge guides for secured installation (riveting) in cover housing. Roller must operate freely. Inspect all rivets for secure installation. Inspect cover housing complete and secured bonding of rubber coating.

(2) Inspect housing latch spring for tension to hold latch in locked position.

(3) Inspect housing latch for proper functioning.

(4) Inspect feed cam assembly for damage or deformation that would prohibit functioning or restrict movement of roller on bolt actuator assembly. Check retainer, spring, and plunger, for tension and proper locking action. Inspect feed cam return spring for adequate tension to return feed cam during functioning.

(5) Inspect feed cam lever for wear or damage to slotted ends beyond functional serviceability. Inspect feed cam lever spring tension and locking action.

(6) Inspect carrier chassis assembly spring for tension required for pawls to override and engage cartridges.

(7) Inspect pawls for ability to fully engage cartridge.

(8) Inspect rollers and studs of carrier for free movement and operation within slots of cover assembly and in functioning of feed lever cam.

(9) Inspect rear and front cartridge guides for damage or distortion. Surface of the rear of the front cartridge guide must be square and make full contact with links as cartridge is stripped from the ammunition belt.

(10) Inspect grooved headless pin for wear or damage.

(11) Inspect retaining ring for distortion and locking action.

(12) Inspect cover hinge pin for damage and alinement.

(13) Inspect cover hinge pin retaining spring for wear and damage effecting locking action.

(14) Inspect cover hinge spring for adequate tension to raise and hold cover.

(15) All above components beyond economical repair, to permit proper functioning, will be replaced.

63. Assembly

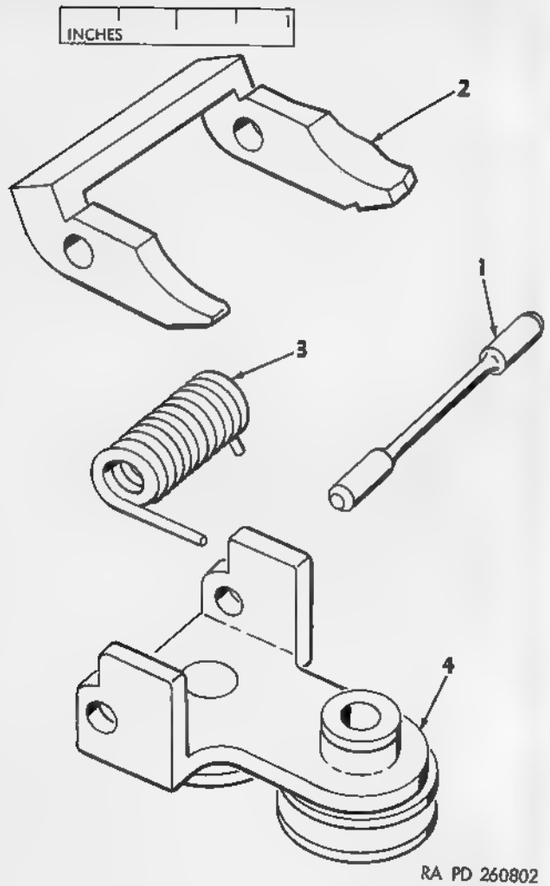
(fig. 21)

a. Refer to TM 9–1005–224–12 for assembly of cover.

b. For assembly of the carrier chassis insert ⅛ inch punch through side of carrier and feed pawl (fig. 22a). Install end of spring (with long tang) over punch inserted through carrier and pawl (fig. 22a). Rotate other end of spring with needle nose pliers until projecting (short) tang engages cross bar of the feed pawl (fig. 22b). Hold spring against the pawl in alinement with opposing holes in carrier and pawl. Push the ⅛ inch punch through the spring into the carrier and pawl. With the punch holding the spring in the compressed position, install the shouldered pin as the punch is withdrawn (fig. 22c). As pin is inserted, hold the spring in alinement and complete installation.

64. Installation

Refer to TM 9–1005–224–12 for installation.



1 Shaft 7269151
2 Pawl 7269150
3 Spring 7269152
4 Chassis 7269163

Figure 21. Carrier chassis assembly—exploded view.

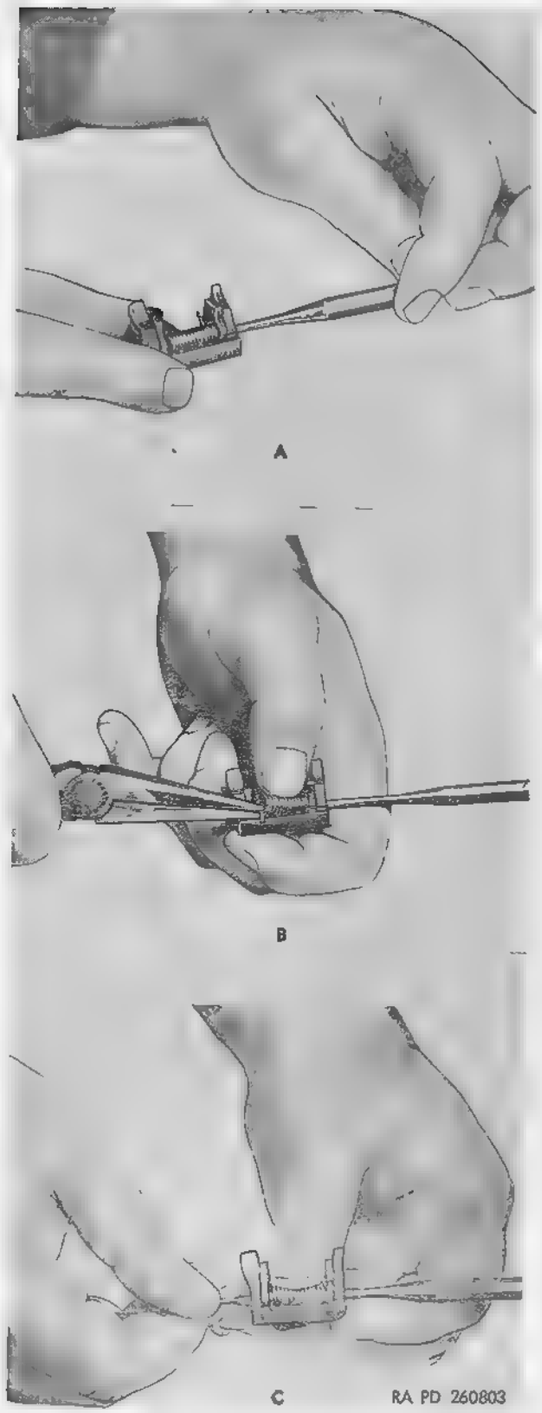


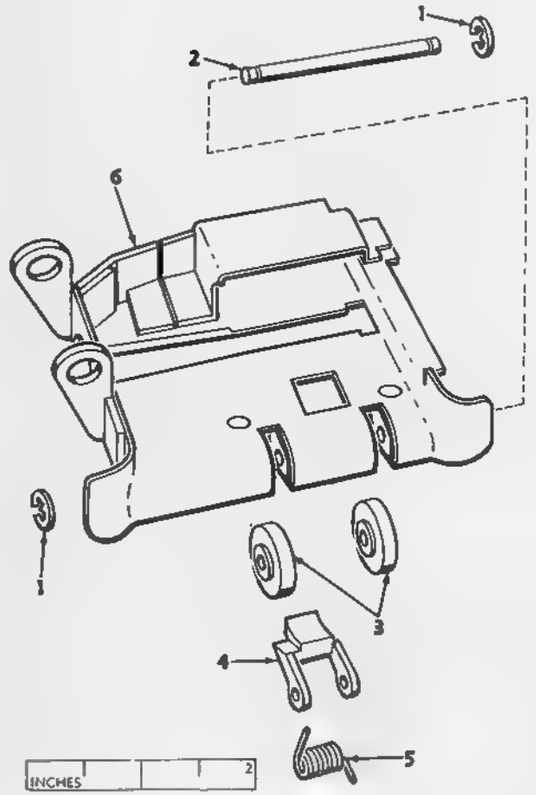
Figure 22. Assembly of the carrier chassis.

Section VIII. TRAY GROUP

65. Removal
(fig. 7)

Refer to TM 9–1005–224–12 for removal of feed tray assembly.

66. Disassembly
(fig. 23)



1 Ring 587574
2 Pin 7269334
3 Rollers 7269333
4 Pawl 7269332
5 Spring 7269335
6 Frame 7269331

Figure 23. Tray group—exploded view.

Remove split retaining rings from retaining pin and drift retaining pin out of the housing. While removing the pin, the rollers, belt holding pawl and holding pawl spring will be released from the housing.

67. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for instructions for cleaning.

b. Inspection and Repair.

(1) Inspect rollers for corrosion or damage that prohibits free movement on retaining pin. Corrosion or minor surface damage to rollers or pin can be removed or repaired with light application of crocus cloth. Care should be exercised not to remove or damage protective finish.

(2) Inspect belt holding pawl for wear or damage of the concave surfaces and/or edges. Rounded corners of these edges will be cause for replacement.

(3) Inspect belt holding pawl spring for distortion or damage and ability to function properly in moving belt holding pawl.

(4) Inspect retaining pin for wear or damage. Check retaining rings for installation and locking action.

(5) Inspect feed tray for wear or damage that would restrict feeding of ammunition or ejection of links.

(6) Replace any of the above components that are worn or damaged beyond repair or serviceability.

68. Assembly

Insert retaining pin in feed tray with rollers, belt holding pawl and spring in position. Secure the retaining pin at both ends with retaining ring.

69. Installation

Refer to TM 9–1005–224–12 for installing feed tray.

Section IX. TRIGGER MECHANISM GROUP

70. Removal
(fig. 7)

Refer to TM 9–1005–224–12 for removal from weapon.

71. Disassembly

Refer to TM 9–1005–224–12 for disassembly.

72. Cleaning, Inspection, and Repair
(fig. 24)

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair.

(1) Check springs, pins, and plungers for wear or damage which would impair their proper installation or functioning.

(2) Inspect sear for wear or damage. The sear notch must not be rounded and must fully engage the sear notch of the operating rod.

(3) Inspect spring lock for adequate tension in securing mounting pins.

(4) Inspect safety lever and shaft for proper rotation and engagement with safety plunger.

(5) Inspect trigger housing for secure installation of all rivets and bonding of rubber coating. Check housing for wear or damage that would impair installation or functioning.

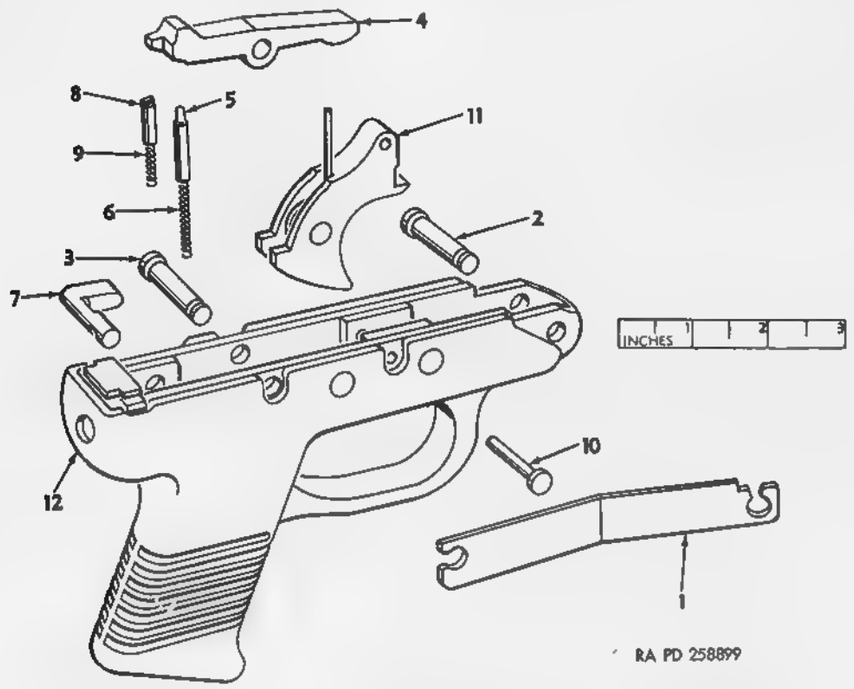
(6) Replace all components, that are worn or damaged beyond repair.

73. Assembly

Refer to TM 9–1005–224–12 for assembly.

74. Installation

Refer to TM 9–1005–224–12 for installation.



1	Spring 7269245	5	Plunger 7269207	9	Spring 7269210
2	Pin 7269229	6	Spring 7269211	10	Pin 7269204
3	Pin 7269205	7	Safety 7269170	11	Trigger 7269228
4	Sear 7269209	8	Plunger 7269206	12	Housing 7269203

Figure 24. Trigger assembly—exploded view.

Section X. RECEIVER GROUP

75. Disassembly
(fig. 7)

Refer to TM 9–1005–224–12 for disassembly of receiver.

76. Cleaning, Inspection, and Repair
(fig. 25)

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair.

(1) Inspect receiver for loose rivets, wear, damage or distortion. Guide rails and/or surfaces within receiver body and tubular portion of operating rod must be free of damage or distortion that would impair functioning.

(2) Inspect carrying handle for damage or distortion. Molded rubber should be complete and bonded to handle.

(3) Inspect barrel lock lever for damage or distortion.

(4) Inspect barrel locking shaft for wear, damage or distortion. This must also be checked with barrel installed to insure proper locking action of the barrel.

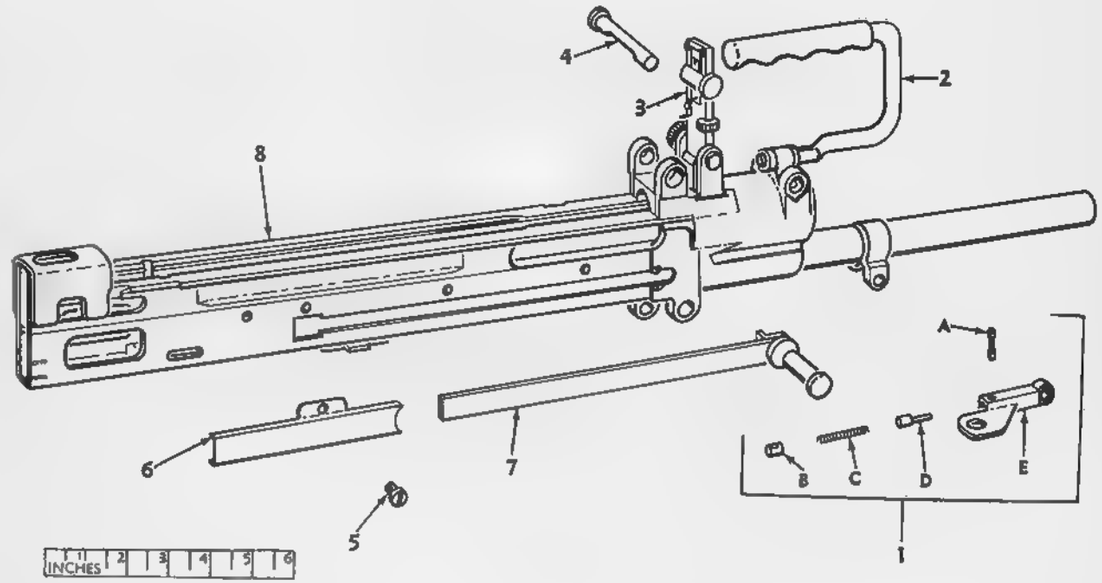
(5) Inspect pins, springs, screws, and plungers for wear, damage or distortion.

(6) Inspect cocking lever guide for damage or distortion.

(7) Inspect cocking lever for retention in forward position.

77. Assembly

Refer to TM 9–1005–224–12 for assembly of receiver.



1	Lever group	2	Handle 7269231	5	Screw MS–35228–60
	a. Pin 7269248	3	Sight 7269277	6	Guide 7269198
	b. Retainer 7269266	4	Shaft 7269276	7	Lever 7269236
	c. Spring 7269300			8	Receiver 7269253
	d. Plunger 7269249				
	e. Lever 7269244				

Figure 25. Receiver group—exploded view.

78. Removal
(fig. 26)

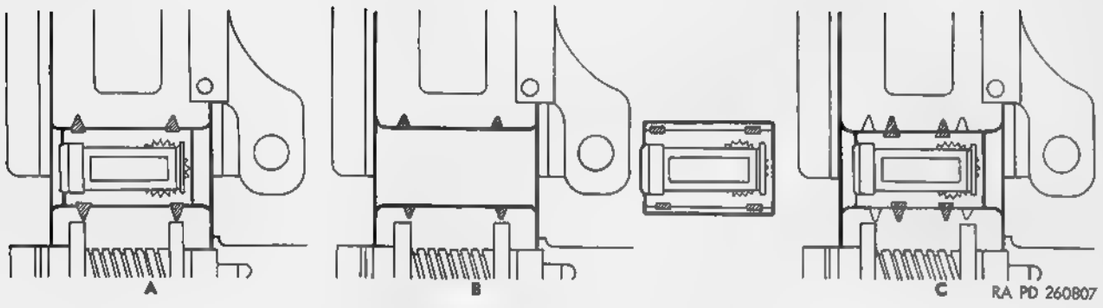


Figure 26. Removing and installing sight.

Remove staking that retains beveled sight base. Remove sight group from slotted portion of receiver (fig. 26, a and b).

79. Disassembly

Further disassembly of rear sight is not required.

80. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair.

(1) Inspect for wear, damage or distortion that would impair functioning.

(2) When sight is replaced, weapon must be targeted before staking sight base.

81. Installation
(fig. 26, c and d)

Install rear sight in slotted portion of receiver. Target weapon and stake base of sight in four places.

82. Removal of Cradle From Tripod
(fig. 27)

Unscrew azimuth locking handle to remove cradle from tripod assembly.

83. Disassembly

a. Cradle Assembly. (fig. 28)

(1) Remove locking nut from screw stud of locking handle. Withdraw screw stud, washer, and handle.

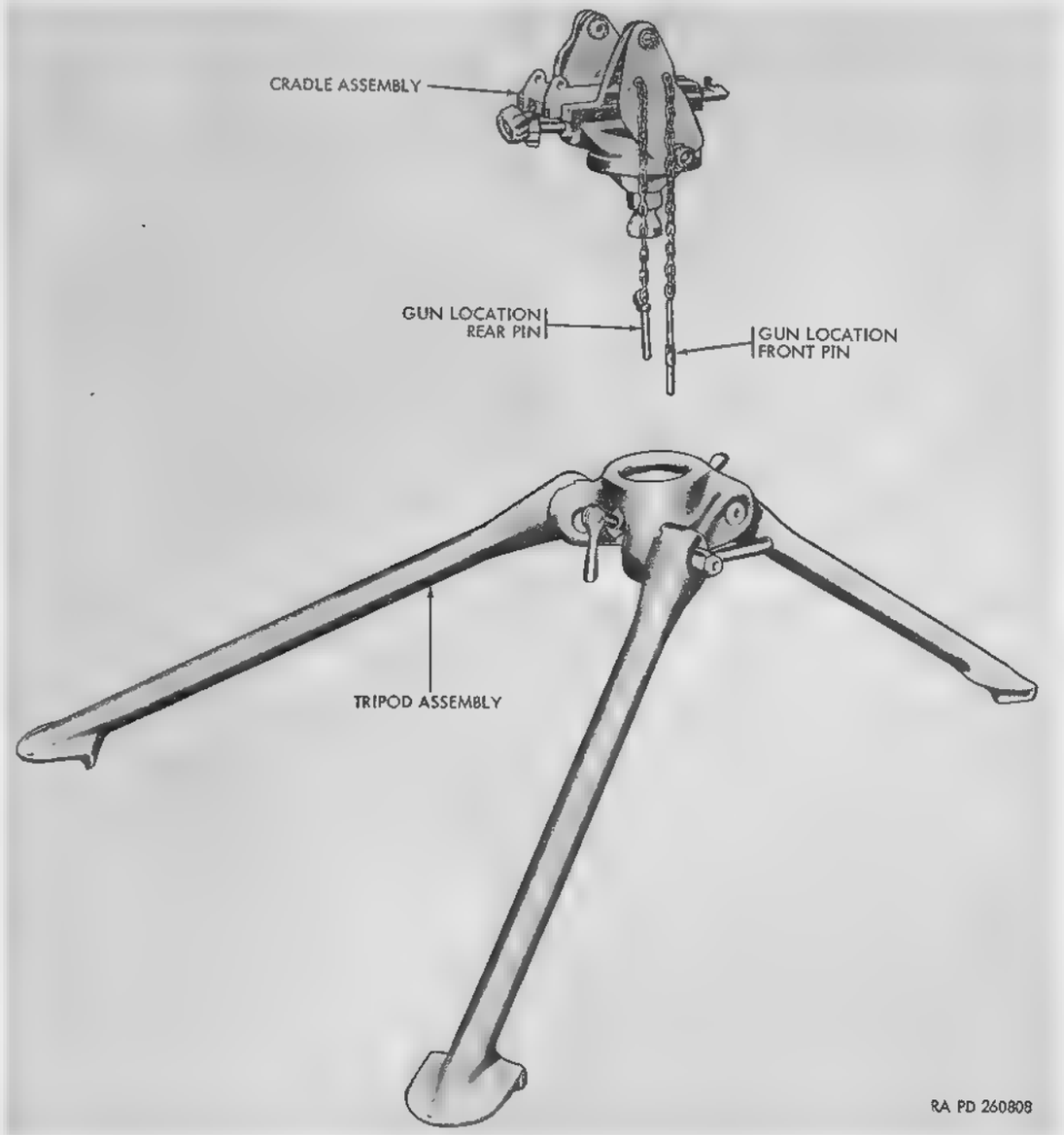
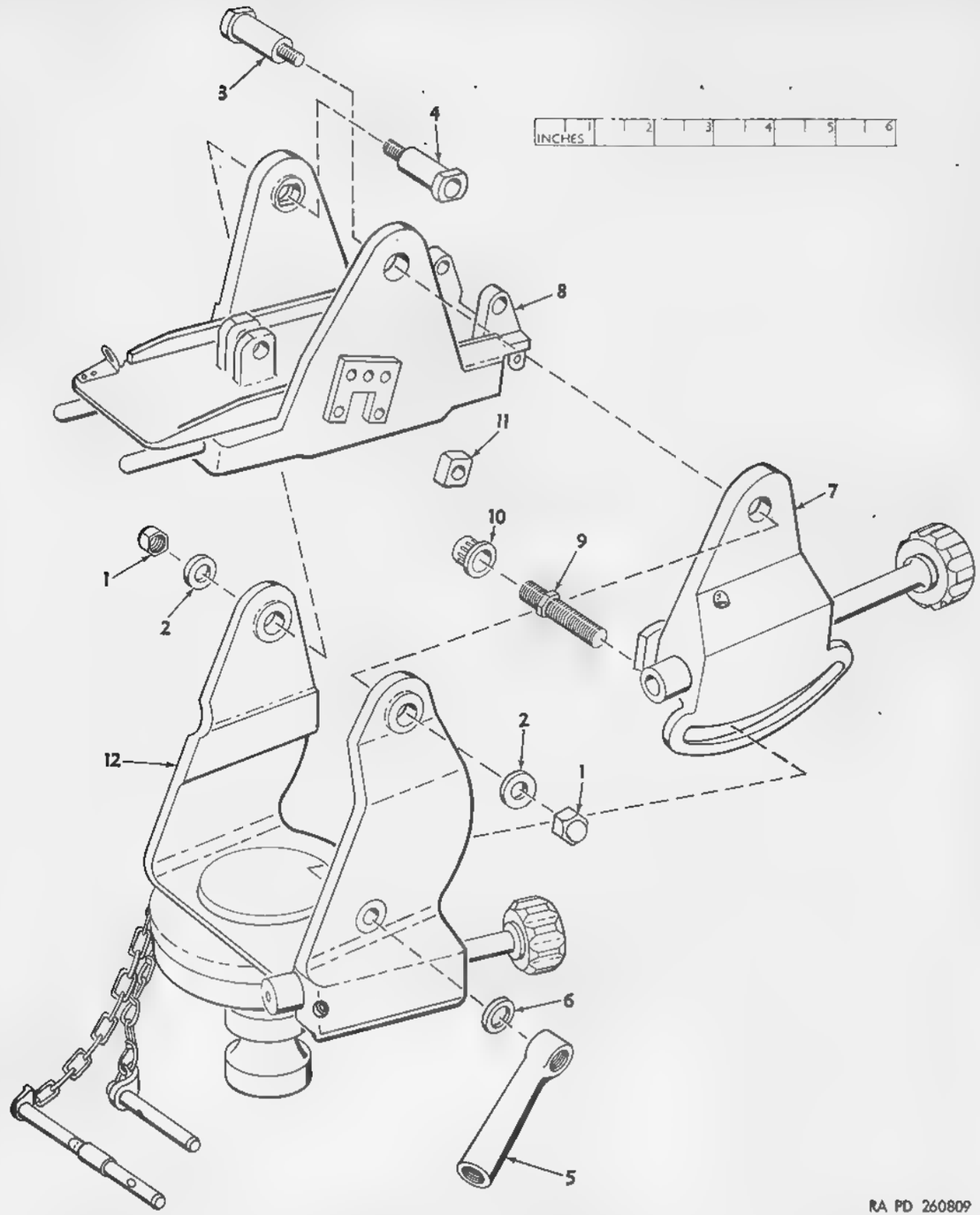


Figure 27. Cradle removed from tripod.



RA PD 260809

1	Nut 503341	4	Pin 7269574	7	Elevation control case 7269507	10	Nut 7269506
2	Washer MS–15795–111	5	Handle 7269505	8	Yoke and recoil 7269526	11	Block 7269503
3	Pin 7269575	6	Washer MS–15795–114	9	Stud 7269504	12	Pintle 7269548

Figure 28. Cradle assembly—partial exploded view.

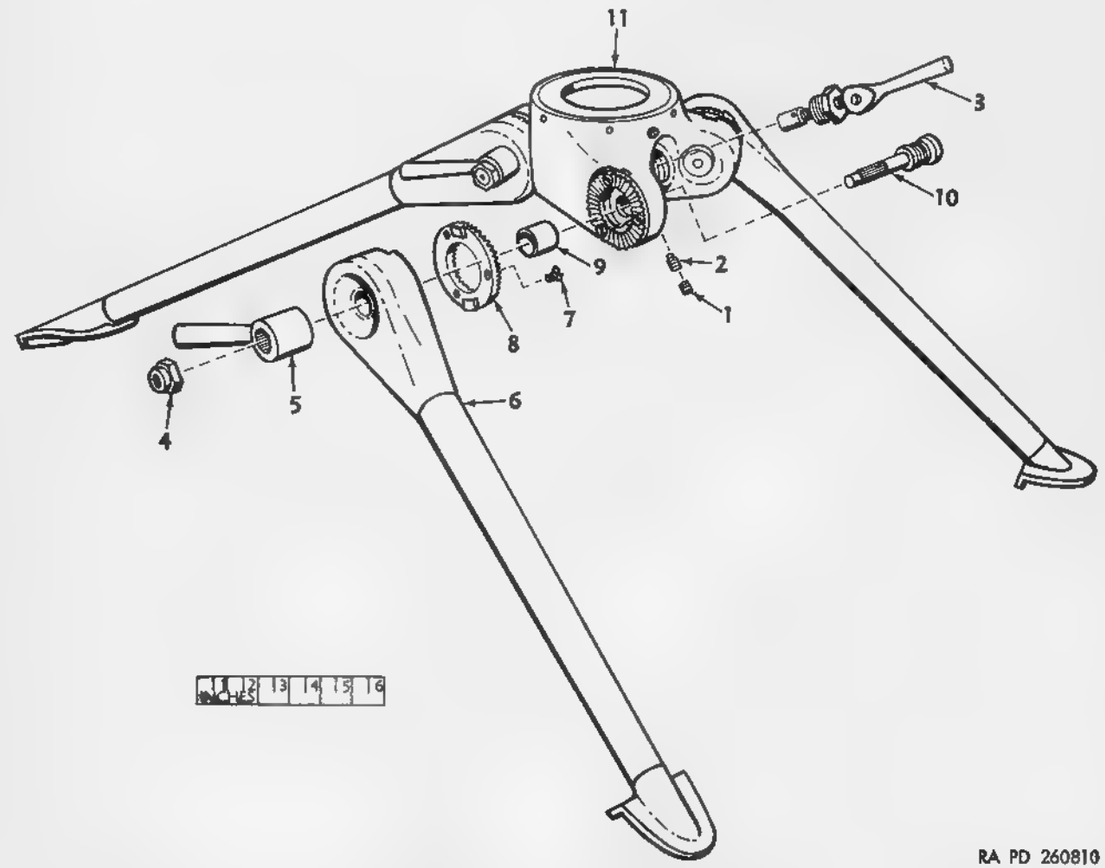
(2) Unscrew trunnion pinion nut (right and left) to remove trunnion pins.
(3) Remove rivets securing quick release pin assemblies (w/chains).
(4) Remove rivets securing spring type clip for mounting quick release pin.

b. Tripod Assembly. (fig. 29)
(1) Remove hex-socket setscrew and hex-socket half dog point setscrew from tripod head, then remove socket setscrew from thin safety hex-nut, loosen nut, unscrew and withdraw main spindle clamp assembly and keeper.
(2) Remove the safety hex-nut, withdraw handle and remove leg clamping screw from tripod leg socket.
(3) Remove flathead screws from tripod leg head and remove flat knurled washer.

84. Cleaning, Inspection, and Repair

a. Cleaning. Refer to TM 9–1005–224–12 for cleaning instructions.

b. Inspection and Repair.
(1) *Cradle assembly.*
(*a*) Inspect clip for quick release front pin for distortion or damage. Clip must retain pin in locked position.
(*b*) Inspect elevation clamping handle for wear or damage. Clamping stud and handle must retain and be capa-



RA PD 260810

1	Screw 7269602	4	Nut 7269603	7	Screw 7146227	10	Screw 7146131
2	Screw 7269601	5	Handle 7269604	8	Plate 7269612	11	Socket assy 7269607
3	Clamp assy 7269594	6	Leg assy 7269623	9	Spacer 7146223		

Figure 29. Tripod assembly—partial exploded view.

ble of retaining recoil platform in locked position within the yoke, without movement, at any degree of elevation or depression when the weapon is installed.

(*c*) Inspect trunnions and nuts for wear or damage. No loose or free movement permitted.

(*d*) Inspect quick release pin and receiving lugs on recoil platform for wear or damage. Mount weapon in a locked position without free movement.

(2) *Tripod assembly.*

(*a*) Inspect spindle clamp assembly for wear or damage. Clamp must hold cradle assembly securely in tripod head.

(*b*) Inspect leg clamping handles for wear or damage. Locking action of clamps must securely retain tripod legs to head.

(*c*) Inspect flat knurled washer for wear or damage. Knurled serrations must engage and be able to hold tripod legs in position when clamping handles are tightened.

(*d*) Inspect azimuth ring for free movement and legibility of indexes and numbers.

(*e*) Inspect azimuth ring locking screw for positive locking action of azimuth ring.

(*f*) Inspect tripod legs and tripod head for cracks or damage to cast components.

(3) All parts mentioned above for cradle assembly and tripod assembly worn or damaged beyond repair will be replaced.

85. Assembly

a. Cradle Assembly.

(1) Position spring type clip and rivet to recoil platform.

(2) Position quick release pin asemblies (w/chains) and rivet.

(3) Secure trunnion pinions with pinion nuts.

(4) Position handle and secure with screw stud, washer, and locking nut.

b. Tripod Assembly.

(1) Install tripod leg head and knurled washer, then secure with flathead screws.

(2) Install leg clamping screw, and handle and secure with safety hex-nut.

(3) Position main spindle clamp and keeper, then secure with hex-socket setscrews.

CHAPTER 6

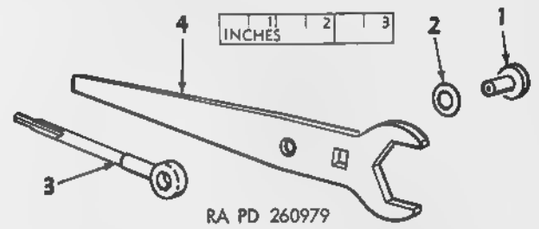
MAINTENANCE OF TOOLS

86. Disassembly

Remove pin from wrench (fig. 30).

87. Assembly

Position reamer and washer and secure with the pin (fig. 30). Do not rivet pin too tightly as reamer must move in position for function.



1 Pin 7269348
2 Washer 7269349
3 Reamer 7269347
4 Wrench 7269346

Figure 30. Combination wrench and screwdriver with reamer 7269345—exploded view.

CHAPTER 7

FINAL INSPECTION

88. General

After repair, weapon will be given a final inspection, prior to return to user, as prescribed in paragraphs 89 through 97.

89. Barrel Group

a. Check the bore for dirt, rust, erosion, and deformation of the lands and grooves. The diameter of the barrel bore will not exceed 0.306 inches.

b. Check the headspace for a minimum of 1.631 inches and a maximum of 1.640 inches.

c. Check flash suppressor for cracks and deformation.

d. Inspect front sight for being bent or damaged.

e. Inspect the gas cylinder for dirt and fouling from gas and functioning of the piston.

f. Inspect barrel socket for burrs and cracks. Check camming action of the bolt in the barrel socket.

g. Gage gas port hole diameter. It should not exceed 0.137 inches.

90. Buffer Group

Check action of the buffer for functioning.

***Caution:* Do not oil buffer components.**

91. Bolt Group

a. Check for firm locking of the bolt in the barrel socket with the bolt in firing position.

b. Measure the firing pin protrusion. The minimum protrusion will not be less than 0.035 inches and the maximum protrusion will not be over 0.043 inches.

c. Check the bolt's camming action by operating the gun, using a dummy round. The bolt should operate freely, smoothly, and eject the round.

92. Operating Rod

a. Check operating rods sear notch for wear or rounded edges. Notch should mate securely with the trigger sear until released by the trigger.

b. Inspect camming surfaces for wear and burrs.

93. Forearm Group

a. Inspect forearm for secure locking when installed.

b. Check for loose rivets and damage to rubber coating. Rubber coating will be securely bonded.

94. Cover Group

a. Check body for alinement and damage.

b. Inspect all components for burrs, damage and function.

c. Check cover latch for cracks and damage. Check that cover latch locks cover securely when weapon is in operation.

95. Tray Group

a. Check body for cracks, damage or distortion.

b. Check action for functioning to retain and position the cartridge.

96. Trigger Mechanism Group

a. Check housing for dents and damage.

b. Check bonding of rubber coating and damage to rubber coating.

c. Check functioning of sear for firm mating with sear notch in operating rod. Sear will be checked for wear, burrs and damage and mating edge will not be rounded.

d. Check safety for functioning when in a safe position. Check for smoothness of operation and binding when operating lever from one position to the other.

e. Trigger pull will be from 6 to 11.5 lbs.

97. Receiver Group

a. Inspect receiver body for loose rivets, cracks, dirt, corrosion and wear on guides.

b. Check cocking lever for secure locking in forward position when weapon is in operation.

c. Check the secure locking of the barrel. Inspect barrel lock for burrs, cracks and damage.

d. Inspect carrying handle for functioning.

e. Inspect rear sight for damage. Check movement of setting, it should move freely but not loosely.

CHAPTER 8

REPAIR STANDARDS

98. General

The standards included herein give the minimum and maximum measurements of repaired parts. Normally, all parts that have not been worn beyond the dimensions or limits indicated or damaged from corrosion will be approved for service, those beyond the dimensions or limits will be replaced.

Tabulated Data For Repair Standards

Figure No.	Reference No.	Point of measurement	Repair standards	
			Minimum	Maximum
8	----------	Barrel Group:		
		Breech bore ----------		.306
		Bore of barrel----------	Check with barrel erosion gage 5910297. Check for pits and wear on lands.	
		Headspace ----------	Use field test bolt 7799699. 1.631	1.640
8	2	Flash suppressor ------	Check for cracks at front of splines.	
8	5	Front sight ----------	Inspect for being bent or damaged.	
8	12	Barrel socket ----------	Inspect for burrs or cracks.	
8	11	Gas port hole----------		.137
14	----------	Stock Group:		
		Shoulder rest ----------	Inspect to see if not bent and operates freely.	
14	4	Body of stock----------	Inspect for damaged surfaces and distortion.	
14	3	Sling swivel ----------	Inspect for being bent or distorted and functions freely.	
15	----------	Buffer Group:		
15	12	Body ----------	Inspect body for distortion.	
15	10	Plunger ----------	Inspect for burrs or distortion.	
15	9	Pads ----------	Inspect rubber pads for deterioration or distortion also inspect brass split rings.	
15	4–5 7–8	Springs ----------	Inspect all springs for kinks, set or if broken.	
15	11	Gasket O-rings --------	Inspect for breaks and cracks.	
15	2	Cap and cover----------	Inspect for burrs and cracks.	
15	1	Pin ----------	Inspect for burrs, if broken or bent.	

Tabulated Data For Repair Standards—Continued

Figure No.	Reference No.	Point of measurement	Repair standards	
			Minimum	Maximum
17	----------	Bolt Group:		
17	13	Bolt ----------	Inspect stripping lug on front of body, should not be rounded. Inspect camming surface for wear or burrs. Inspect extractor slot for burrs. Inspect firing pin hole.	.108
17	6	Firing pin ----------	Inspect firing pin protrusion. .035	.043
17	5	Actuator roller --------	Inspect for damage or if frozen.	
17	10	Extractor ----------	Check for chips or if broken.	
17	3, 9, 12	Springs ----------	Inspect for kinks, bent or if broken. Be sure tension gives proper function.	
17	5	Cam actuator assembly and bolt plug.	Inspect roller for proper functioning, damaged threads or cracks.	
18	----------	Operating Rod Group:		
18		Operating rod ---------	Inspect if bent or distorted. Check radii in sear notch. Wear not to be in excess of 0.030 inches. Inspect bolt camming surfaces for burrs. Inspect front end of rod for burrs.	
18	2	Roller ----------	Inspect yoke roller for burrs. Inspect roller for free movement, also for wear or burrs.	
19	----------	Forearm Group:		
19	7	Body ----------	Inspect for damage also loose rivets and firm bonding of rubber coating.	
19	1	Lock and locking spring pin.	Inspect for weakness or if broken. Check functioning.	
19	6	Swivel ----------	Inspect for deformation and function.	
20	----------	Cover Group:		
20	8	Frame ----------	Inspect frome for alinement and damage. Check feed cam lever stud, roller and rear cartridge guide studs for being secure, also, broken spring and burrs. Inspect rivets and bonding of rubber coating. Check cover latch spring for weakness or if broken. Check functioning of cover latch.	
20	1	Feed cam assembly-----	Inspect for burrs or distortion. Inspect retainer cam for operation. Inspect return spring for weakness.	
20	2	Feed cam lever----------	Inspect spring for weakness or if broken, also, check slotted ends for wear, burrs or cracks.	
20	3	Feed pawl assembly-----	Inspect spring for weakness or if broken. Check pawls for wear and functioning. Check rollers for burrs and functioning.	
20	7	Rear cartridge guide---	Inspect for damage and distortion.	
20	6	Front cartridge guide---	Check for damage and wear. Check to see if rear stripping surface is square and not rounded.	

Tabulated Data For Repair Standards—Continued

Figure No.	Reference No.	Point of measurement	Repair standards	
			Minimum	Maximum
20	4	Cartridge guide pin and ring retainers.	Inspect pin for alinement and wear. Check rings for distortion.	
20	5	Hinge pin	Inspect for alinement, wear and damage.	
		Hinge pin retaining spring.	Inspect for tension and locking surface not damaged.	
		Cover hinge	Inspect for distortion and burrs. Check detent for wear.	
23		Tray Group:		
23	6	Frame	Inspect for cracks, damage or distortion.	
23	4	Belt holding pawl	Inspect for burrs, wear and spring functioning.	
23	5	Belt holding pawl spring.	Inspect for weakness or if broken.	
23	3	Rollers	Inspect for burrs and functioning.	
24		Trigger Assembly:		
24	12	Housing	Inspect for mutilation of rubber coating.	
24	1	Spring lock	Inspect for tension or if broken.	
24	10	Holding pin	Inspect for burrs, wear or distortion.	
24	4	Sear	Inspect for burrs, broken or worn surfaces on notch.	
24	6	Sear spring	Inspect for proper tension or if broken.	
24	5	Sear plunger	Inspect for burrs or bent.	
24	2	Trigger pin	Inspect for burrs or if worn.	
24	11	Trigger	Inspect for distortion and burrs also check trigger spring for tensioning and functioning.	
24	7	Safety	Inspect for burrs and functioning.	
24	9	Safety spring	Inspect for tension and functioning.	
24	8	Safety plunger	Inspect for burrs and distortion.	
25		Receiver Group:		
25	8	Receiver	Inspect for cracks, burrs and loose rivets.	
25	3	Rear sight	Inspect for functioning, distortion or damage.	
25	2	Carrying handle	Inspect if bent or broken. Check rubber coating if loose or mutilated.	
25	7	Slide assembly	Inspect to assure cocking handle will remain in forward position during firing.	
25	7	Cocking lever handle	Inspect portion of slide that contacts operating rod yoke for burrs, worn edges, or if broken.	
25	6	Guide slide	Inspect for distortion.	
25	4	Barrel lock shaft	Inspect for functioning and that it locks barrel securely in receiver.	

CHAPTER 9

SHIPMENT AND STORAGE

99. Shipping Instructions

a. Responsibility. When shipping the machine gun and mount, the office in charge of preparing the shipment will be responsible for furnishing the materiel in a serviceable condition and properly processed for shipment, including the preparation of army shipping documents.

b. Army Shipping Documents. Prepare all army shipping documents in accordance with AR 725–5.

c. Preparation for Shipment. Materiel removed from storage for shipment, need not be reprocessed unless inspection reveals it to be inadequately preserved or when it is necessary because of anticipated in-transit weather or shipping conditions. Preservatives must not be removed or disturbed unless it is necessary to insure that the materiel is complete and serviceable. If preservatives are removed, they must be restored prior to shipment.

d. Cleaning, Drying, Preservation, and Packaging Instructions.

(1) *Cleaning.*

(*a*) Refer to TM 9–1005–224–12 for disassembly, if necessary to clean components of weapon.

(*b*) Parts that have been subjected to burned powder residues will be cleaned with solvent cleaning compound (rifle bore cleaner) using a bristle brush.

Caution: **Do not use a wire brush.** Parts that have not been subjected to burned powder residues can be cleaned with any petroleum solvent that will accomplish the cleaning without damage to the item. Refer to TB ORD 623 for detailed procedures.

(2) *Drying.* Refer to TB ORD 623 for the different methods of drying weapon or components that have been cleaned before preserving and packaging.

(3) *Preservation and packaging instructions.*

(a) *Preservation.* Preservation methods and instructions for use will be in accordance with TB ORD 623.

(b) *Packaging.* Packaging instructions are not available at this time, however, instructions for the use of volatile corrosion inhibitor (VCI) for machine guns outlined in TB ORD 623 will be similar to packaging of this weapon.

e. Marking. Marking instructions will be in accordance with TM 9–1005.

APPENDIX

REFERENCES

1. Publication Indexes

The following indexes should be consulted frequently for latest changes or revisions or references and for new publications relating to materiel covered in this technical manual:

Military Publications:

Index of Administrative Publications	DA PAM 310–1
Index of Army Motion Pictures, Film Strips, Slides and Phono-Recordings	DA PAM 108–1
Index of Blank Forms	DA PAM 310–2
Index of Graphic Training Aids and Devices	DA PAM 310–5
Index of Supply Manuals—Ordnance Corps	DA PAM 310–29
Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.	DA PAM 310–4
Index of Training Publications	DA PAM 310–3

2. Supply Manuals

a. General.

Introduction	ORD 1

b. Repair and Rebuild.

Shop Set, Field Maintenance, Small Arms	SM 9–4–5180 (J8–6)
Gun, Machine, 7.62-MM, M60 and Mount, Machine Gun, 7.62-MM, M91	TM 9–1005–224–12P
Gun, Machine, 7.62-MM, M60 and Mount, Machine Gun, 7.62-MM, M91	TM 9–1005–224–35P

3. Forms

DA Form 468 (Unsatisfactory Equipment Report)
DA Form 828 (Job Time Ticket—Individual)
DA Form 829 (Rejection Memorandum)
DA Form 2028 (Recommended Changes to DA Technical Manual, Parts Lists or Supply Manual 7, 8 or 9)
DA Form 9–79 (Parts Requisition)
DA Form 9–80 (Job Order File)
DA Form 9–81 (Exchange Part or Unit Identification Tag)
DD Form 6 (Report of Damaged or Improper Shipment)

4. Other Publications

a. Camouflage.

Camouflage, Basic Principles and Field Camouflage	FM 5–20

b. Decontamination.

Decontamination	TM 3–220
Small Unit Procedures in Atomic, Biological, and Chemical Warfare	FM 21–40

c. Demolition to Prevent Enemy Use.

Explosives and Demolitions	FM 5–25
Ordnance Service in the Field	FM 9–5

d. General.

Authorized Abbreviations and Brevity Codes	AR 320–50
Malfunctions Involving Ammunition and Explosives	AR 700–1300–8
Stock Control: Common Classification Code	AR 711–50
Accident Reporting and Records	AR 385–40
Unsatisfactory Equipment Report	AR 700–38
Safety: Regulations for Firing Ammunition for Training, Target Practice, and Combat.	AFR 50–13
Military Symbols	FM 21–30 AFM 55–3
Military Training	FM 21–5
Ordnance Maintenance and General Supply in the Field	FM 9–10
Techniques of Military Instruction	FM 21–6
Dictionary of United States Army Terms	AR 320–5
Inspection of Ordnance Materiel in the Hands of Troops	TM 9–1100

e. Operation.

Operation and Organizational Maintenance: 7.62-MM, Machine Gun M60 and 7.62-MM Machine Gun Mount, M91.	TM 9–1005–224–12

f. Repair.

Lubrication	TM 9–2835
Lubrication Order	LO 9–1005–224–10
Command Maintenance Inspections	AR 750–8
Maintenance of Supplies and Equipment: Maintenance Responsibilities and Shop Operation.	AR 750–5
Spot Check Inspection and Reports; Ordnance Corps Materiel	AR 750–925
Ordnance Maintenance: Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materials Including Chemicals, Lubricants, Indicators and Hydraulic Fluids.	TM 9–1007
Painting Instructions for Field Use	TM 9–2851
Ordnance Maintenance and General Supply in the Field	FM 9–10

g. Shipment and Standby or Long-Term Storage.

Preparation, Processing, and Documentation for Requisitioning, Shipping, and Receiving.	AR 725–5
Instruction Guide: Ordnance Preservation, Packaging, Packing, Storage, and Shipping.	TM 9–1005
Preservation, Packaging and Packing of Military Supplies and Equipment.	TM 38–230
Logistics (General): Report of Damaged or Improper Shipment	AR 700–58
Protection of Ordnance General Supplies in Open Storage	TB ORD 379
Ordnance Storage and Shipment Chart Group A Major Items and Major Combinations of Group A.	TB 9–OSSC–A
Packaging of Small Arms Materiel with Volatile Corrosion Inhibitor (VCI).	TB ORD 623
Standards for Oversea Shipment and Domestic Issue of Ordnance Materiel Other Than Ammunition and Army Aircraft.	TB ORD 385
Marking of Oversea Supply	SR 746–30–5 AFM 75–4

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[AG 472.5 (17 Mar 59)]

By Order of *Wilber M. Brucker*, Secretary of the Army:

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NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320–50.

☆ U. S. Government Printing Office: 1959—480510