

Superseded by TM 9-1005-208-35 (Mar. 70)
TM 9-1005-208-35

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DIRECT AND GENERAL SUPPORT
AND
DEPOT MAINTENANCE MANUAL

RIFLE, CALIBER .30,
AUTOMATIC,
BROWNING, M1918A2

RESCINDED
FOR HISTORICAL USE ONLY



HEADQUARTERS, DEPARTMENT OF THE ARMY
SEPTEMBER 1964

Technical Manual

No. 9-1005-208-35

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON D. C., 20315 22 September 1964

RIFLE, CALIBER .30, AUTOMATIC, BROWNING, M1918A2

		Paragraph	Page
CHAPTER	1. INTRODUCTION		
Section	I. General.	1-3	2
	II. Description and data	4,5	3,4
CHAPTER	2. PARTS, SPECIAL TOOLS, AND EQUIPMENT	6-9	6
CHAPTER	3. INSPECTIONS		
Section	I. General.	10-12	10
	II. Inspection procedures	13-15	11,12
CHAPTER	4. GENERAL MAINTENANCE	16-22	14,15
CHAPTER	5. REPAIR		
Section	I. Magazine	23-28	16
	II. Gas cylinder and fore end group	29-34	18-23
	III. Trigger guard assembly	35-43	23-28
	IV. Slide and piston group	44-49	29-33
	V. Bolt group	50-55	33,34
	VI. Butt stock, buffer and actuator group	56-59	36-39
	VII. Barrel and receiver group	60-66	41-48
	VIII. Rear sight assembly	67-72	49
	IX. Bipod assembly	73-78	51
	X. Winter trigger kit	79-82	53
CHAPTER	6. FINAL INSPECTION	83,84	55
CHAPTER	7. REPAIR STANDARDS	85,86	57
CHAPTER	8. OVERHAUL PROCEDURES	87	58
CHAPTER	9. PREPARATION AND SHIPPING INSTRUCTIONS	88-90	59
APPENDIX	REFERENCES		60
INDEX			62

*This manual supersedes TM 9-2111-1, 28 February 1957.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual is published for the information and guidance of personnel responsible for direct and general support and depot maintenance of caliber .30 Browning automatic rifle M1918A2. It contains information on maintenance which is beyond the scope of 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 maintenance personnel in the pertinent operator's technical manuals.

b. This manual contains description of and procedures for removal, disassembly, inspection, repair, assembly and installation of groups and assemblies of the caliber .30 Browning automatic rifle M1918A2. The appendix contains a list of current references, including supply manuals, technical manuals, and other available publications applicable to the materiel. The maintenance allocation chart is contained in TM 9-1005-208-12P. TM 9-1005-208-35P contains a list of repair parts and special tools for direct and general support and depot maintenance.

c. FM 23-15 contains operating instructions for the materiel and contains all maintenance operations allocated to using organizations in performing maintenance work within their scope.

d. The direct reporting of errors, omissions and recommendations for improving this equipment manual by the individual user is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form may be completed using pencil, pen or typewriter. DA Forms 2028 will be completed by the individual using the manual and forwarded direct to:

Commanding General
Headquarters
U. S. Army Weapons Command
Attn: AMSWE-SMM-P
Rock Island Arsenal
Rock Island, Illinois 61202

e. This manual differs from TM 9-2111-1, dated 28 February 1957 as follows:

- (1) Adds information on: Removal, installation, disassembly, assembly, cleaning, inspection procedures and overhaul instructions.
- (2) Revised information on: Assemblies and groups.
- (3) Deletes reference to: Gas cylinder assembly previously used and early design gas pistons.

2. Maintenance Allocation

The prescribed maintenance responsibilities will be as reflected in the maintenance allocation chart listed in TM 9-1005-208-12P.

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 person responsible for their compilation, maintenance, and use. Records, reports and authorized forms are normally utilized to indicate the type, quantity, and condition of materiel to be inspected, repaired, or to be used in repair. Properly executed forms convey authorization and serve as records for repair or replacement of materiel in the hands of troops.

b. *Authorized Forms.* The forms generally applicable to units maintaining this materiel are listed in the appendix. For a

listing of all forms, refer to DA Pam 310-2. For instructions on use of these forms, refer to TM 38-750.

c. Reports of Accidents.

(1) *Injury to personnel or damage to materiel.* The reports necessary to comply with 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 immediately be discontinued. In addition to applicable reports required in (1) above, details of the accident or malfunctions will be reported as prescribed in AR 700-1300-8.

d. Report of Unsatisfactory Equipment or Materials. Any deficiencies detected in the equipment covered herein, which occur under the circumstances indicated in AR 750-5 will be reported immediately in accordance with applicable instructions in cited regulations.

Section II. DESCRIPTION AND DATA

4. Description

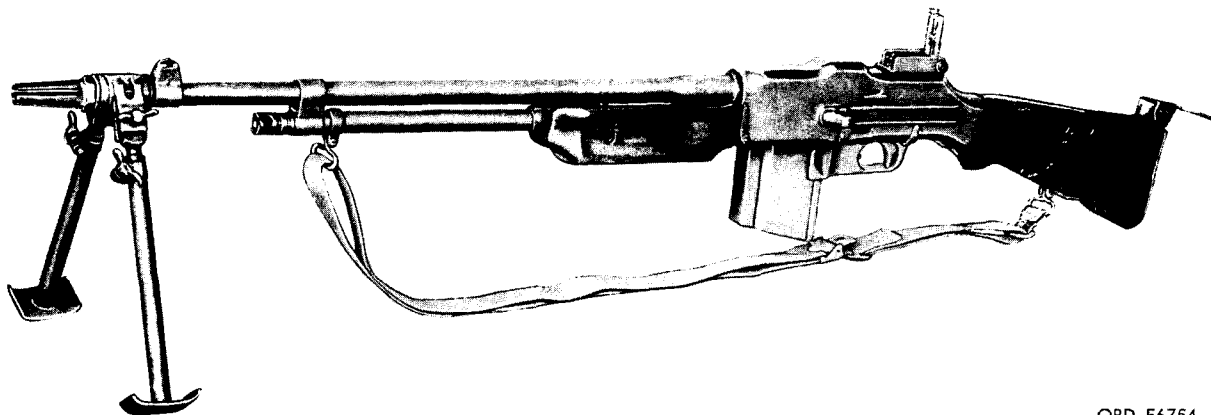
a. General. The caliber .30 Browning automatic rifle M1918A2 (fig. 1 and 2) is an air-cooled, gas-operated, magazine fed, shoulder-type weapon. The rifle can be easily disassembled into groups and assemblies. It is composed of magazine, gas cylinder and fore end group, trigger guard assembly, slide and piston group, bolt group, butt stock, buffer and actuator group, bipod assembly, rear sight assembly and barrel and receiver group (fig. 3). The rifle contains a cyclic rate mechanism which is housed in the stock and trigger guard mechanism. This mechanism allows two rates of automatic fire, one at 550

rounds per minute (normal cyclic rate) and one at 350 rounds per minute (slow cyclic rate).

Note: The key numbers shown below in parentheses refer to figure 3.

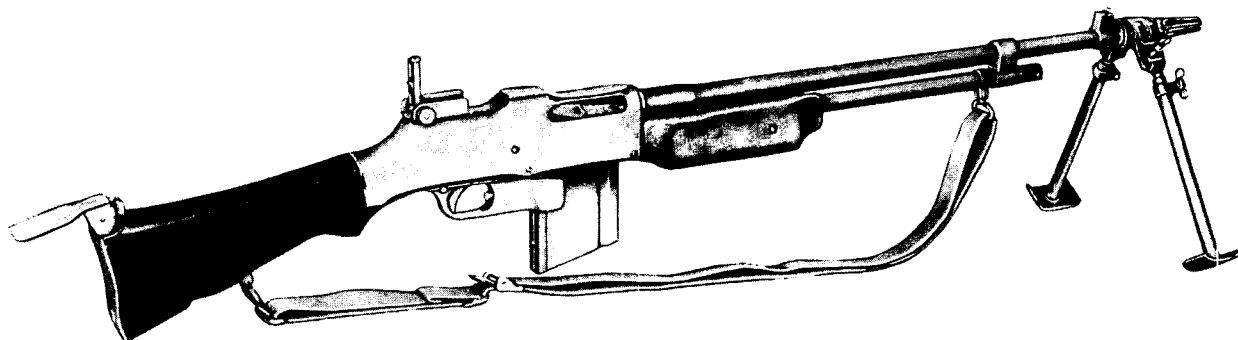
b. Magazine. The magazine (1) is located just forward of the trigger guard assembly at the bottom of the receiver. It holds 20 rounds of ammunition.

c. Gas Cylinder and Fore End Group. The gas cylinder and fore end group (3) is located just below the barrel on the front of the receiver. It consists of the fore end shield, gas cylinder assembly, fore end, front swivel assembly and gas cylinder tube.



ORD F6754

Figure 1. Caliber .30 Browning automatic rifle M1918A2—left front view.



ORD F6755

Figure 2. Caliber .30 Browning automatic rifle M1918A2—right rear view.

d. Trigger Guard Assembly. The trigger guard assembly (5) is located on the bottom of the receiver.

e. Slide and Piston Group. The slide and piston group (8) is housed within the gas cylinder and fore end group and receiver.

f. Bolt Group. The bolt group (9) is housed within the receiver.

g. Butt Stock, Buffer and Actuator Group. The butt stock, buffer and actuator group (10) is housed within the stock of the rifle.

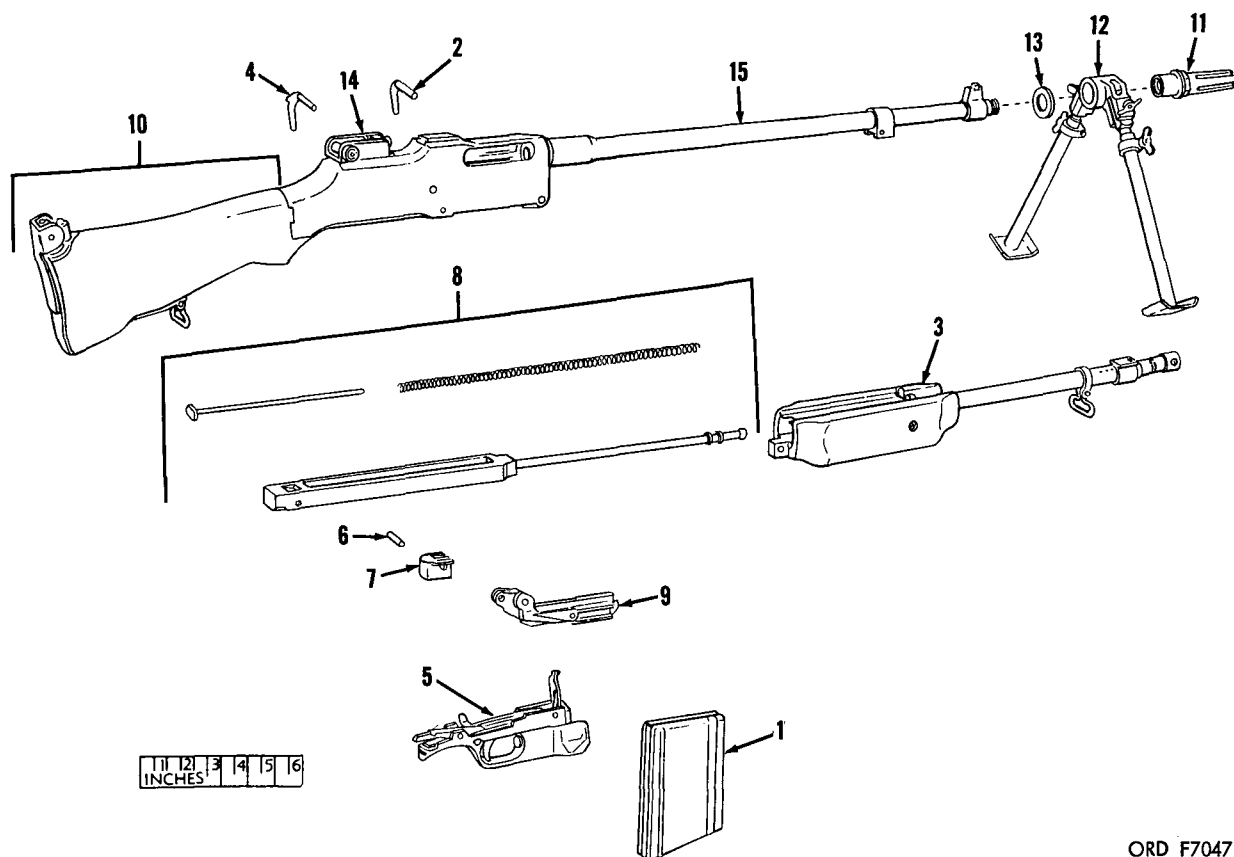
h. Bipod Assembly. The bipod assembly (12) is located at the muzzle end of the barrel and is secured to the barrel by the friction washer and flash hider or bipod bearing.

i. Rear Sight Assembly. The rear sight assembly (14) is located on the top of the receiver just forward of the stock.

j. Barrel and Receiver Group. The barrel and receiver group (15) serves as a support for all major groups and assemblies of the rifle.

5. Tabulated Data

Weight (with bipod and empty magazine) -----	19.4 lb
Weight (less bipod) -----	17 lb
Weight of bipod assembly -----	2.38 lb
Weight of magazine -----	0.44 lb
Length of rifle -----	47.8 in.
Length of barrel -----	24.07 in.
Rifling:	
Number of grooves ---	4
Right-hand twist (one turn in) -----	10 in.
Method of actuation ---	gas-operated
Feeding -----	magazine
Capacity -----	20 rds.
Cyclic rate -----	550 to 650 rds per min (high rate)
	350 to 450 rds per min (low rate)
Cooling -----	air
Sight radius -----	31.125 in.
Trigger pull -----	10 lb max, 6 lb min.
Ammunition -----	Ball, AP: tracer



ORD F7047

- | | |
|--|---|
| 1-Magazine 5564076 | 8-Slide and piston group |
| 2-Gas cylinder tube retaining
pin 5564074 | 9-Bolt group |
| 3-Gas cylinder and fore end
group | 10-Butt stock, buffer and
actuator group |
| 4-Trigger guard retaining
pin 6019680 | 11-Flash hider and bipod
bearing 7162966 |
| 5-Trigger guard assembly
6535469 | 12-Bipod assembly 7312239 |
| 6-Hammer pin 5022234 | 13-Friction washer 6147333 |
| 7-Hammer 6019643 | 14-Rear sight assembly 6535423 |
| | 15-Barrel and receiver group |

Figure 3. Caliber .30 Browning automatic rifle M1918A2-major assemblies groups, and components.

CHAPTER 2

PARTS, SPECIAL TOOLS, AND EQUIPMENT

6. General

Tools, equipment, and maintenance parts over and above those available to the using organization are supplied to direct and general support and depot maintenance units for maintaining and repairing the materiel.

7. Maintenance Parts

Maintenance parts are listed in TM 9-1005-208-35P 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 9-4-4933-A13 and SM 9-4-4933-A07 and are authorized for issue by tables of allowances and tables of organization and equipment.

9. Special Tools and Equipment

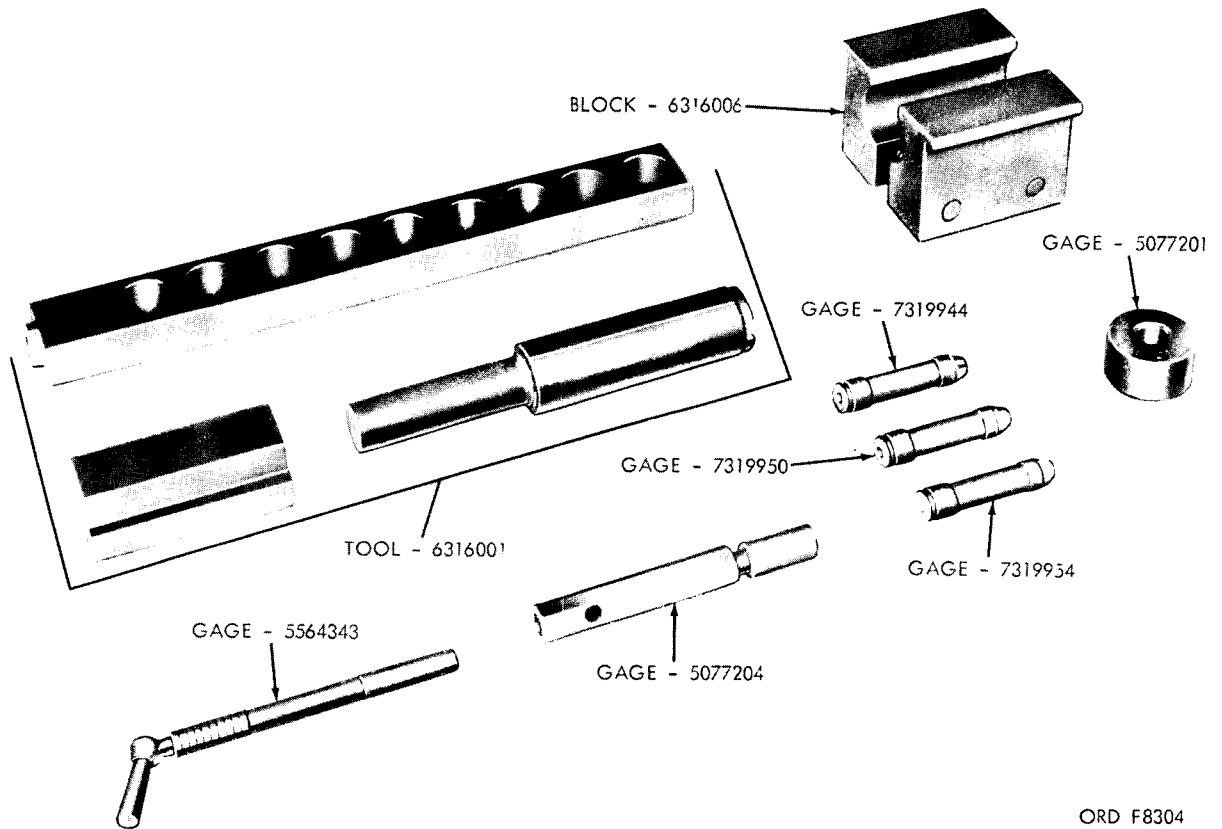
The special tools and equipment in table 1 are listed in and authorized for issue by SM 9-4-4933-E04 and TM 9-1005-208-35P. This tabulation contains only those special tools and equipment necessary to perform the operations described in this manual, is included for information only, and is not to be used as a basis for requisitions.

Table 1. Special Tools and Equipment.

Item	Identifying No.	References		Use
		Fig.	Para.	
ALIGNMENT TOOL, BUFFER TUBE:	6316001	4 and 46	65	To position the buffer tube in receiver so that one of eight grooves in head of buffer tube lies centrally horizontal with top of receiver.
BLOCK, VISE, BARREL HOLDING:	6316006	4 and 37	60	Used with wrench 6316005 to remove receiver from barrel.
BRUSH, CLEANING, SMALL ARMS: bore.	5564174	5	18c	To clean barrel bore.
BRUSH SET, CLEANING, SMALL ARMS: chamber.	6528362	5	18d	To clean the chamber.
EXTRACTOR, RUPTURED CARTRIDGE CASE:	7790352	5	64a(2) (a)	To remove ruptured cartridge cases.
FIXTURE, MEASURING, TRIGGER PULL:	7274758	6 and 21	42	To check trigger pull.
GAGE, BREECHBORE:	5564343	4 and 43	64a(3) (a)	To determine the wear of the bore at the origin of the rifling.
GAGE, HEADSPACE, RIFLE: (1.940).	7319944	4 and 44	64a(3) (a)	To gage the distance between the shoulder of the chamber at the face of the bolt.
GAGE, HEADSPACE, RIFLE: (1.946).	7319950	4	64a(3) (b)	To gage the distance between the shoulder of the chamber and the face of the bolt. (Used at time of rebarreling only).
GAGE, HEADSPACE RIFLE: (1.950).	7319954	4 and 44	64a(3) (b)	To gage the distance between the shoulder of the chamber and the face of the bolt.
GAGE, PLUG, PLAIN CYLINDRICAL:	5077204	4 and 14	32b(2) (f)	To gage inside diameter of the gas cylinder.
GAGE, RING, PLAIN:	5077201	4 and 26	47c(2)	To check diameter of gas piston.
REAMER ASSEMBLY, GAS CYLINDER CLEANER:	7268211	5 and 13	32b(2) (a)	To remove carbon from gas cylinder and face of piston.

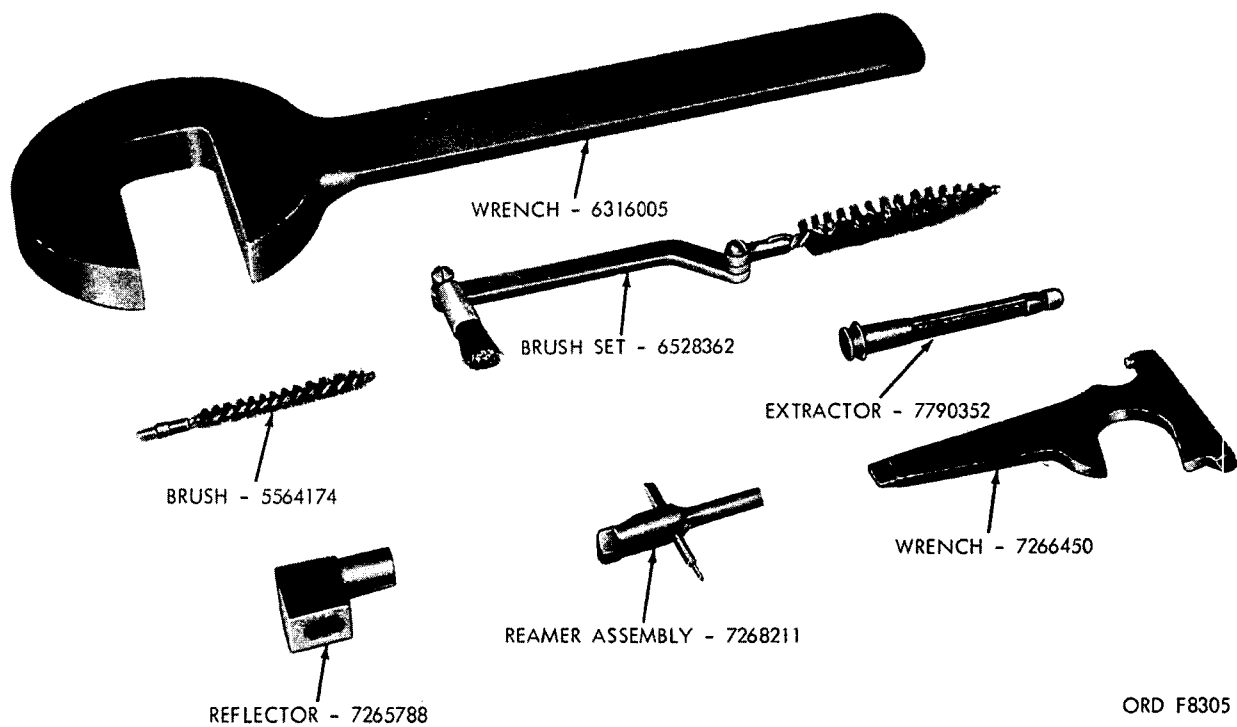
Table 1. Special Tools and Equipment—Continued.

Item	Identifying No.	References		Use
		Fig.	Para.	
REFLECTOR, GUN BARREL:	7265788	5 and 42	64a(2) (b)	For visual inspection of the barrel bore.
WRENCH, COMBINATION:	7266450	5	----	Used to disassemble and assemble the rifle.
WRENCH, OPEN END, FIXED:	6316005	5 and 37	60	Used with block vise 6316006 in removing the receiver from the barrel.



ORD F8304

Figure 4. Tools and equipment.



ORD F8305

Figure 5. Tools and equipment.

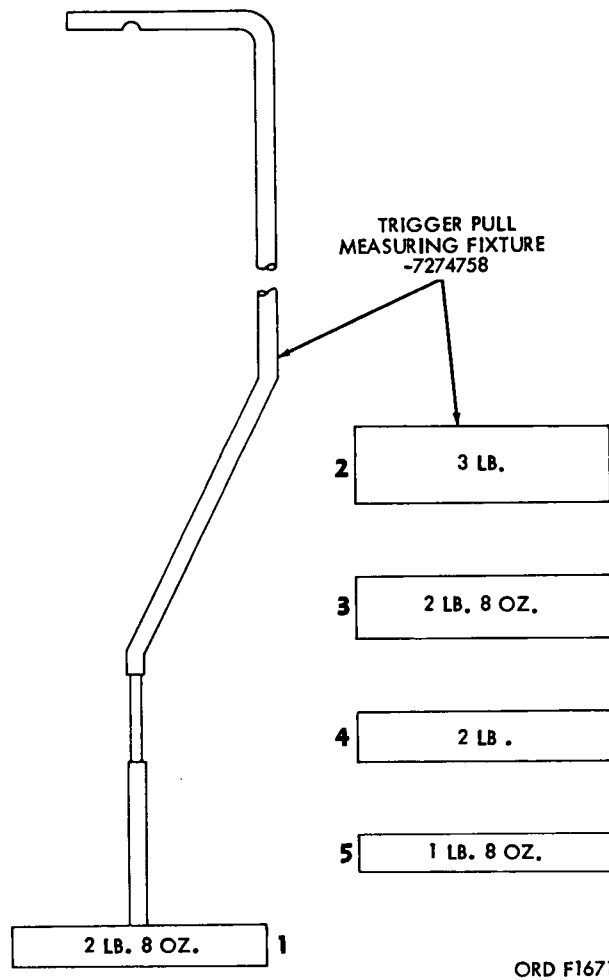


Figure 6. Trigger pull measuring fixture.

CHAPTER 3

INSPECTIONS

Section I. GENERAL

10. Scope

This chapter provides specific instructions for guidance during inspections by maintenance personnel of materiel in the hands of troops in the field, in shops and in alerted units scheduled for overseas duty. Troubleshooting information is incorporated wherever applicable as a normal phase of inspection.

11. Purpose of Inspection

Inspections are made for the purpose of (1) determining the condition of an item as to serviceability, (2) recognizing conditions that would cause failure, (3) assuring proper application of maintenance policies at prescribed levels, and (4) 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 direct and general support maintenance personnel.

a. Inspection of Materiel in the Hands of Troops in the Field.

- (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 safekeeping of tools, availability of repair parts and

supplies, and knowledge of the proper procedures for requisitioning supplies and equipment and follow-up thereon.

- (2) *Command maintenance.* Command maintenance inspection 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 inspection, correction of 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 the purpose of determining the degree of repair and parts requirement. This includes determination of modification work orders to be applied.
- (2) *In-process inspection.* This is performed in the process of repairing the materiel, to insure that all parts conform to the prescribed repair standards, that the workmanship is in accordance with approved methods and procedures, and that deficiencies 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 storage.

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 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. Avoid having live ammunition in the vicinity of the work area.

a. Check to see that the weapon has been cleared 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 cartridges.

14. Inspection of Materiel in the Hands of Troops in the Field

a. *General.* Refer to 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 materials. In the course of this inspection, the inspector will accomplish the following:

- (1) 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, or, if necessary, the materiel will be tagged for delivery to, and repair by maintenance personnel.

- (2) Determine causes of mechanical and functional difficulties that troops may be experiencing and check for apparent results of lack of knowledge, misinformation, neglect, improper handling and storage, security, and preservation.
- (3) See that all authorized modifications have been applied that no unauthorized alterations have been made, and that no work beyond the authorized scope of the unit is being attempted. Check the index in DA PAM 310-4 and the current modification work order files and TB's for any additional work orders issued, subsequent to the printing of this manual.
- (4) Instruct the using personnel in proper preventive-maintenance procedures where found inadequate.
- (5) Check on completeness of the organizational maintenance allowances and procedures for obtaining replenishments.
- (6) Check serial number for legibility.
- (7) Note general appearance, satisfactory metal finishes for guns range from dense black to medium light gray. Certain small arms weapons are manufactured with an unusual shade of neutral gray finish. Since this finish (gray zinc phosphate) is an accepted Department of the Army Standard, these weapons will not be rejected by

inspectors or troops for this condition. Rigid restrictions on shiny metal surfaces will not be carried to an extreme. A worn surface is objectional from the standpoint of visibility when it reflects light. Make certain all rear sights have a dull black or gray finish.

- (8) Wooden components must not be cracked in any way as to cause interference with the structural strength. Surface cracks, bruises, or dents do not affect the strength of wood components and should not be cause for rejection.
- (9) Note general appearance. Check exterior of materiel for missing or broken parts.
- (10) Check storage conditions of general supplies and ammunition.
- (11) Initiate a thorough report on materiel on "deadline" with reasons therefore, for further appropriate action.
- (12) Report to the responsible officer

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

b. Specific. Inspect the rifle in accordance to serviceability standards as outlined in TB ORD 587.

15. Ordnance Shop Inspections

a. Initial Inspection. Inspection procedures outlined in paragraphs 13 and 14 also apply to initial shop inspection. If the materiel received in Ordnance shops is not tagged to indicate the nature of repair, steps should be taken to determine the cause of unserviceability and the extent of repairs required.

b. Troubleshooting. Table 2 lists malfunctions, probable causes, and corrective actions. For troubleshooting information within the scope of operator and organizational maintenance refer to FM 23-15.

Table 2. Troubleshooting

Malfunction	Probable causes	Corrective action
Magazine inserts with difficulty ---	Bent or deformed magazine ----- Damage to or restricted movement to magazine catch.	Replace magazine (1, fig. 3). Replace magazine catch (6, fig. 17).
Magazine fails to hold on rifle-----	Magazine catch damaged or deformed. Magazine catch spring weak or broken.	Replace magazine catch (6, fig. 17). Replace magazine catch spring (2, fig. 17).
Short recoil-----	Gas cylinder gas ports dirty ----	Clean gas ports (fig. 13).
Failure to feed -----	Dirty or deformed magazine body Weak or broken magazine spring Worn or broken magazine catch --	Replace magazine (1, fig. 3). Replace magazine (1, fig. 3). Replace magazine catch (6, fig. 17).
Failure of slide to cock-----	Damaged sear or sear notch in slide. Broken sear spring ----- Burs or foreign residue in sear notch.	Replace slide (3C, fig. 23) or sear (10, fig. 17). Replace sear spring (8, fig. 17). Clean and remove burs. (para. 20).
Failure to fire-----	Weak spring----- Worn or broken firing pin----- Worn or broken sear spring----- Defective sear or hammer -----	Replace spring (2, fig. 23). Replace firing pin (1, fig. 28). Replace sear spring (8, fig. 17). Replace sear (10, fig. 17) or hammer (7, fig. 3).
Weak ejection -----	Worn ejector -----	Replace ejector (1, fig. 17).
Failure to eject cartridge cases ---	Dirty or clogged gas ports ----- Broken ejector ----- Weak or broken ejector lock and/or ejector lock spring.	Clean gas cylinder assembly (para. 32b(2)). Replace ejector (1, fig. 17). Replace ejector lock and/or spring (3 and 4, fig. 17).

Table 2. Troubleshooting—Continued.

Malfunction	Probable causes	Corrective action
Failure to extract cartridge cases	Damaged or broken extractor claw. Broken or missing extractor spring.	Replace extractor (5, fig. 28). Replace extractor spring (6, fig. 28).
Failure to pull off with change lever set at F or A. Muzzle depressed.	Sear spring not correctly positioned.	Reposition sear spring (8, fig. 17).

c. In-Process Inspection. Detailed instructions for in-process inspection of the materiel are contained in the repair chapter together with applicable repair instructions.

d. Final Inspection. Detailed instructions for final inspection are contained in chapter 6.

CHAPTER 4

GENERAL MAINTENANCE

16. General

This chapter provides the necessary instructions on the general maintenance procedures to follow. The following methods and procedures given in this chapter are to be carefully observed during repair operations. Operator and organizational maintenance instructions are contained in FM 23-15. This chapter includes the disassembly and assembly procedures, replacement of parts, use of tools, cleaning, finished surfaces, removal of burrs, and lubrication.

17. General Repair Methods

a. Disassembly and Assembly Procedures.

- (1) In disassembling a unit, remove the major subassemblies and assemblies whenever possible. Subassemblies may be disassembled, as necessary, into individual parts.
- (2) During assembly, subassemblies should be assembled first, then installed to form a complete unit. Lubricate sliding surfaces before assembling.
- (3) Complete disassembly of a unit is not always necessary in order to make a required repair or replacement. Good judgement should be exercised to keep disassembly and assembly operations to a minimum.

b. Replacement of Parts.

- (1) Parts or assemblies that cannot be repaired or reclaimed to the standards set forth, will be replaced. Non-repairable assemblies may be disassembled and the serviceable parts returned to stock.
- (2) When assembling a group or assembly replace worn or damaged pins and screws.
- (3) All springs will be replaced if broken, kinked, cracked, or have weak tension.

- (4) If a required new part is not available, reconditioning of the old part is permitted. Parts should be inspected carefully after reconditioning to determine their serviceability.

c. Use of Tools.

- (1) 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.
- (2) Special tools are provided for the maintenance of the materiel and are listed in TM 9-1005-208-35P. These tools will be used only for the purpose for which they are intended.
- (3) Keep tools clean and work with clean parts. Normal rules of good housekeeping must be observed.

18. Cleaning

a. As assemblies are removed and disassembled, the metal parts will be cleaned thoroughly of all grease, oil, and dirt using dry cleaning solvent (SD). Parts will be wiped dry with clean cloth, then coated with a lubricant as prescribed in paragraph 21, to prevent rusting.

b. Remove rust with a cloth moistened with solvent cleaning compound (PD 126). If this does not suffice, use crocus cloth or fine abrasive cloth. Make certain not to scratch or alter finished surfaces. Remove all dirt and abrasives, re-oil surfaces before assembling parts.

c. The bore will be cleaned thoroughly with cleaning brush 5564174 (fig. 5), saturated with solvent cleaning compound (PD 126), then swabbed with a flannel cleaning patch. Make certain no traces of burned powder or foreign substances are left in the bore. Apply a light coat of general purpose lubricating oil (PL special).

d. Clean chamber with cleaning brush 6528362 (fig. 5) using solvent cleaning

compound (PD 126). Wipe dry with a clean cloth, then apply a light coat of general purpose lubricating oil (PL special).

e. Clean bore of gas cylinder tube using M6 cleaning brush 6108828 saturated with solvent cleaning compound (PD 126). Wipe dry with clean cloth then apply a light coat of general purpose lubricating oil (PL special).

f. Clean gas cylinder using reamer assembly 7268211 in accordance with paragraph 32.b.(2)(a).

g. Clean fore end and stock assembly of grease, oil, and dirt, using a clean cloth.

19. Finished Surfaces

All treated surfaces will be refinished to match the appearance of new parts.

20. Removal of Burs from Threads, Screwheads, and Working Surfaces

a. During the entire life of the weapon, polishing and stoning are necessary to relieve friction and to remove burs set up by firing. Burs on screws, threads, and like surfaces should be removed with a fine file. Burs or rough edges on working surfaces should be removed with a fine sharpening stone.

Caution: Care will be observed to stone or file evenly and lightly and not to remove more metal than necessary to maintain correct contour of the surfaces. Parts

or assemblies will never be altered in any way as to affect functioning or interchangeability of parts.

21. Lubrication

a. Make certain all metal parts are cleaned and dried thoroughly in accordance with instructions prescribed in paragraph 18.

b. All metal parts will be lubricated by applying a light coat of general purpose lubricating oil (PL special). Lubricating oil is listed in TM 9-1005-208-12P.

22. Function Firing

a. Following repair, each rifle will be function fired, if facilities are available to direct or general support maintenance personnel.

<i>Rounds</i>	<i>Gas Port</i>	<i>Change Lever Position</i>
20	Medium	Full automatic
20	Medium	Reduced automatic

If rifles do not function satisfactorily, additional rounds are authorized. Rifles that fail to meet the test are to be corrected by replacement of defective parts or by performing such repair as required.

b. All rifles are to be cleaned as soon as possible after all firing tests. Clean in accordance with instructions listed in paragraph 18. Special care should be taken to insure the bolt faces, pistons, breech end of receiver and parts subjected to powder residue are thoroughly cleaned, using solvent cleaning compound (PD 126).

CHAPTER 5

REPAIR

Section I. MAGAZINE

23. Removal

Remove magazine as shown in figure 7.

24. Disassembly

Disassemble magazine in numerical order as shown in figure 8.

25. Cleaning

Clean magazine components in accordance with instructions in paragraph 18.

26. Inspection (fig. 9) and Repair

a. Inspect the magazine tube for dents, damaged or burred lips and worn or burred catch lug.

b. Inspect magazine base for looseness on tube.

c. Inspect follower, make certain it slides smoothly up and down tube when depressed and released.

d. Inspect magazine spring for tension or set.

e. If any of the components of the magazine (1, fig. 3) are defective replace magazine.

27. Assembly

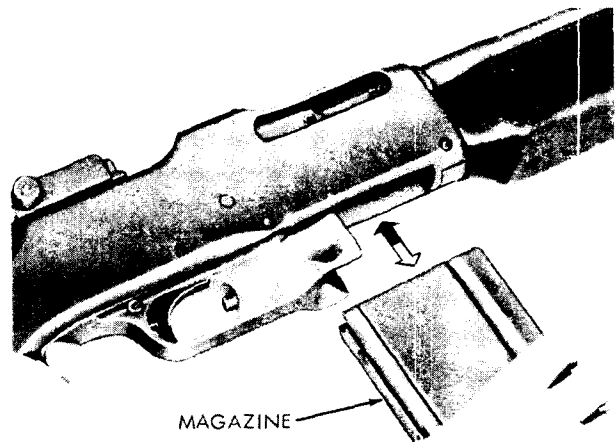
Assemble magazine in reverse order of numerical sequence as shown in figure 8.

28. Installation

Install magazine as shown in figure 7.



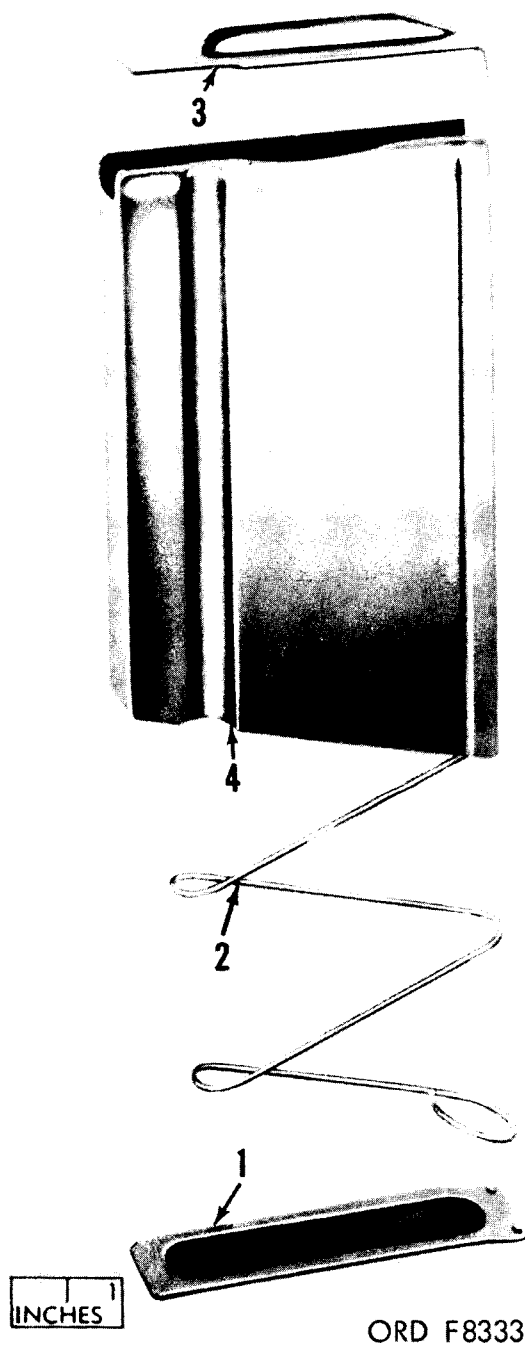
A - DEPRESS MAGAZINE RELEASE



B - REMOVE/INSTALL MAGAZINE

ORD F8306

Figure 7. Removal/install magazine.



- 1-Base 6019631
- 2-Spring 5509077
- 3-Follower 6019641
- 4-Tube 5509078

Figure 8. Magazine-exploded view.

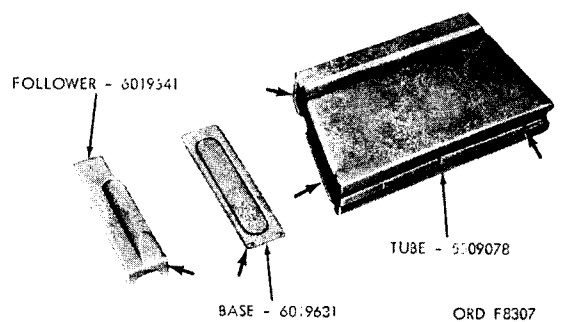


Figure 9. Magazine-inspection points.

Section II. GAS CYLINDER AND FORE END GROUP

29. Removal

Remove gas cylinder and fore end group as shown in figure 10.

30. Disassembly

a. Disassembly the gas cylinder and fore end group in numerical sequence shown in figure 11.

b. If gas cylinder body is frozen in the gas cylinder tube, remove gas cylinder body using combination wrench 7266450 (fig. 5).

31. Cleaning

Refer to paragraph 18 for cleaning instructions.

32. Inspection (fig. 12) and Repair (fig. 11)

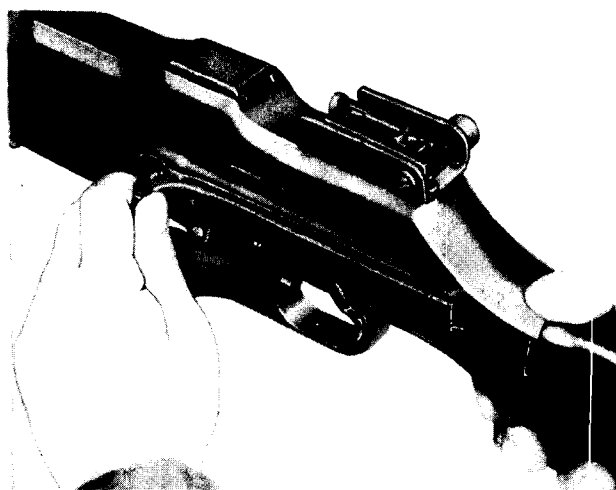
a. *Fore End Shield.* Inspect for bent or damaged fore end shield. Straighten shield, replace if damaged beyond repair (fig. 11).

b. *Gas Cylinder Assemblies.*

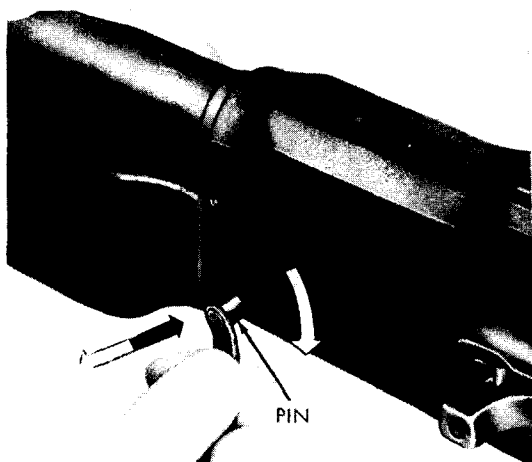
(1) Inspect gas ports for carbon and foreign matter and cylinder



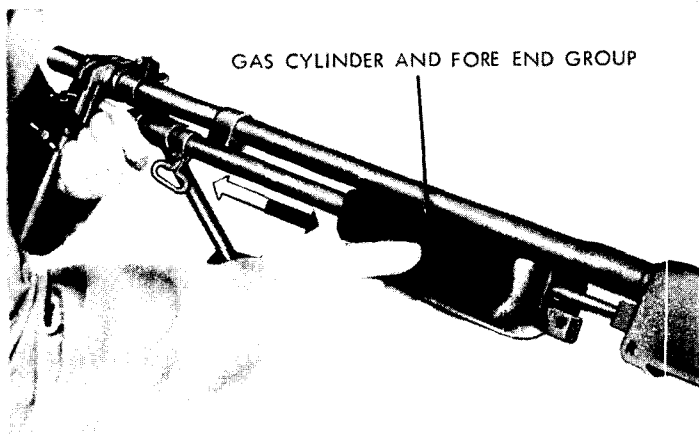
A - COCKING THE RIFLE.



B - RETURN OPERATING HANDLE TO FORWARD POSITION.



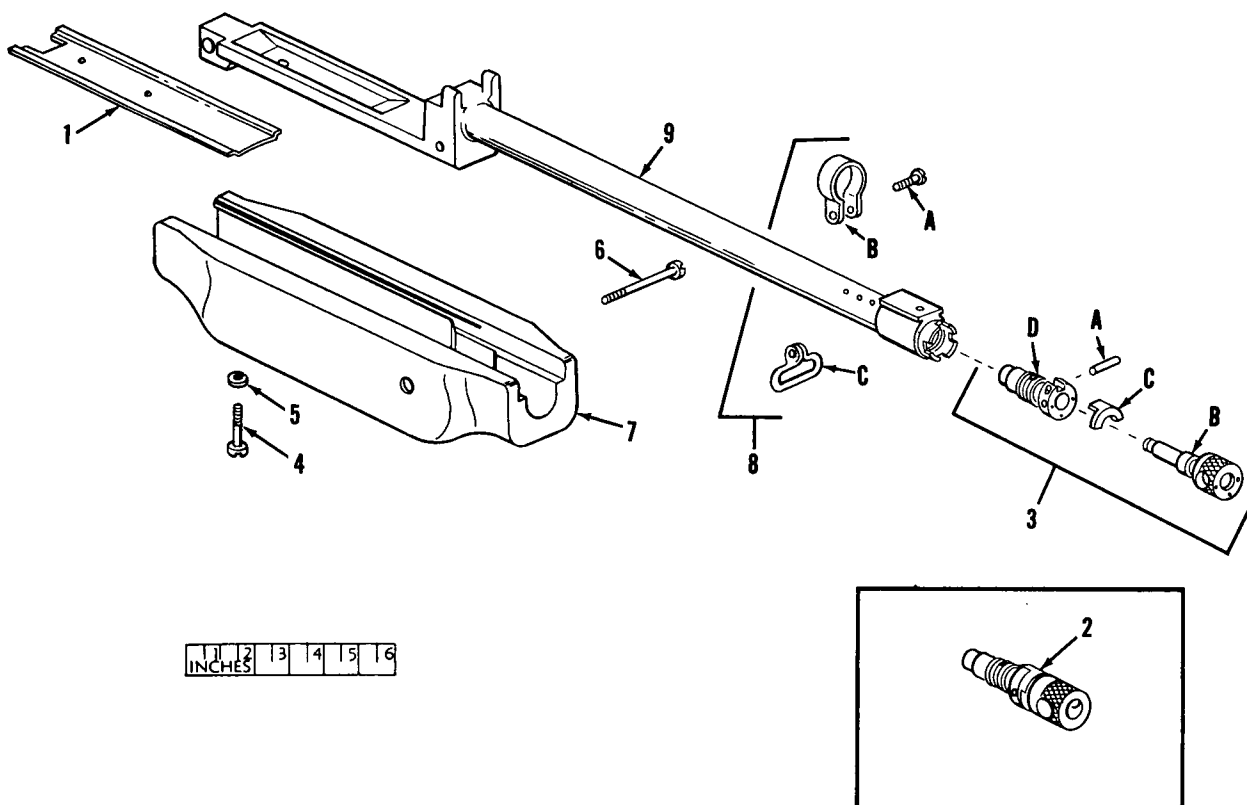
C - REMOVE/INSTALL GAS CYLINDER TUBE RETAINING PIN.



D - REMOVE/INSTALL GAS CYLINDER AND FORE END GROUP.

ORD F8308

Figure 10. Remove/install gas cylinder and fore end group.



ORD F7048

- 1-Fore end shield 7267379
 2-Gas cylinder assembly 7267819
 or
 3-Gas cylinder assembly 7162349
 A-Spring pin 7266091
 B-Regulator 7266092
 C-Key 7266094
 D-Body 7266093
 4-Machine screw 5152754

- 5-Washer 7313164
 6-Machine screw 5022249
 7-Fore end 5564206
 8-Swivel assembly 5564073
 A-Machine screw 5022244
 B-Loop clamp 5022213
 C-Bracket swivel 5022210
 9-Tube 5509079

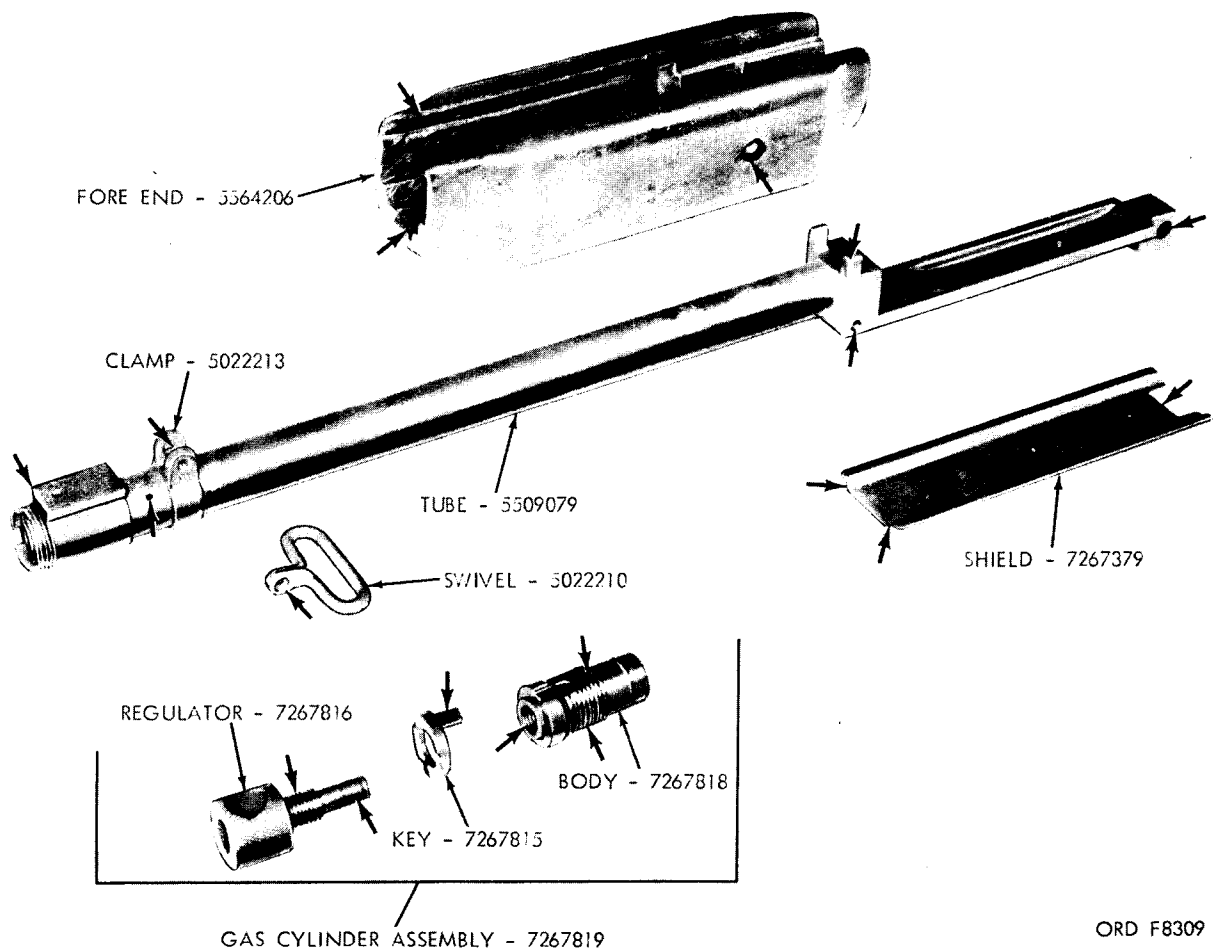
Figure 11. Gas cylinder and fore end group—exploded view.

for crossed threads, wear and burs.

- (2) Clean carbon from gas cylinder assembly as prescribed in (a) through (e) below.
- (a) Insert the large recess cutter of gas cylinder reamer assembly (A, fig. 13) into large recess of gas cylinder body and rotate the reamer assembly clockwise.
- (b) Insert the long recess cutter portion of the reamer into the gas cylinder regulator recess of the gas cylinder body (B, fig. 13) and rotate the reamer assembly clockwise.

Caution: Always insert the tool through the large unthreaded opening to avoid damage to the threads within the gas cylinder body.

- (c) Insert the short recess cutter of the reamer assembly into the recess of the gas cylinder regulator (C, fig. 13) and rotate the reamer clockwise.
- (d) Insert the drift portion of the reamer assembly into gas port holes of the gas cylinder regulator (D, fig. 13).
- (e) Clean all parts with a clean cloth saturated with solvent cleaning



ORD F8309

Figure 12. Gas cylinder and fore end group—inspection points.

compound (PD 126). Inspect gas ports; make certain they are clean. Dry gas cylinder body and regulator but do not oil the inside of the gas cylinder body or outside of gas cylinder regulator.

- (f) Inspect gas cylinder body using the plain cylindrical plug gage 5077204 as shown in figure 14. Wipe inside of gas cylinder body and outside surfaces of gage with a clean cloth, then insert gage (fig. 14). Replace gas cylinder assembly if gage enters the cylinder body.

Note: Only a light pressure should be applied on gage.

- (g) Inspect the gas cylinder regulator for fit in gas cylinder regulator and body for burs and

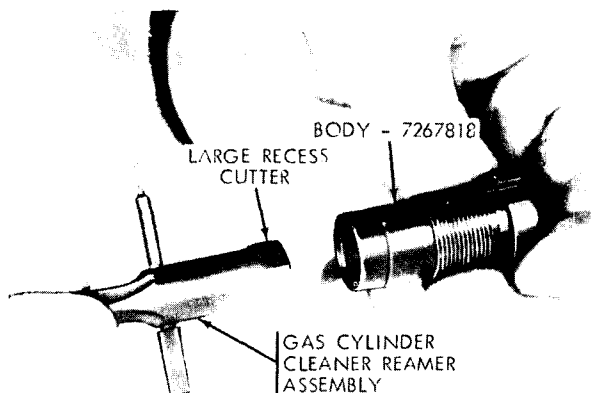
stripped threads. Inspect key for wear and damage and spring pin for being bent or distorted.

- (h) Replace gas cylinder assembly (2 or 3, fig. 11) if gas cylinder regulator and body contain stripped threads or if key is worn or damaged.

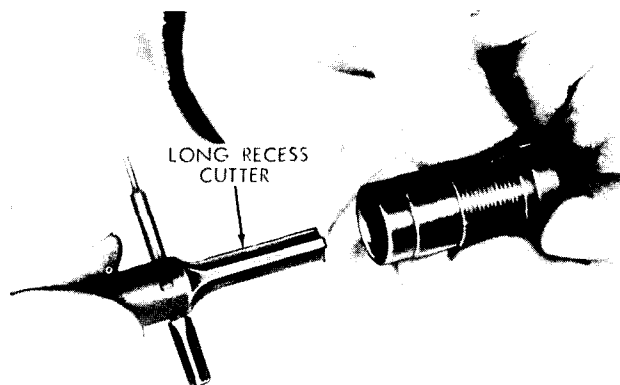
- (i) Replace gas cylinder lock body spring pin (3A, fig. 11) if bent or damaged.

c. Fore End.

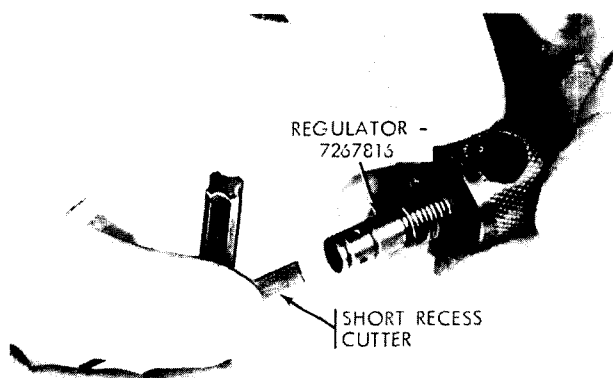
- (1) Inspect the fore end for loose escutcheons and cracks. Inspect escutcheons for worn or stripped threads. If escutcheon becomes loose in fore end and will not seat within wood, remove escutcheon and coat bottom and sides with plastic wood. Reseat escutcheon



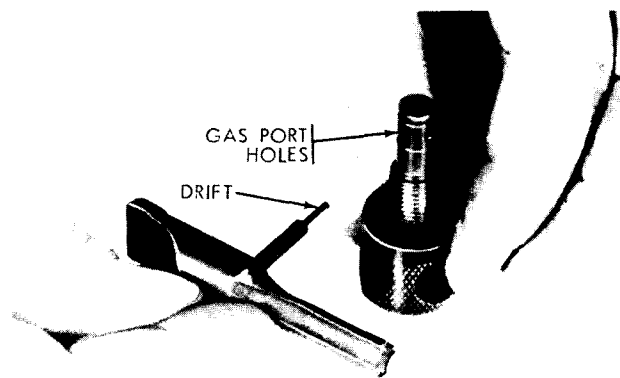
A - CLEANING GAS CYLINDER BODY USING LARGE RECESS CUTTER.



B - CLEANING GAS CYLINDER BODY USING LONG RECESS CUTTER.



C - CLEANING GAS CYLINDER REGULATOR USING SHORT RECESS CUTTER.



D - CLEANING GAS PORT HOLES USING DRIFT PORTION OF REAMER ASSEMBLY.

ORD F8310

Figure 13. Cleaning the gas cylinder assembly.

and allow to harden. If plastic wood is not available, apply glue.

(2) Replace fore end if escutcheons contain stripped threads.

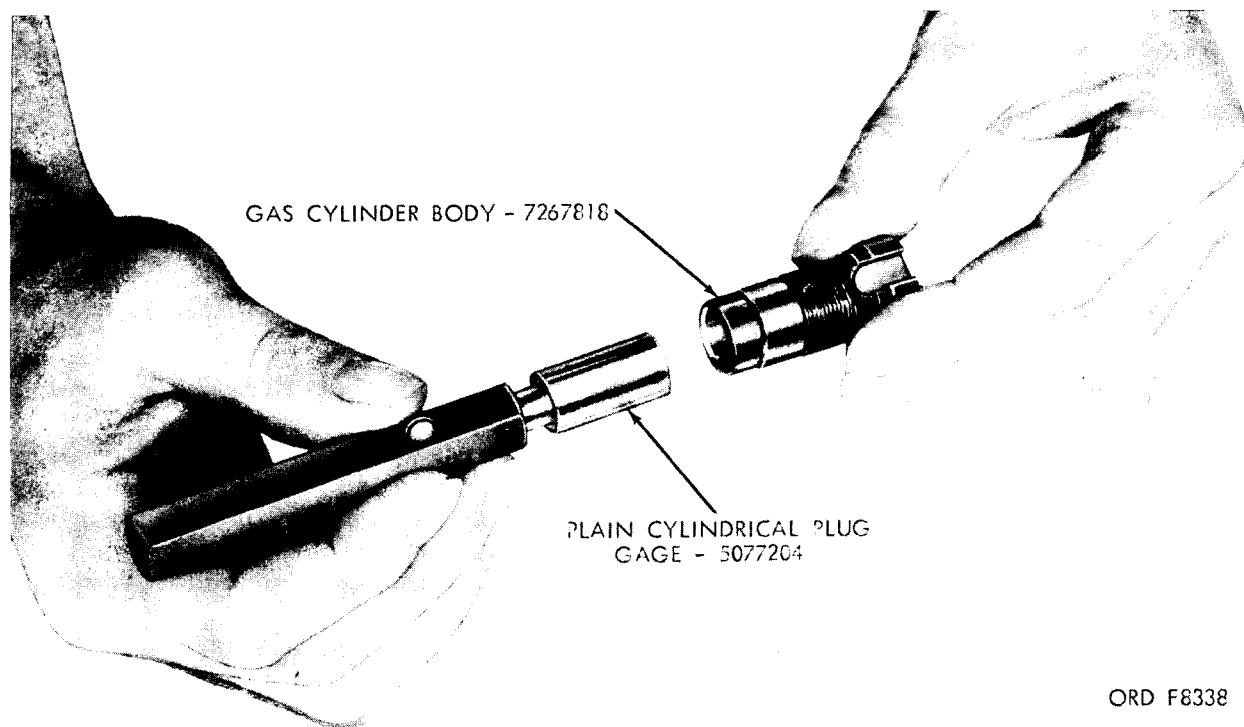
(3) Cracks in fore end may be repaired by using reinforcing screws. If slide gooves in fore end show superficial cracks, the area, if not too large, may be smoothed out with a sharp blade. Cracks located in the areas where the strength of the fore end will not be affected can be repaired as indicated in (a) through (e), below:

- (a) Place fore end in a vise or under pressure so that the cracks will be drawn together.
- (b) Drill holes in fore end using a no. 55 (0.052 inch) drill.
- (c) Install reinforcing screws by gripping in the chuck of a hand drill, then screw into wood.
- (d) Cut off protruding portion of screw and file flush with wood; make certain no rough edges protrude.
- (e) Inspect for general appearance. Determine that the strength of fore end has not been affected.

Note: If reinforcing screws are not available, through normal channels of supply, they may be fabricated as indicated in figure 15.

- (4) In dry climates the wood of the fore end is apt to dry out and shrink.

Occasional applications of raw linseed oil will help to maintain the wood condition. Apply oil to wood only and allow to remain a few hours to absorb within the wood.



ORD F8338

Figure 14. Gaging gas cylinder body.

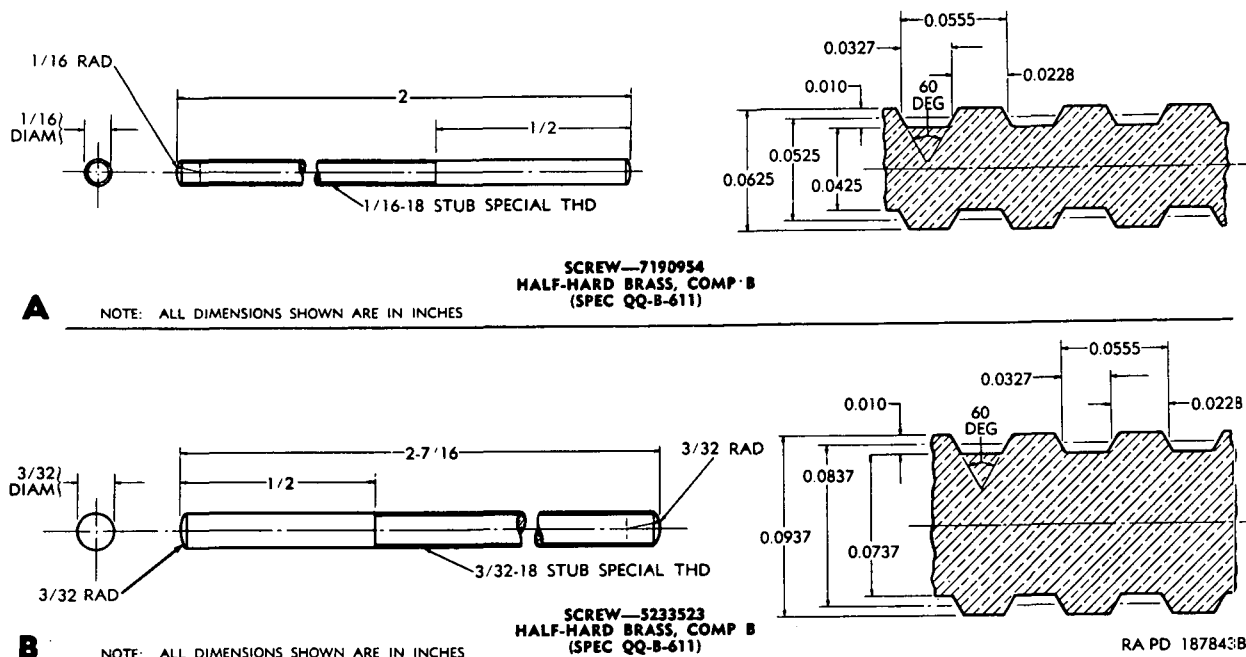


Figure 15. Reinforcing screws for fore end.

Wipe dry and polish with a clean cloth. Make certain not to get linseed oil within crevices of mechanism, as it will cause a gumming when dry.

d. Front Swivel Assembly.

- (1) Inspect bracket swivel machine screw for worn or damaged threads.
- (2) Inspect for cracked or bent swivel.
- (3) Inspect for worn or broken swivel loop clamp.
- (4) Replace sling swivel machine screw (8A, fig. 11) if threads are worn or damaged.
- (5) Replace cracked or bent bracket swivel (8C, fig. 11).
- (6) Replace worn or broken front sling swivel loop clamp (8B, fig. 11).

e. Gas Cylinder Tube.

- (1) If the gas cylinder tube is out-of-line with receiver, it may be caused by a distorted tube or the barrel is improperly assembled to the receiver. To correct, straighten tube or reposition barrel to receiver. Check functioning of slide and piston within tube after repair.

- (2) Remove rust from gas cylinder tube using crocus cloth and solvent cleaning compound (PD 126). Use a clean cloth to wipe dry then apply a light coat of lubricating oil. Clean the inside of tube using M1 cleaning rod and patches. Replace gas cylinder tube if bent or distorted (9, fig. 11).
- (3) In fitting a new gas cylinder tube to receiver, the pin holes in the tang of the tube and receiver may not be concentric. In this case, stone the rear tank of the gas cylinder tube using a fine stone. Make certain the tube is properly aligned before attempting to fit.

33. Assembly

Assemble the gas cylinder and fore end group in reverse order of numerical sequence as shown in figure 11.

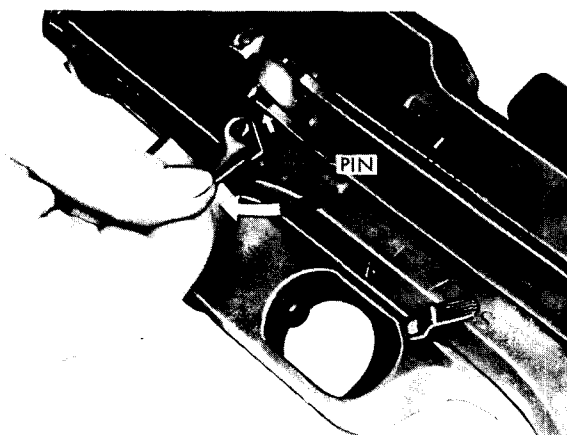
34. Installation

Install gas cylinder and fore end group as shown in figure 10.

Section III. TRIGGER GUARD ASSEMBLY

35. Removal

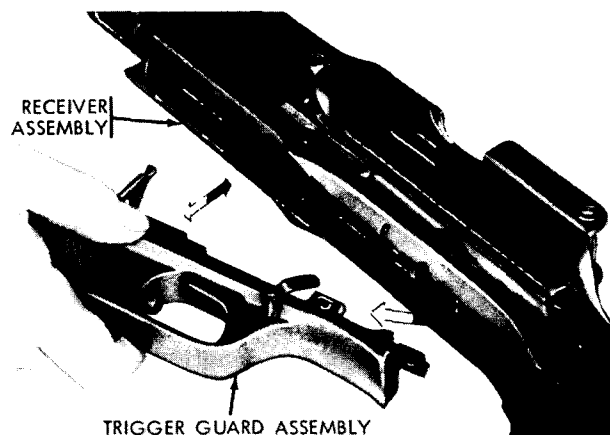
Remove the trigger guard assembly as shown in figure 16.



A - REMOVE/INSTALL TRIGGER GUARD RETAINING PIN.

36. Disassembly

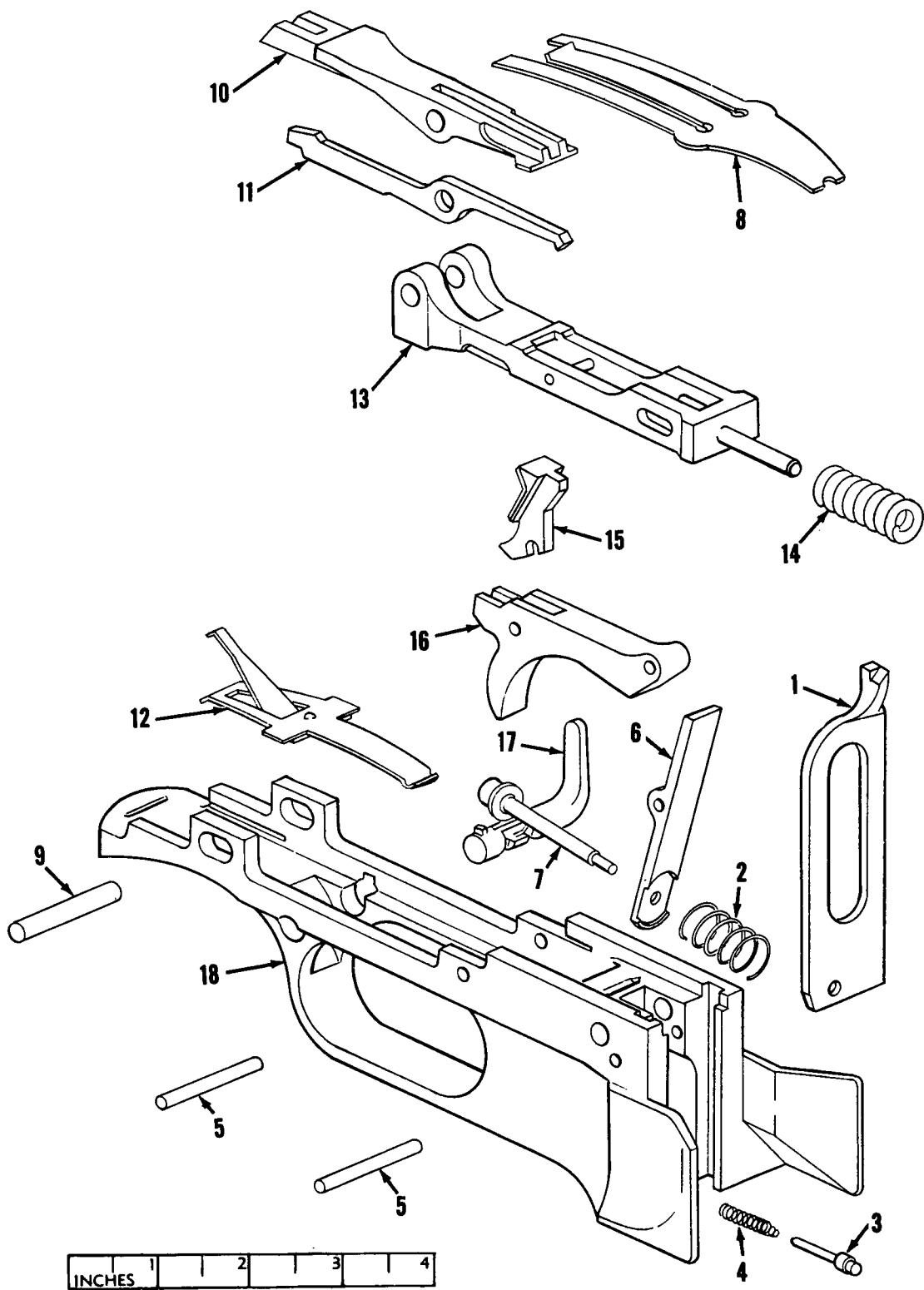
Disassemble the trigger guard assembly as shown in figure 17.



B - REMOVE/INSTALL TRIGGER GUARD ASSEMBLY.

ORD F8311

Figure 16. Remove/install trigger guard assembly.



ORD F7049

Figure 17. Trigger guard assembly—exploded view.

1—Small arms cartridge ejector
6019639
2—Spring 5153130
3—Lock 5022225
4—Spring 5153132
5—Headless straight pin 5022238
6—Magazine catch 5022216
7—Magazine release 5022242
8—Sear spring 6019662
9—Headless straight pin 5022237

10—Sear 5564299
11—Stop lever 6147487
12—Spring 6147490
13—Carrier assembly 6147499
14—Compression helical spring
6153133
15—Connector 6019636
16—Trigger 6019684
17—Lever 5509071
18—Body 6535470

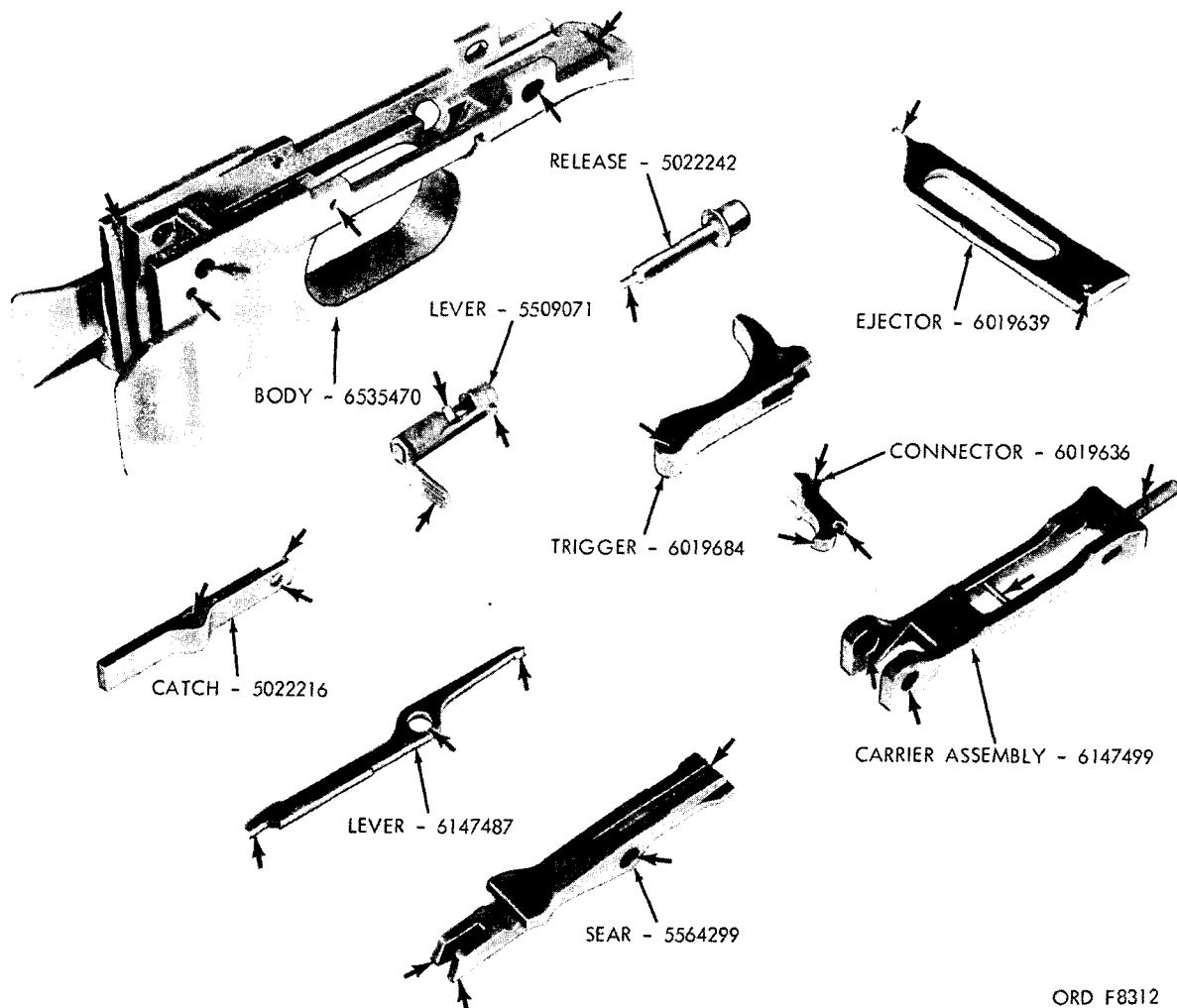
Figure 17—Continued.

37. Cleaning

Refer to paragraph 18 for cleaning instructions.

38. Inspection (fig. 18) and Repair (fig. 17)

Note: The key numbers shown below in parentheses refer to figure 17 except where otherwise indicated.



ORD F8312

Figure 18. Trigger guard assembly—inspection points.

a. *General.* Inspect all parts for damage and wear, burs, rust or foreign matter in recesses, that might cause malfunction. Inspect helical compression springs for cracks or set. Inspect headless straight pins for wear or damage. Remove burs from parts and dirt and foreign matter in recesses. Replace springs if cracked or set and pins if worn or bent.

b. *Ejector.* Inspect nose of ejector for deformation, wear and burs. It should not be bent or worn. Check for fit within trigger guard body. It must fit without perceptible looseness and sufficient freedom to permit normal removal. Replace ejector (1) if nose is worn or bent.

c. *Ejector Lock.* Inspect ejector lock (3) for free movement in well of trigger guard housing. Replace if bent or damaged.

d. *Magazine Catch.* Inspect nose of magazine catch for wear and burs (edge should be sharp). Catch must securely hold a loaded magazine. Inspect for wear around pin holes. Replace magazine catch (6) if worn or damaged.

e. *Magazine Release.* Inspect magazine release (7) for free movement within trigger guard body; must not be worn and shank must be straight. Check for cracked and worn nose. Replace, if nose is cracked or worn or if shank is bent or damaged.

f. *Sear Spring.*

- (1) Determine if sear spring (8) is of latest design. Modify sear springs, of early design, that do not have the 3/32 inch notch at rear portion (fig. 19) to conform to latest design. Replace sear spring if broken or damaged.

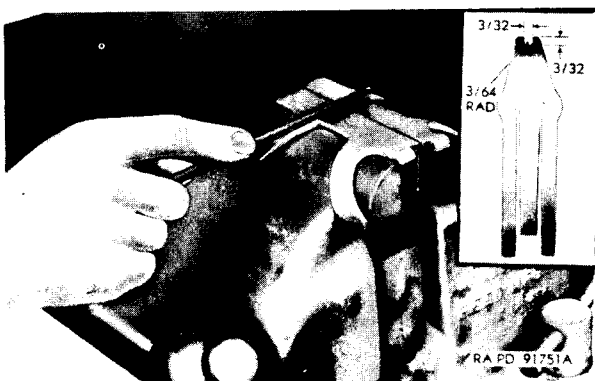


Figure 19. Filing notch in sear spring.

- (2) Inspect sear spring for functioning with sear and connector; looseness in retaining slots in trigger guard body and for deformation, cracks and wear. Make certain the two side prongs bear evenly on shoulders and on the forward portion of sear. The center prong should be below forward end of stop lever and bear on forward ramp of connector. Prongs are even when at rest and curved downward. Forward end of springs should be seated in its lateral notch in trigger guard body.

g. *Sear.* Inspect sear for deformation and wear on forward lower camming surface contacting connector and rear upper camming surface contacting sear release. The rear beveling camming surface must be perfectly smooth. Inspect sear notch faces top and rear for wear. Sear notch should be smooth and not contain a sharp or wire edge. Use a stone to smooth nose of sear notch, if burred. Exercise care to maintain a retentive angle and stone to a polish. If too much metal is removed from top face of sear, the face becomes too low to retain the slide. This will cause interference of rear end of sear with the slide, holding sear out of engagement. Test sear retentive action after stoning, and if found questionable, replace sear (10). Stone slide same as sear.

h. *Sear Release Stop Lever.* Inspect sear release stop lever for wear and burs on forward lower surface where it contacts the connector and on the rear surface where sear release strikes. Sear nose may become expanded due to action of sear release. Replace sear release stop lever (11), if worn as to affect the functioning of the rifle.

i. *Change and Stop Lever Spring.* Inspect change and stop lever spring for fracture or prong. Inspect spring for loose rivet and deformation. Inspect for functioning with change lever (should bear firmly in notches) and sear release stop lever. Replace spring (12) if cracked, weak or damaged. Tighten rivet, if loose.

j. *Sear Carrier Assembly.* Inspect camming surfaces on sear carrier assembly (13) for wear and burs. Inspect for

loose, cracked and worn connector stop (riveted on right end). Tighten connector stop in sear carrier. Replace, if worn or damaged.

k. Trigger Connector. Inspect top bearing surface of trigger connector where it contacts sear and sear release stop lever. This is a critical surface and should not be worn or burred as it would affect function of the sear and stop lever. Inspect the rear toe of connector where it contacts the tongue in change lever aperture and front sloping surface (sear carrier ramp) for wear, burs and rough edges. Make certain operating and camming surfaces are not worn as to affect functioning. Remove rough edges from rear toe of connector. Replace trigger connector (15), if camming surfaces are worn so as to affect function of connector.

l. Trigger. Inspect trigger for full action on pin with respect to trigger guard. Make certain connector pin is riveted securely in place. Rear projections on the heel of trigger must be free of wear that would affect the operation of the change lever. Top rear corner should be sharp, not beveled, at the point where it enters the notch in the change lever. Inspect heel and tip for sufficient clearance with base of guard for full retraction. Remove rough edges on trigger. Replace trigger (16) if rear projections are worn as to affect the operations of the trigger.

m. Change Lever. Inspect change lever for functioning with connector and trigger; for deformation and for free movement in

trigger guard body (should fit snug). Make certain lever functions freely and remains in selected positions. Replace change lever (17) if worn or does not remain in selected positions.

n. Trigger Guard Body. Inspect trigger guard body for deformation, wear, and burred spring retaining and receiver retention groove (rear portion). Trigger guard body should assemble freely to the receiver without apparent looseness or side play.

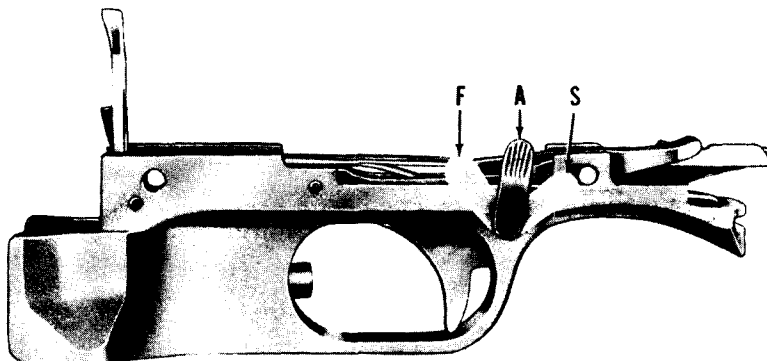
39. Assembly

Assemble the trigger guard assembly in reverse order of numerical sequence as shown in figure 17.

40. Functional Check

a. Inspect trigger guard assembly for looseness, functioning, and co-functioning of its component parts. Make certain the trigger guard assembly can be installed securely to receiver without apparent looseness or sideplay.

b. Check function of trigger connector, and sear spring with trigger guard assembly held horizontal, tipped forward, and tipped back. If sear spring does not bear properly on forward shoulders of sear and center prong on connector, the connector will not function properly when the trigger guard is tipped. Check functioning of trigger, sear, and stop lever, when change lever is set at A position (normal cyclic



ORD F 8334

Figure 20. Selective positions of change lever on assembled trigger guard assembly.

rate), F position (slow cyclic rate) and S position (safe) as indicated in figure 20.

- (1) *Change lever set at A (vertical position).* When change lever is set at A position and trigger is retracted, the connector raises the forward end of the sear and sear release stop lever together and holds them up as long as the trigger is held fully retracted. The rear end of the sear is depressed and held from engagement with sear notch in slide, while the rear end of sear release stop lever is also depressed, preventing the sear release from striking camming surface on rear end of sear. When trigger is released both the sear and sear release stop lever should return to their normal positions.
- (2) *Change lever set at F (forward position).* When change lever is set at F position and trigger partially retracted, the connector raises the forward end of the sear and sear release stop lever together. As the trigger is further retracted, the connector, still rising is cammed from under front of sear by camming surface on sear carrier and continues to raise the forward end of sear release stop lever, and holds it in raised position as long as the trigger is fully retracted. Therefore, the sear is free to function when acted upon by the sear release, while the rear end of the sear release stop lever is depressed to a point where it will not block the action of the sear release upon the camming surface of rear end of sear. This action produces the slow cyclic rate of fire.
- (3) *Change lever set at S (rear position).* When the change lever is set at S position, the trigger is blocked by the change lever and prevented from rising, lifting the connector, and disengaging the sear.

41. Installation

Install trigger guard assembly as shown in figure 16.

42. Checking Trigger Pull

a. Check trigger pull of the rifle as indicated in figure 21. The force exerted to release slide is not less than 6 pounds, nor more than 10 pounds. If the pull is rough or excessive creep is present when trigger is manually functioned, inspect sear or sear notch for wear or burs and/or interference between trigger and housing.

Note: The word "creep" is defined as any perceptible movement in the trigger pull between the time the slack is taken up and the slide is released, with pressure applied at a uniform rate of increase over a period of not less than 10 seconds.

b. In testing trigger pull of rifles, the inspector will use weights totaling 6 pounds and weights totaling 10 pounds.

c. Make certain the change lever is set at the A or F position and the rifle is cocked. Rest the weight on the floor and hook the trigger weight rod onto the trigger so that the pressure is applied about one-quarter of an inch from the lower end of the trigger (fig. 21). Check to insure the rod contacts the trigger only and does not rub against the side of trigger guard body. Carefully raise the weight from the floor. If the 6-pound weight pulls or the 10-pound weight fails to pull the trigger to release the slide, correct as indicated in paragraph 43.

43. Correcting Trigger Pull

a. *Light trigger pull.* Light trigger pull is caused by foreign matter or burs in sear notch of slide or nose of sear. Burs or foreign matter prevent nose of sear from seating fully in sear notch in slide. To correct, remove the foreign matter stoning the burred surfaces as prescribed in paragraph 20. Replace worn or damaged parts. A light pull is also due to a weak or broken sear spring that does not seat the sear fully in the notch within the slide. This can be corrected by replacement of sear spring.

b. *Excessive trigger pull.* Excessive trigger pull is caused by binding of components, foreign matter in trigger guard body or burs on trigger, connector, sear pin, or sear. Correct these conditions by removing foreign matter and stoning the burred surfaces.

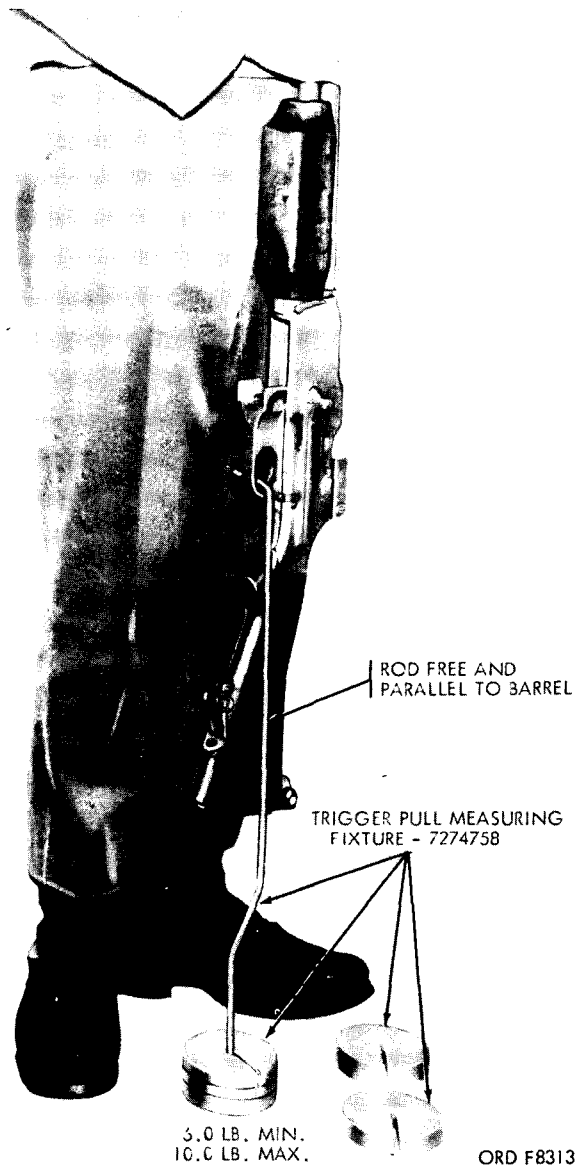


Figure 21. Checking trigger pull.

Section IV. SLIDE AND PISTON GROUP

44. Removal

Remove the slide and piston group as shown in figure 22.

45. Disassembly

Disassemble the slide and piston group in numerical sequence as shown in figure 23.

46. Cleaning

Refer to paragraph 18 for cleaning instructions.

47. Inspection (fig. 24) and Repair (fig. 23)

a. General. Inspect free action of gas piston and slide in conjunction to gas cylinder tube and receiver. Piston and slide

should move freely in gas cylinder tube and receiver when rifle is tilted upward and downward. Inspect piston retaining spring pin for wear or damage. Replace spring pin, if damaged.

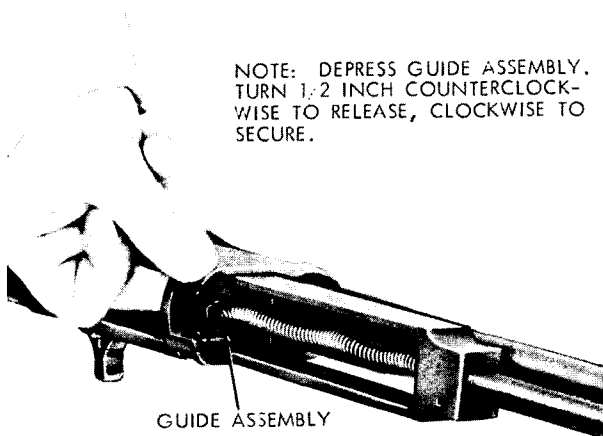
b. Slide. Inspect slide for deformation of side rails by pinching or springing, which could cause binding with operating mechanism or receiver, badly dented rear end (indicating forzen buffer), and worn hammer pin hole. Side rails that are bent or deformed can be spread or sprung back into shape by using wooden wedges and clamping in vise with copper jaws. Check slide after repair for free movement within

tube and receiver. Replace slide assembly, if worn or damaged beyond repair.

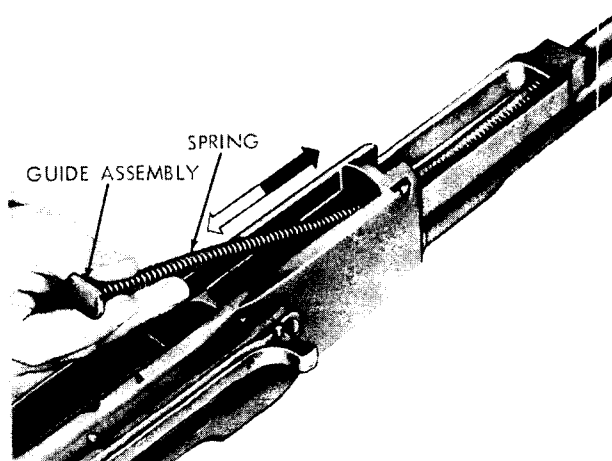
c. Gas Piston Assemblies.

Note: Gas piston assemblies of early manufacture (fig. 25) contain gas piston plugs which screw into the muzzle end of piston and a gas piston bushing located in the middle portion of gas piston body. Present manufactured gas piston assemblies (fig. 25) contain threaded gas pistons which screw into the muzzle end of gas piston assembly body and are secured by a spring pin.

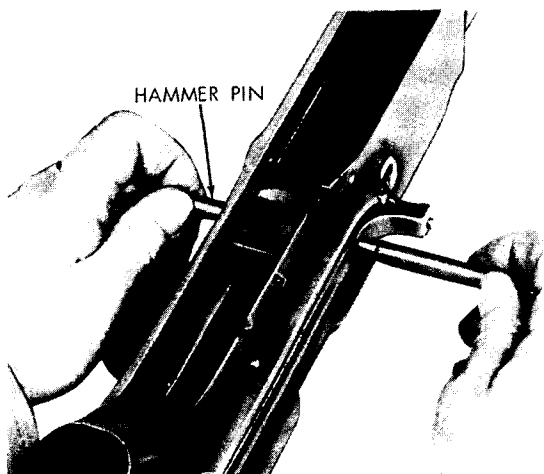
- (1) **General.** Inspect piston assembly for deformation, wear and burrs on head of piston and guide rings. Inspect body (fig. 25) (early manufacture) for missing or fractured bushing. If missing or damaged,



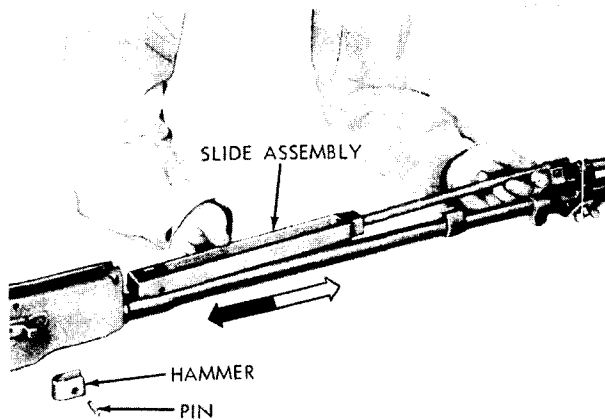
A - RELEASE/SECURE GUIDE ASSEMBLY.



B - REMOVE/INSTALL GUIDE ASSEMBLY AND SLIDE AND PISTON SPRING.



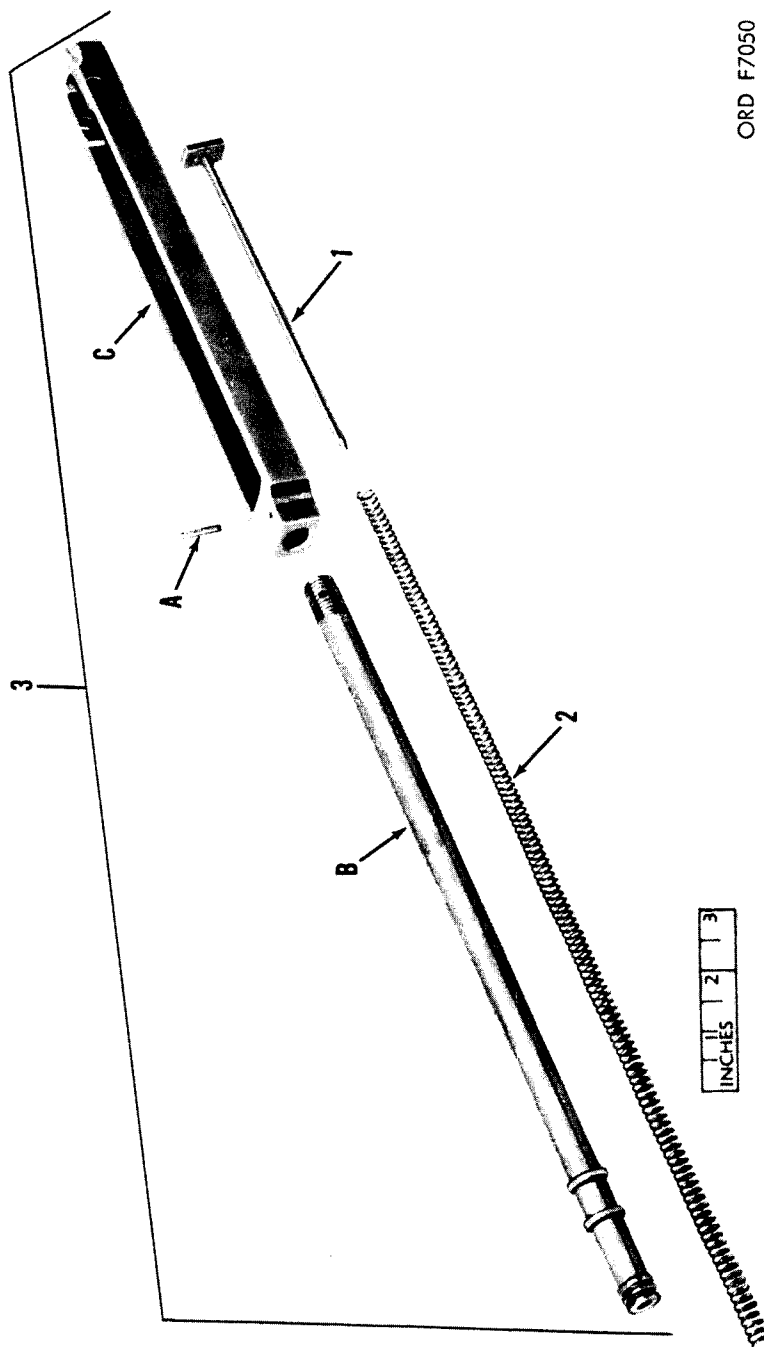
C - REMOVE/INSTALL HAMMER PIN.



D - REMOVE/INSTALL SLIDE ASSEMBLY.

ORD F8314

Figure 22. Remove/install slide and piston group.



A-Spring pin 586082
 B-Gas piston assembly 7313467
 C-Slide 5509076

1-Recoil guide assembly 6019677
 2-Helical compression spring 5153128
 3-Slide assembly 7313513

Figure 23. Slide and piston group-exploded view.

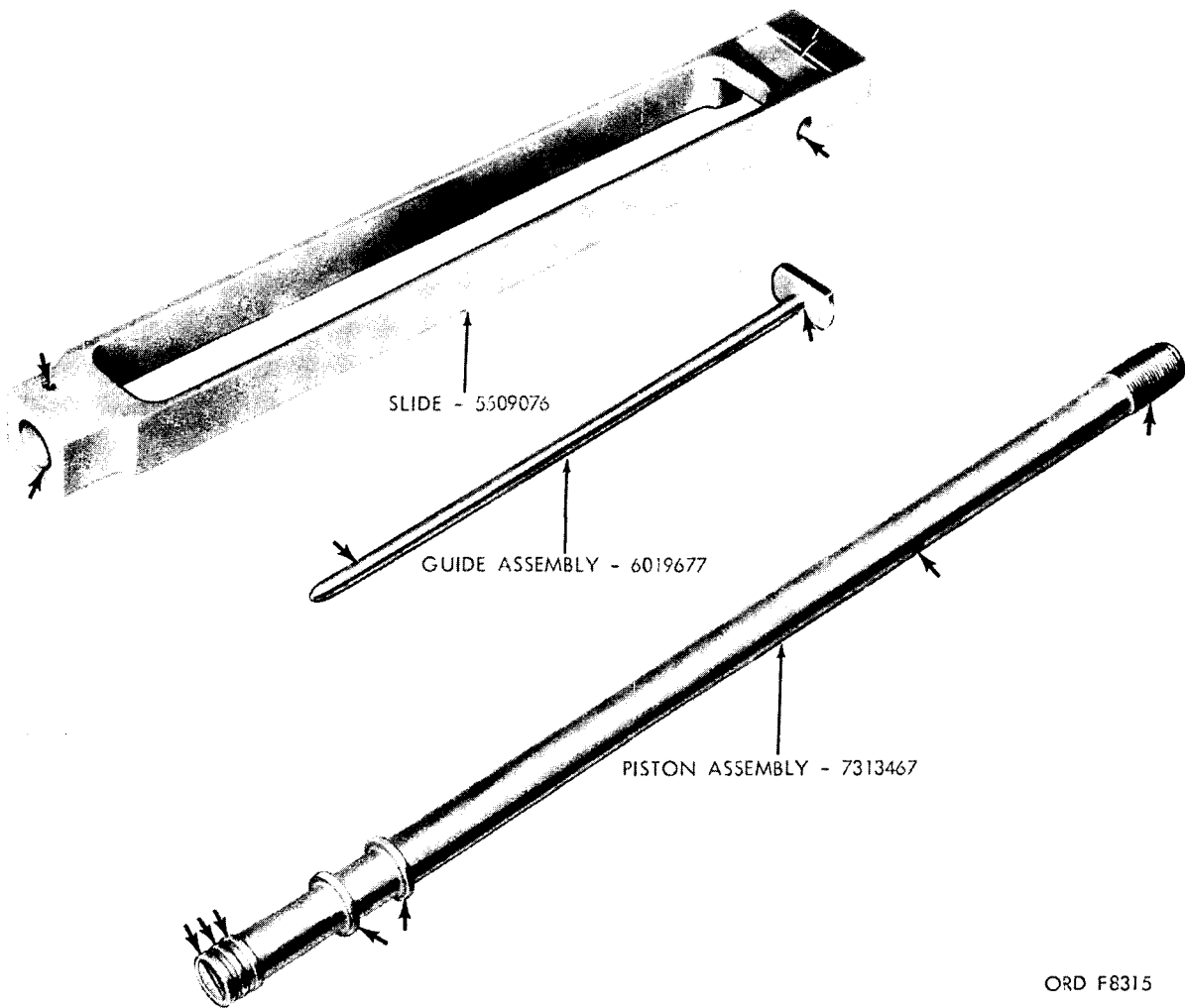


Figure 24. Slide and piston group—inspection points.

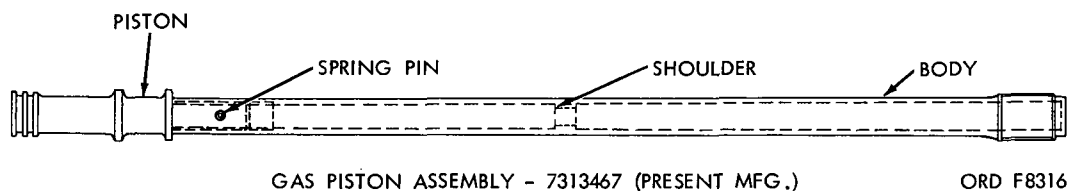
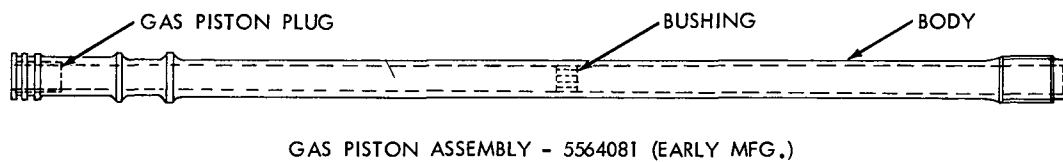


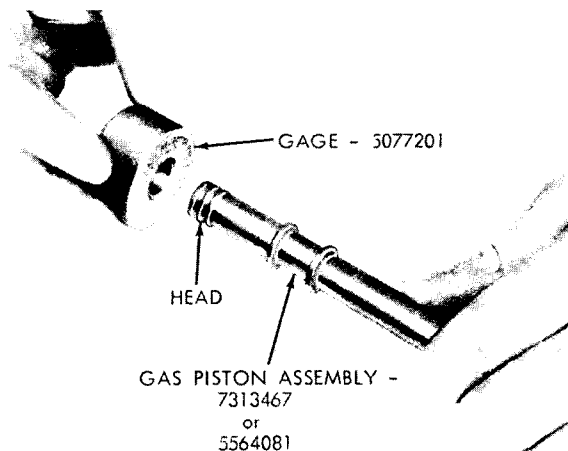
Figure 25. Two types of gas piston assemblies.

replace piston assembly. Inspect gas piston assembly (figs. 24 and 25) (present manufacture) for loose or damaged gas piston. Tighten if loose, replace if damaged.

- (2) **Gaging.** Gage gas piston head using plain ring gage 5077201 as indicated in figure 26.

Note: Before gaging, make certain the gas piston assembly is thoroughly cleaned of all carbon or fouling and the surfaces of rings are smooth. Wipe piston head and gage with a clean lightly oiled cloth. Slide gage over piston head; if gage slides over the piston head, the piston assembly is unserviceable and should be replaced. Pistons must not be oval shaped and there must be no signs of light between gage and piston head when held up to light. Exert only a light pressure on gage. Undersize piston assemblies (unserviceable) will be replaced.

d. Spring and Guide Assembly. Inspect helical compression spring for functioning, cracks, kinks and set. Inspect guide assembly for deformation, loose head (riveted), fit and retention in shoulder of receiver. Replace springs, if cracked or damaged and guide assembly if worn or bent.



ORD F8317

Figure 26. Gaging diameter of gas piston head.

48. Assembly

Assemble the slide and piston group in reverse order of numerical sequence as shown in figure 23.

49. Installation

Install the slide and piston group as shown in figure 22.

Section V. BOLT GROUP

50. Removal

Remove the bolt group as shown in figure 27.

51. Disassembly

Disassemble the bolt group as shown in figure 28.

52. Cleaning

Refer to paragraph 18 for cleaning instructions.

53. Inspection (fig. 29) and Repair (fig. 28)

a. General. Inspect parts for damage and wear which could cause malfunction.

b. Breech Bolt. Inspect breech bolt for side play and looseness with bolt lock and pin (riveted). Inspect firing pin hole for enlargement and face of bolt for corrosion

and wear. Inspect lower surfaces contacting bolt supports, and the center feed rib for wear and burs. Inspect rear top shoulder of breech bolt, where lock contacts receiver locking aperture, for wear and burs. This is an important surface as it affects headspace (para. 64a(3)(b)). Inspect the lower rear cam surfaces where lock of bolt rides up on bolt supports and the firing pin camming surfaces for wear or burs.

c. Extractor and Extractor Spring. Inspect the extractor for wear and damage. Inspect spring for fracture, weak action, and looseness in extractor body. Replace extractor (5, fig. 28) and spring (6, fig. 28), if damaged or worn.

d. Firing Pin. Inspect firing pin nose for pits. Nose must be smooth and round. The firing pin should slide freely in well of bolt and protrusion of nose, from forward face of bolt, should be approximately three

thirty-seconds inch. If the pin protrudes too far, it will result in punctured primers. The camming surfaces contacted by the bolt lock and rear surfaces contacted by the hammer must be free of wear so as not to affect action of the firing pin. Replace firing pins (1, fig. 28), if bent or damaged.

e. *Bolt Link and Bolt Link Pin.* Inspect bolt link for looseness with breech bolt and hammer. Inspect bolt link pin for wear distortion and damage. Replace bolt link

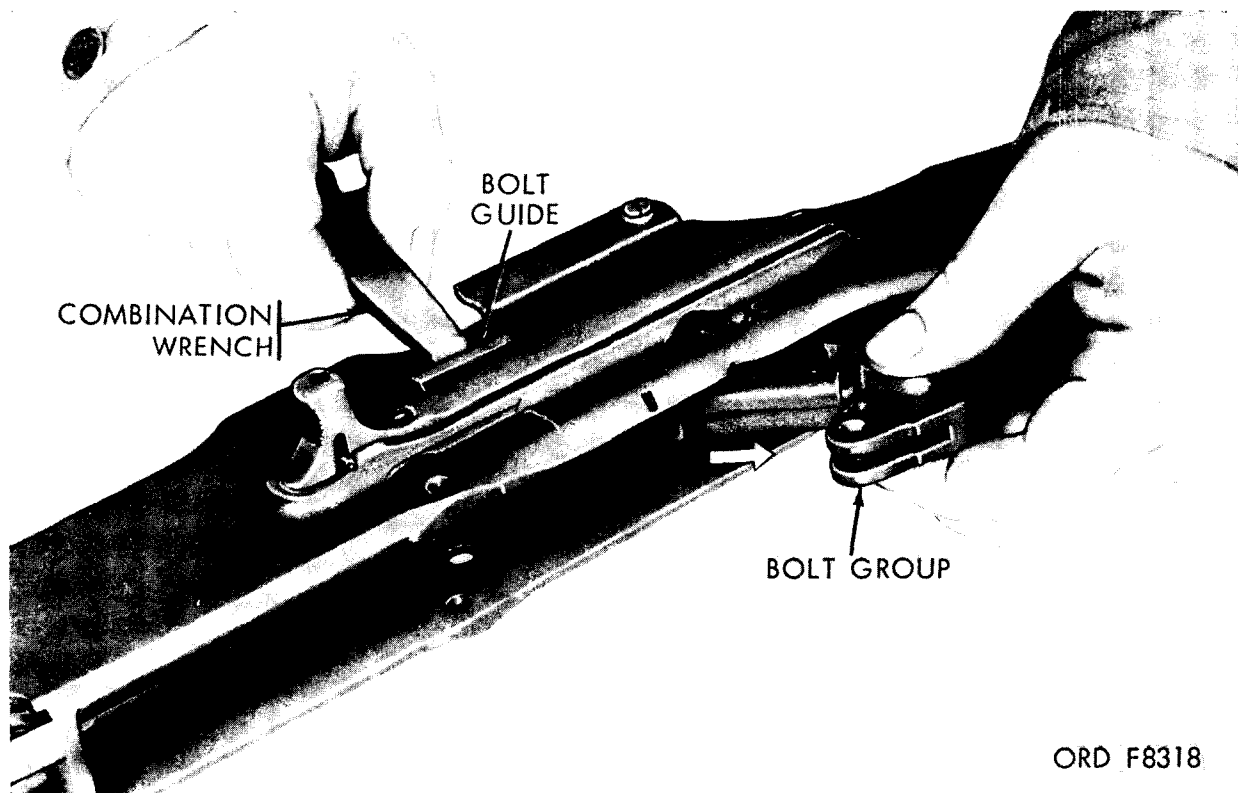
(3, fig. 28), if worn and pin (2, fig. 28), if bent or damaged.

54. Assembly

Assemble the bolt group in reverse order of numerical sequence shown in figure 28.

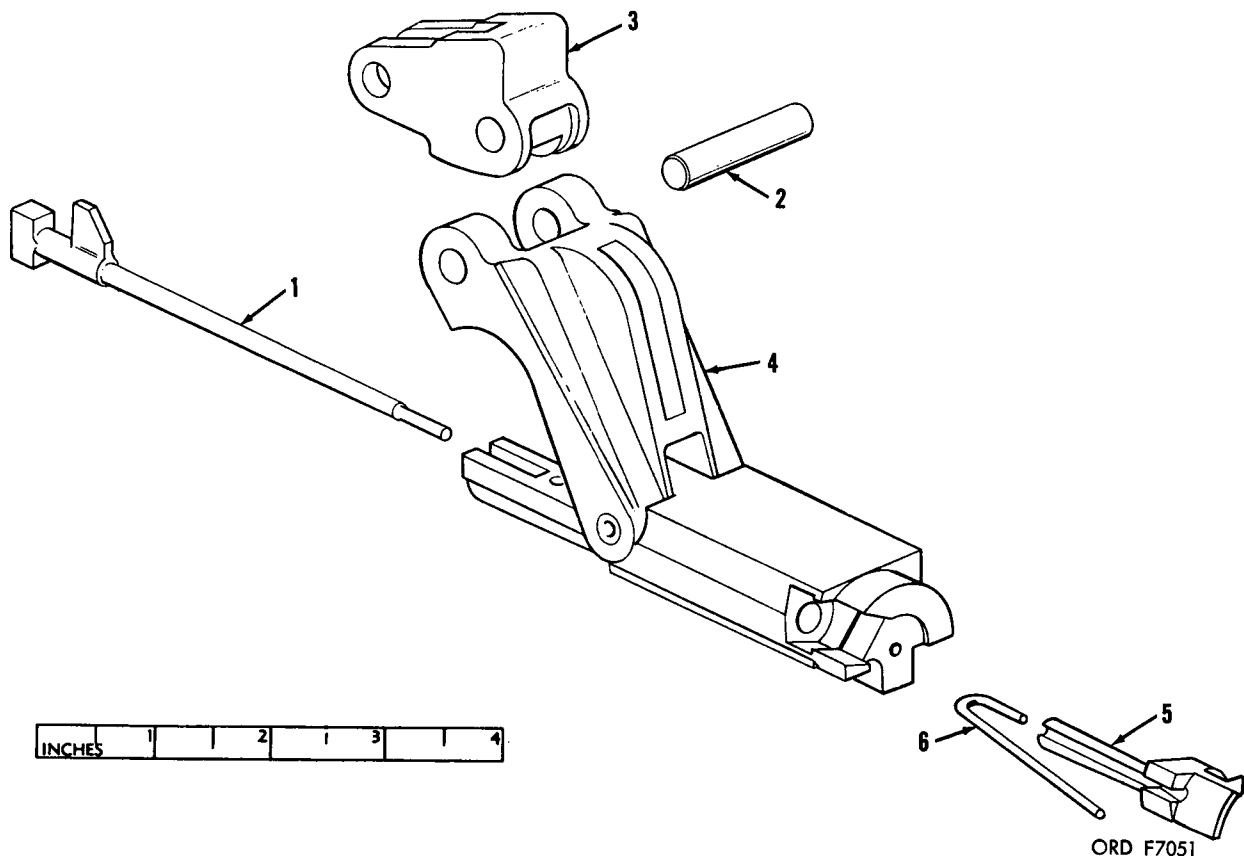
55. Installation

Install bolt group as shown in figure 27.



ORD F8318

Figure 27. Remove/install bolt group.



1-Firing pin 6019652

2-Headless straight pin 5022235

3-Link 6019646

4-Breech bolt 6019695

5-Extractor 5509090

6-Extractor spring 5022202

Figure 28. Bolt group-exploded view.

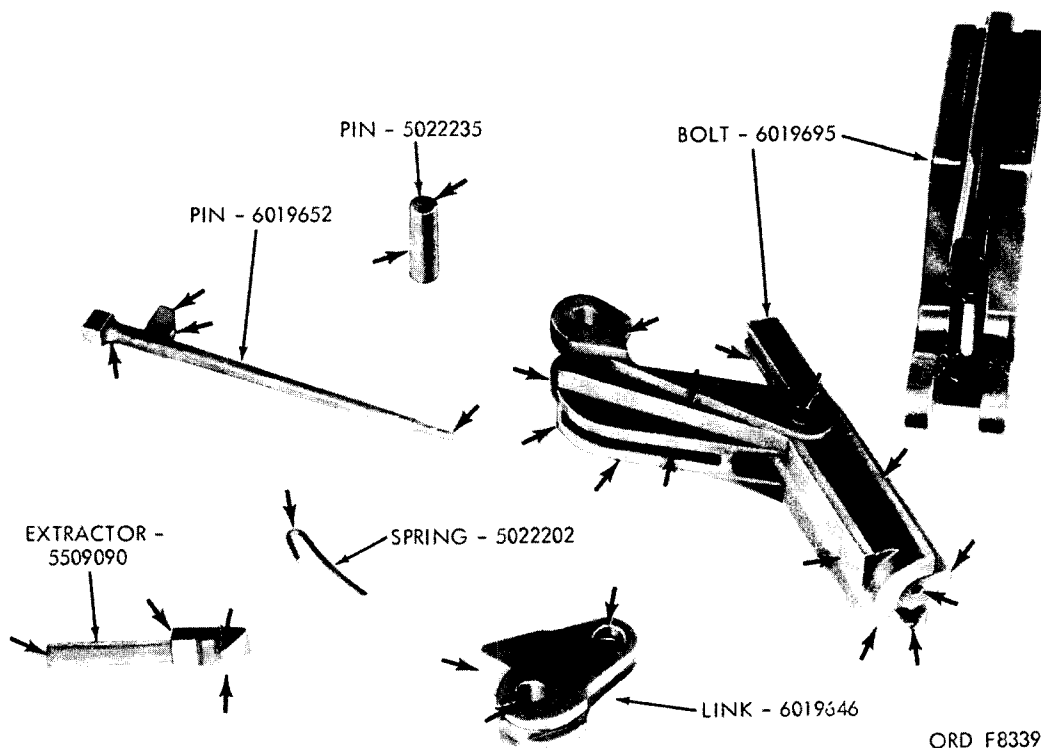


Figure 29. Bolt group-inspection points.

Section VI. BUTT STOCK, BUFFER AND ACTUATOR GROUP

56. Removal and Disassembly

Remove and disassemble the butt stock, buffer and actuator group as shown in figures 30, 31 and 32.

57. Cleaning

Refer to paragraph 18 for cleaning instructions.

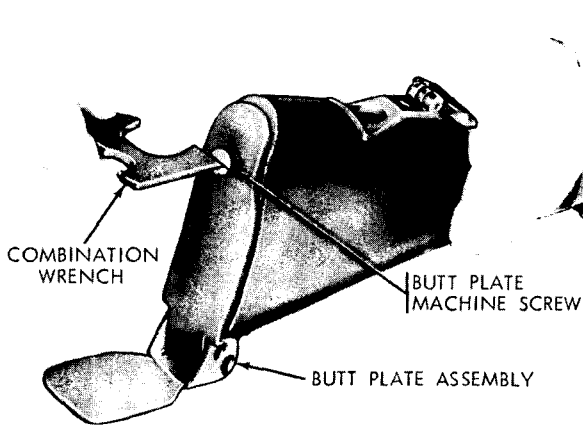
58. Inspection (fig. 33) and Repair (fig. 32)

a. *General.* Inspect parts for damage and wear, burs, rust, and foreign matter that might cause malfunction. Inspect for strip-

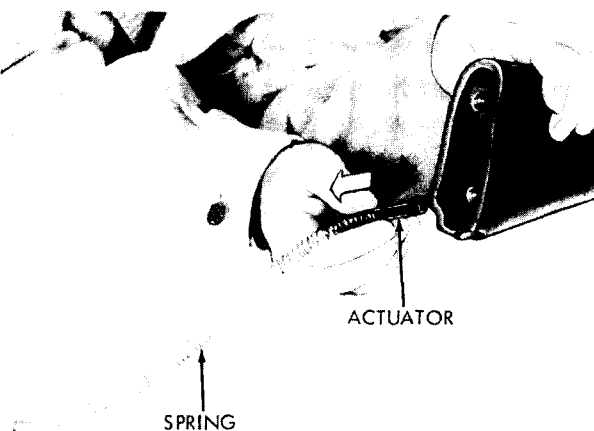
ped threads on machine screws and screw holes and for free mating of parts. Replace all worn, broken, or unserviceable parts. Replace screws, if threads are stripped and springs, if cracked or set.

b. Buffer and Actuator Group.

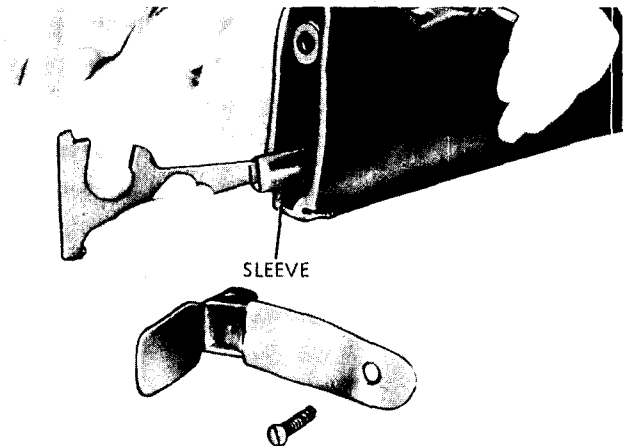
- (1) Inspect functioning of buffer head and buffer spring for free movement in buffer tube. Inspect tube for position and looseness in receiver and for worn or burred head keyways. Buffer tube and receiver should be assembled so that the keyways align properly. One of the



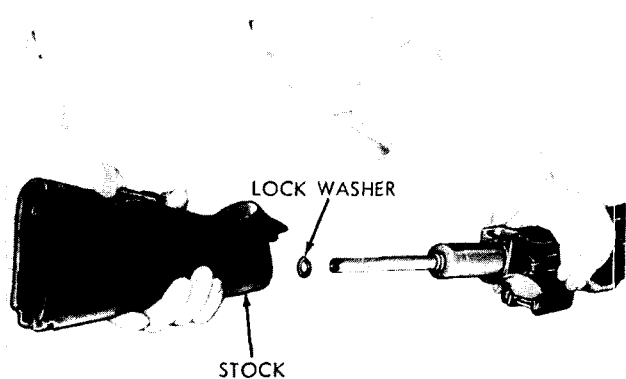
A - REMOVE/INSTALL HINGED BUTT PLATE ASSEMBLY.



C - REMOVE/INSTALL HELICAL COMPRESSION SPRING AND SEAR RELEASE ACTUATOR.



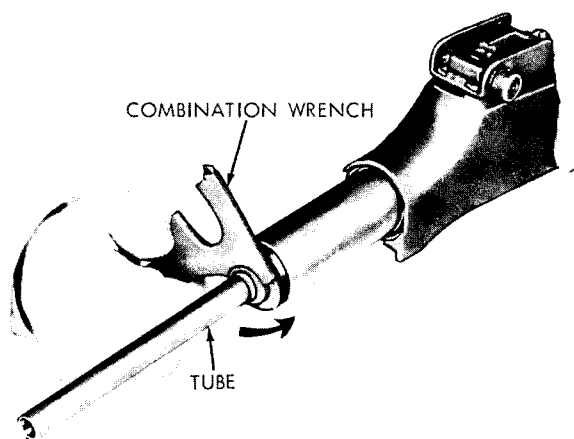
B - REMOVE/INSTALL STOCK RETAINING SLEEVE.



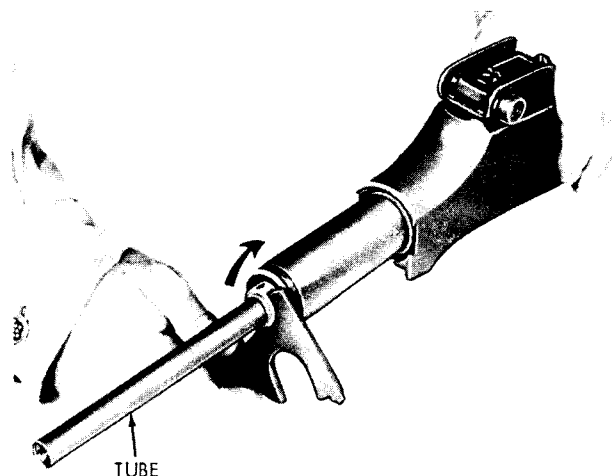
D - REMOVE/INSTALL LOCK WASHER AND BUTT STOCK.

ORD F8319

Figure 30. Remove/install butt stock, buffer and actuator group.



A - REMOVE ACTUATOR TUBE WITH CAP.



B - INSTALL ACTUATOR TUBE WITH CAP.

ORD F8321

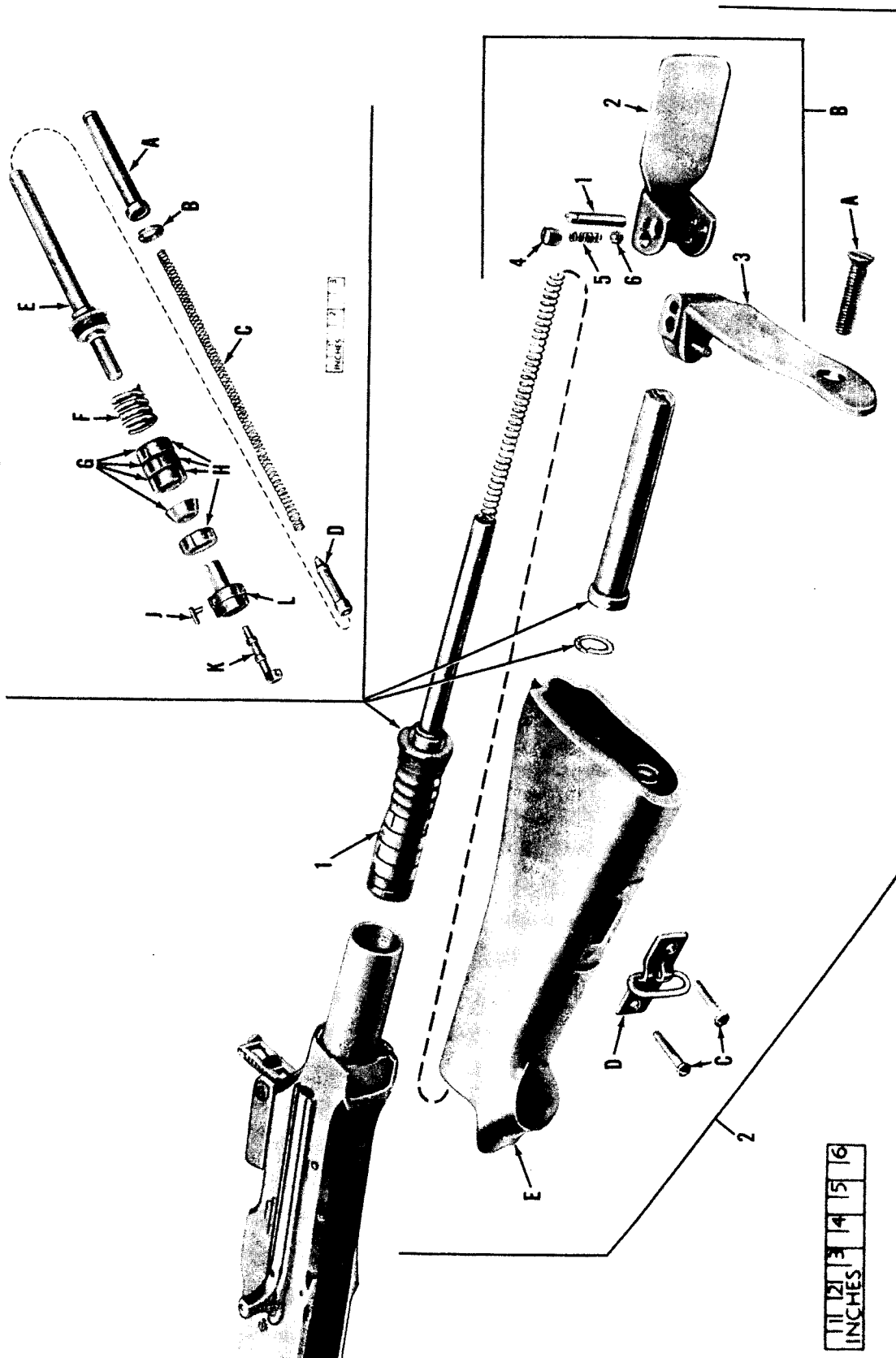
Figure 31. Remove/install actuator tube with cap.

eight keyways in the forward end of buffer tube should be vertically aligned with centerline of bore and receiver so as to position sear release vertically, with nose down, when buffer head is assembled and limit the horizontal forward movement of sear release.

- (2) Inspect buffer head, friction cones and cups for free action in tube. Inspect cones for expansion seating in mating cups (cones should not seat fully in cups when at rest) and for cracks. Cups and cones must be free of burrs or wear that would cause them to stick or bind together.
- (3) Inspect for protrusion of buffer head from face of tube. This dimension should be approximately one-eighth inch. Inspect buffer spring for functioning, fracture, and set.
- (4) Inspect sear release for free movement in buffer head (should be flush with forward face of buffer head when retracted) and for binding in notch. Inspect camming face of nose for wear and burrs. Lower forward edge of nose should be slightly beveled and perfectly smooth. If worn or damaged, replace.
- (5) Inspect actuator tube for wear and

dents. Inspect threaded area for stripped threads. Shallow dents in tube can be removed with an expansion reamer. If dents cannot be removed or if threaded area is damaged, replace tube (1E, fig. 32). Test components in tube after replacement or repair.

- (6) Inspect stock retaining sleeve for clearance with actuator tube and looseness of stop in sleeve and collar on sleeve. Inspect retaining sleeve lock washer for locking function and cracks.
- (7) If buffer head becomes frozen in buffer tube due to broken cups, soak the buffer tube and components in dry cleaning solvent (SD), solvent cleaning compound (PD 126) or general purpose lubricating oil (PL special). Remove by using a hard wood plug to drive out buffer and components from tube. If components do not become dislodged by this method, remove buffer tube and place on a hard wooden block, then drive out parts as indicated above. If cones and cups are frozen, soak in dry cleaning solvent (SD) or solvent cleaning compound (PD 126) and tap edge of cup until loose. Clean parts thoroughly. Replace broken cups and cones.



ORD F7052

Figure 32. Butt stock, buffer and actuator group—exploded view.

1-Buffer and actuator group
 A-Stock sleeve 5564298
 B-Lock washer 96906-35337-67
 C-Compression helical spring
 5153134
 D-Actuator 6147486
 E-Tube 6147493
 F-Compression helical spring
 5153131
 G-Friction cone 5022217
 H-Friction cup 5022218
 J-Buffer key 5152881
 K-Sear release 6147491
 L-Buffer head 6147492
 2-Butt stock group
 A-Machine screw (long)
 5153084

B-Hinged butt plate assembly
 7313114
 1-Headless straight
 pin 5013746
 2-Body 6147321
 3-Plate 7313115
 4-Setscrew 5013745
 5-Compression helical
 spring 5013747
 6-Bearing ball 104918
 C-Machine screw 134302
 D-Butt assembly swivel
 7266132
 E-Shoulder gun stock
 7266155

Figure 32-Continued.

c. Stock.

- (1) Inspect stocks for cracks, scoring, and surfaces protruding beyond metal. Inspect stocks for stripped threads in the butt plate and swivel screw holes.
- (2) Inspect hinged butt plate assembly for deformation and free action. The hinged butt plate must work freely when it is rotated and must be held securely in its open position by the bearing ball in the inner butt plate. Check bearing ball for wear and spring for tension and set. Replace bearing ball if worn and spring, if cracked or set.
- (3) Stripped threads are often encountered on the screw hole located in the heel of the stock (fig. 34) using the inner butt plate of early manufacture (fig. 35), due to frequent removal of the hinged butt plate assembly. If the stock is unserviceable due to stripped threads the

stock may be utilized without use of a screw. This may be accomplished as indicated in the procedures described in (a) through (c) below.

- (a) Fabricate a steel pin to the dimensions shown in figure 36.
- (b) Tack-weld pin to lug in butt plate as shown in figure 36.
- (c) Finish, if necessary, using a fine file. Remove the large screw in the hinged butt plate assembly before removing the small screw in the heel of the butt stock to prevent stripping of threads. Install the small screw first when assembling.

59. Assembly and Installation

a. *Assembly.* Assemble butt stock, buffer and actuator in reverse order of numerical sequence as shown in figure 32.

b. *Installation.* Install as shown in figures 31 and 30.

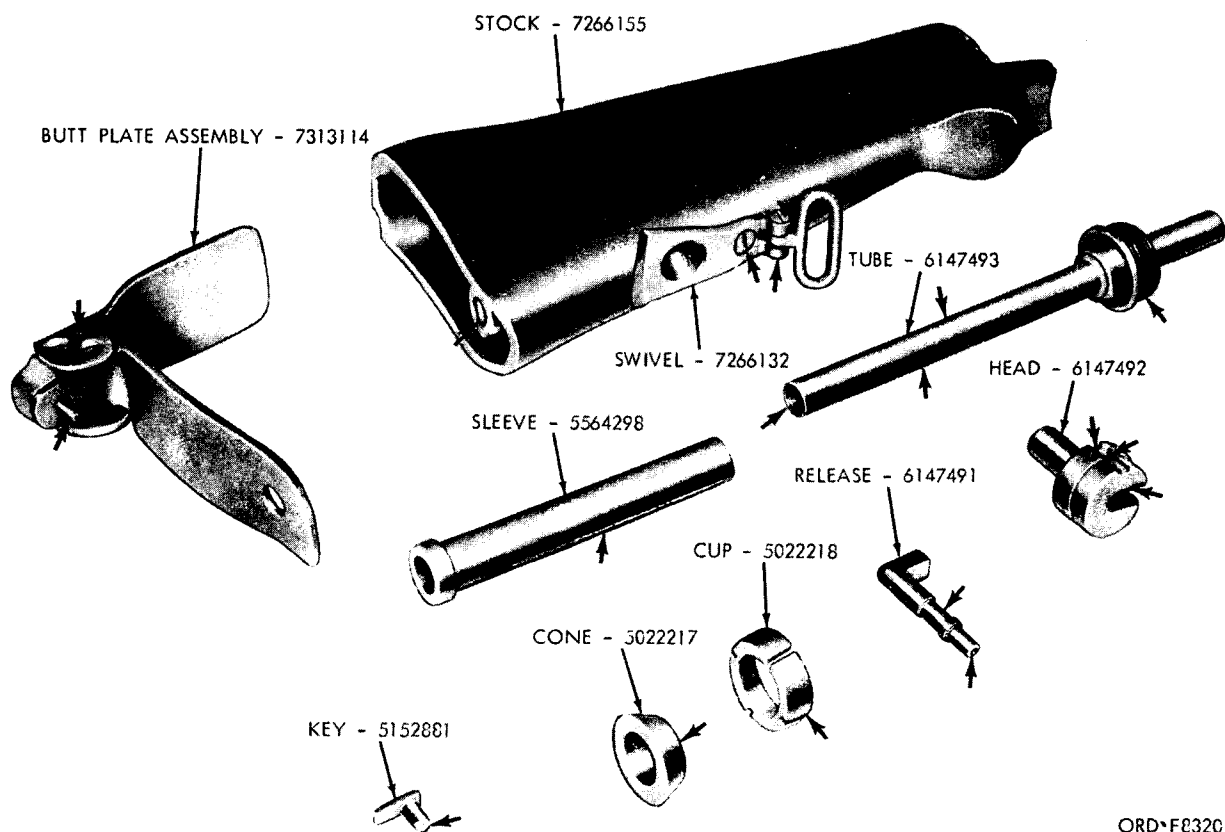


Figure 33. Butt stock, buffer and actuator group—inspection points.

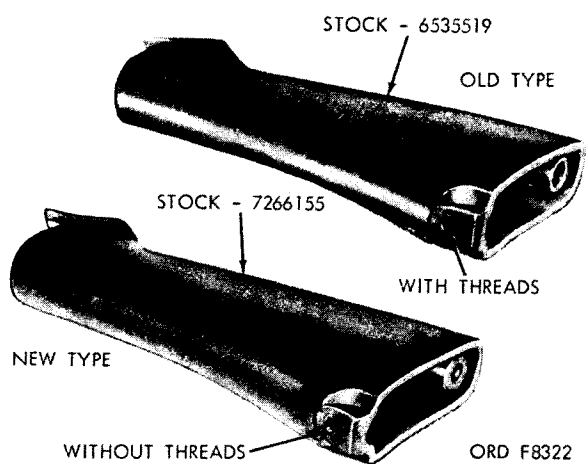


Figure 34. Two types of stocks.

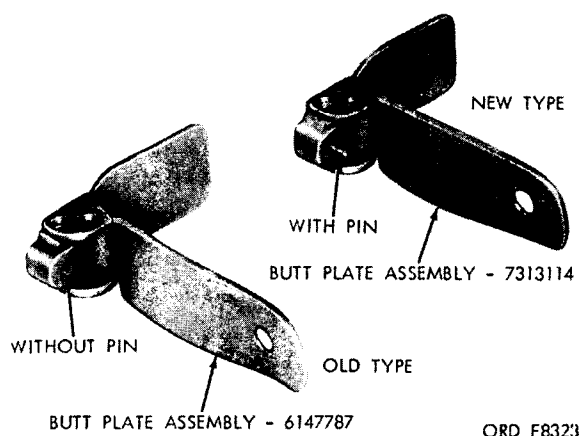


Figure 35. Two types of butt plate assemblies.

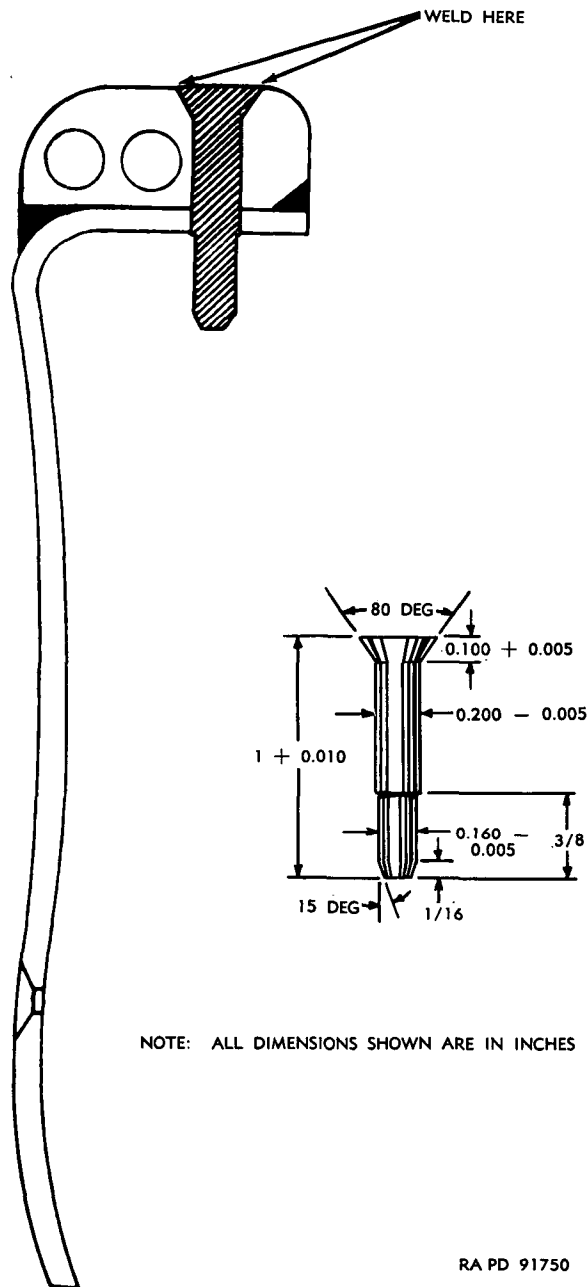


Figure 36. Modification of inner butt plate (early manufacture).

Section VII. BARREL AND RECEIVER GROUP

60. Removal of Barrel Group

Note: Remove the barrel group from receiver only when replacement is necessary or for gaging depth of chamber.

Remove barrel group from receiver as shown in figure 37.

61. Disassembly of Barrel Group

Note: Removal of components of barrel group is necessary only for replacement of unserviceable parts or for the purposes of salvaging.

Disassemble the barrel group as shown in figure 38.

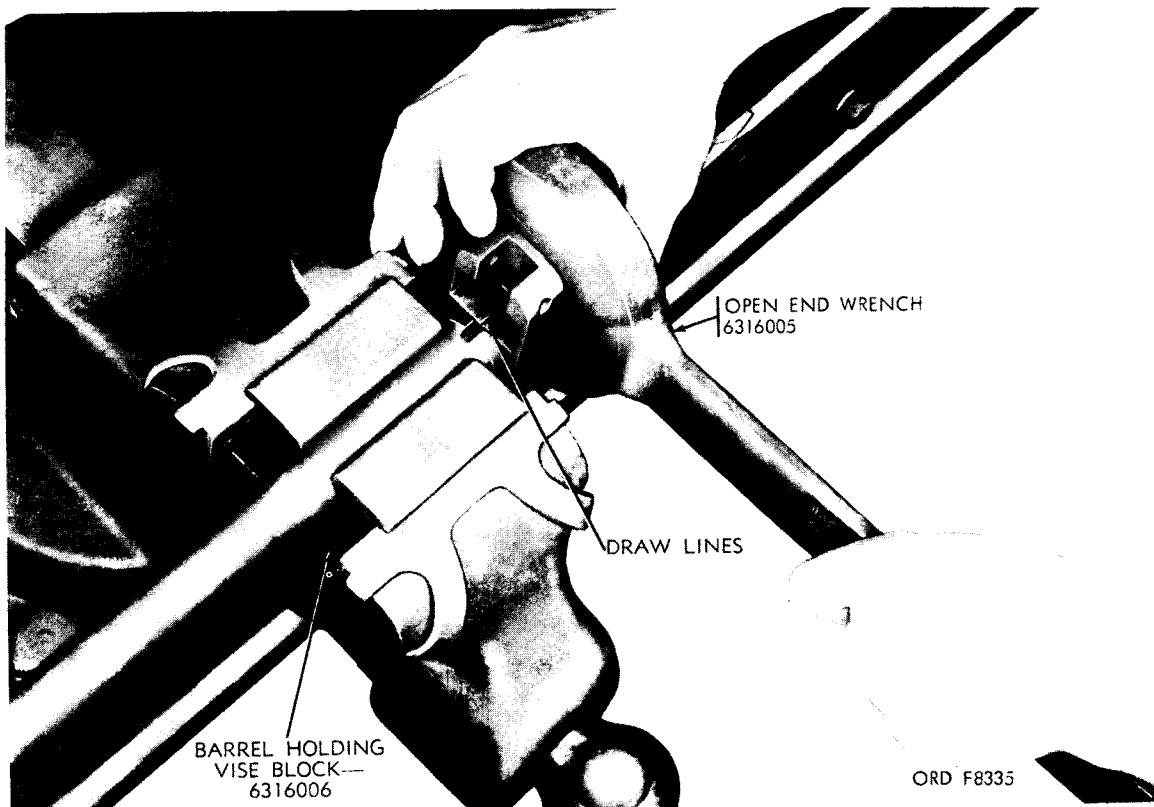


Figure 37. Remove/install barrel group.

62. Disassembly of Receiver Group

a. Disassemble the receiver group as shown in figure 38.

b. Remove buffer tube from receiver as shown in figure 39.

Note: Removal of buffer tube is authorized only for replacement or repair.

c. Remove top plate from receiver as shown in figure 40.

63. Cleaning

Refer to paragraph 18 for cleaning instructions.

64. Inspection (fig. 41) and Repair (fig. 38)

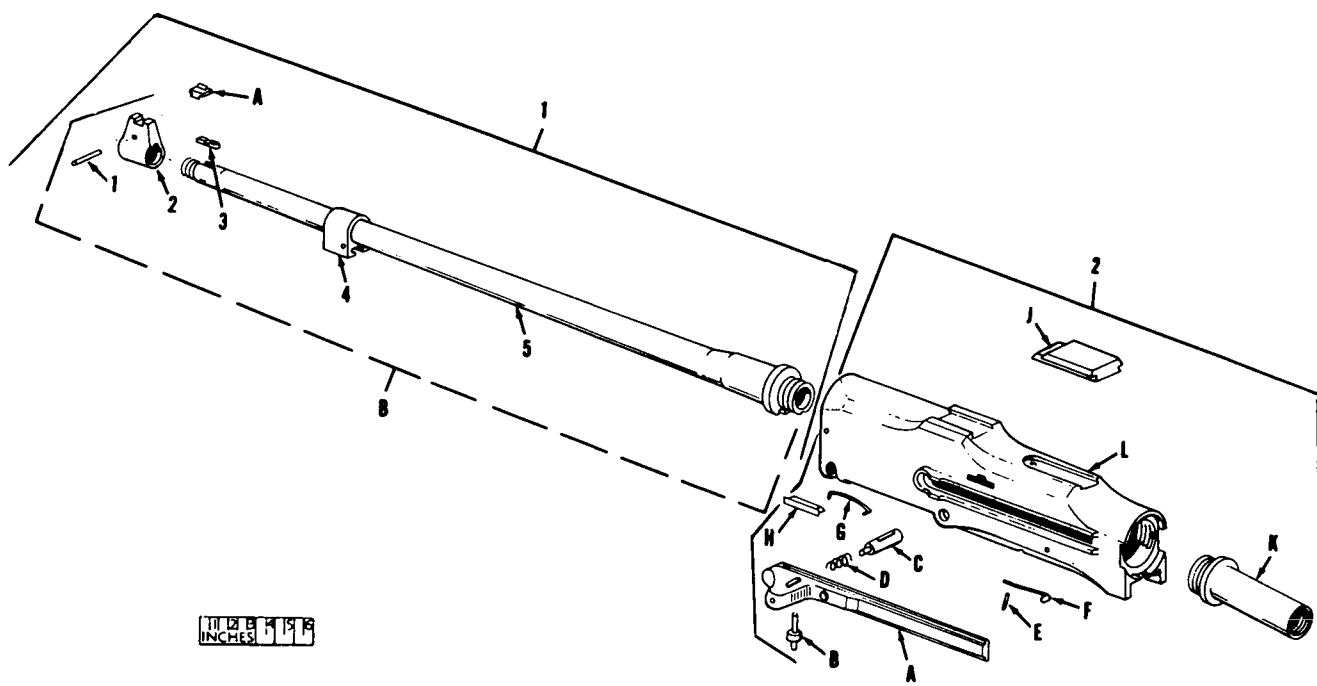
a. Barrel.

- (1) *General.* Inspect barrel for deformation, alinement in receiver, crossed threads, rust, corrosion, wear, burs and foreign substances in gas port and extractor aperture. Make certain barrel alines exactly with receiver when assembled, in order that rear end of gas cylinder tube will fit mating slot in receiver;

front sight will aline properly. If draw marks do not qualify, fasten a shim from shim stock or advance draw shoulder on barrel as applicable.

(2) Visual Inspection.

- (a) Inspect barrel for ruptured cartridge case. To remove ruptured cartridge case use ruptured cartridge case extractor 7790352 (fig. 5).
- (b) Using barrel reflector 7265788 (fig. 5) examine bore of barrel (fig. 42). If the barrel is not bent or otherwise deformed or appears free of bulges and large pits and if lands are sharp and uniformly distinct, it is serviceable. A bulge may be detected by a shadowy depression or a ring in the bore. It may often be detected by a raised ring on the exterior surface. If the barrel is pitted to the extent that the sharpness of the lands is affected or contains a pit or pits in the lands or grooves large enough to permit



1-Barrel group

- A-Front sight blade 6147381*
- B-Barrel assembly 6508769*
 - 1-Headless straight pin 5022230*
- 2-Base 6019630*
- 3-Machine key 5022223*
- 4-Bracket 6019634*
- 5-Barrel 6523300*

2-Receiver group

- A-Handle 5509070*

- B-Operating handle pin 5022236*

- C-Plunger 5022241*
- D-Compression helical spring 5153129*
- E-Headless straight pin 5022228*
- F-Spring assembly 6019697*
- G-Bolt spring 5022251*
- H-Bolt guide 6147130*
- J-Top plate 6019653*
- K-Buffer tube 6147493*
- L-Receiver 6535472*

Figure 38. Barrel and receiver group—exploded view.

passage of gas around the bullet (pits the width of a land or groove and three-eighths inch long or longer), the barrel will be scrapped.

(3) Gage inspection.

(a) Gaging breechbore.

1. Barrels inspected and found serviceable by visual inspection will be gaged using breech bore gage 5564343 as shown in figure 43.
2. Barrels will be replaced if gage readings exceed 0.310-inch in hands of troops in field or 0.306-

inch at preembarkation inspection.

(b) Gaging headspace.

1. Headspace of the rifle is the distance between the shoulder of the chamber and the face of the bolt when the bolt is in "locked position". If headspace is insufficient, the bolt does not fully lock behind the cartridge without being forced. If headspace is excessive, the cartridge has too much play in the chamber, when the bolt is locked behind it. Either condition is unsafe.

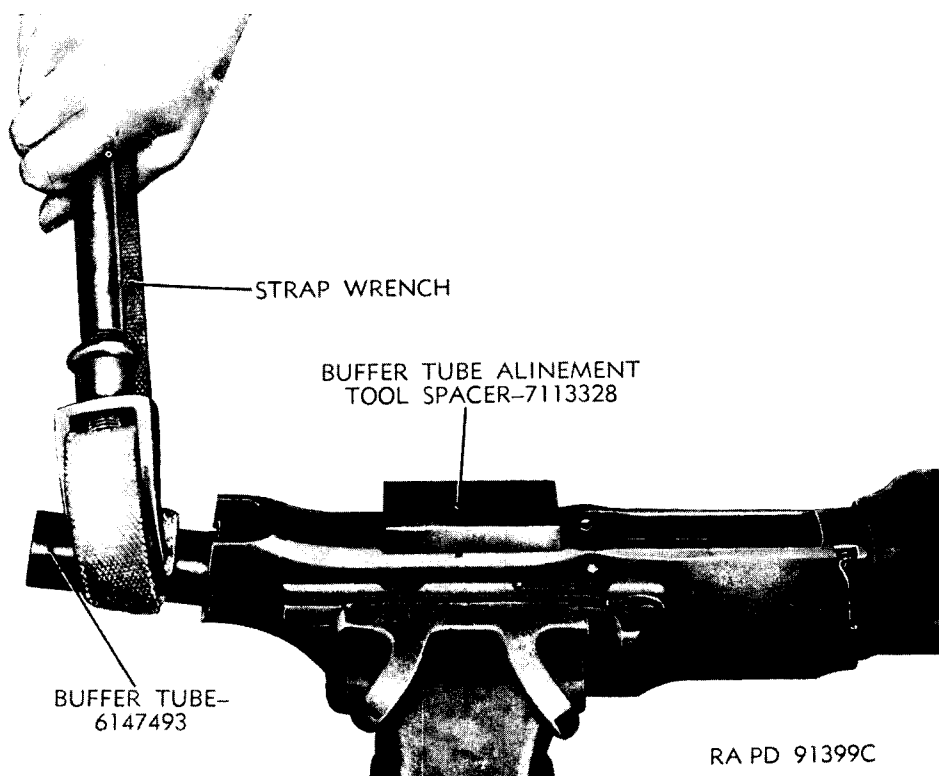


Figure 39. Removal of buffer tube.

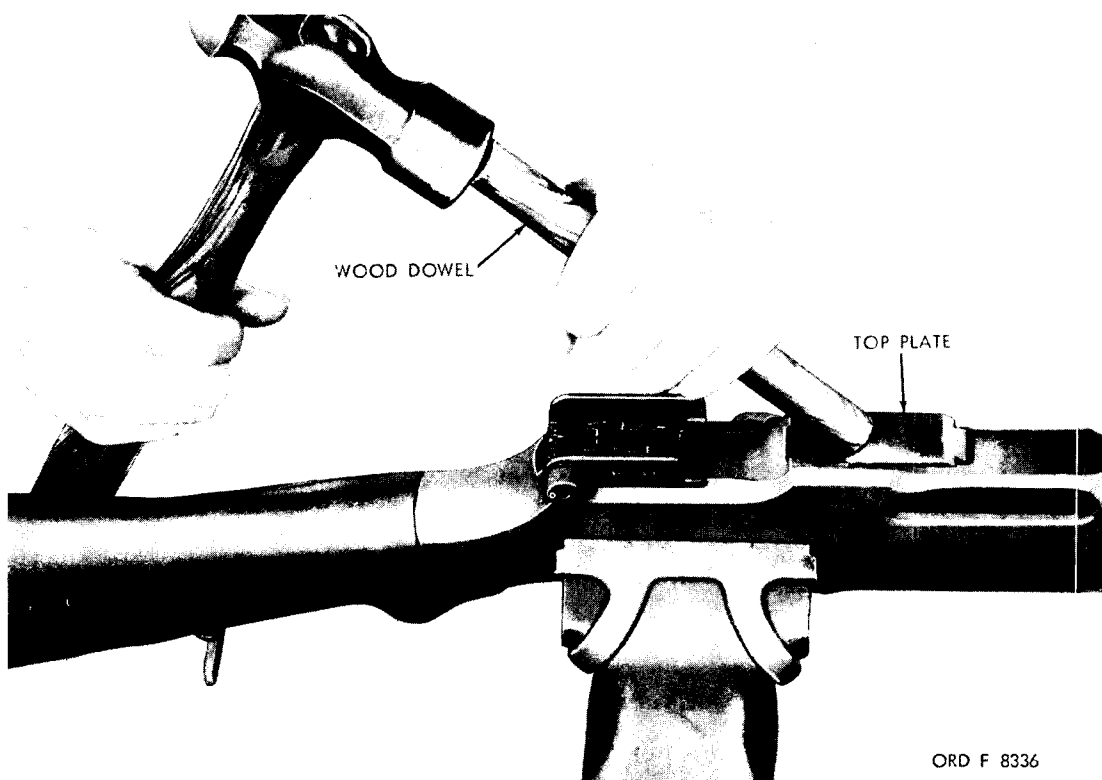


Figure 40. Removal of top plate.

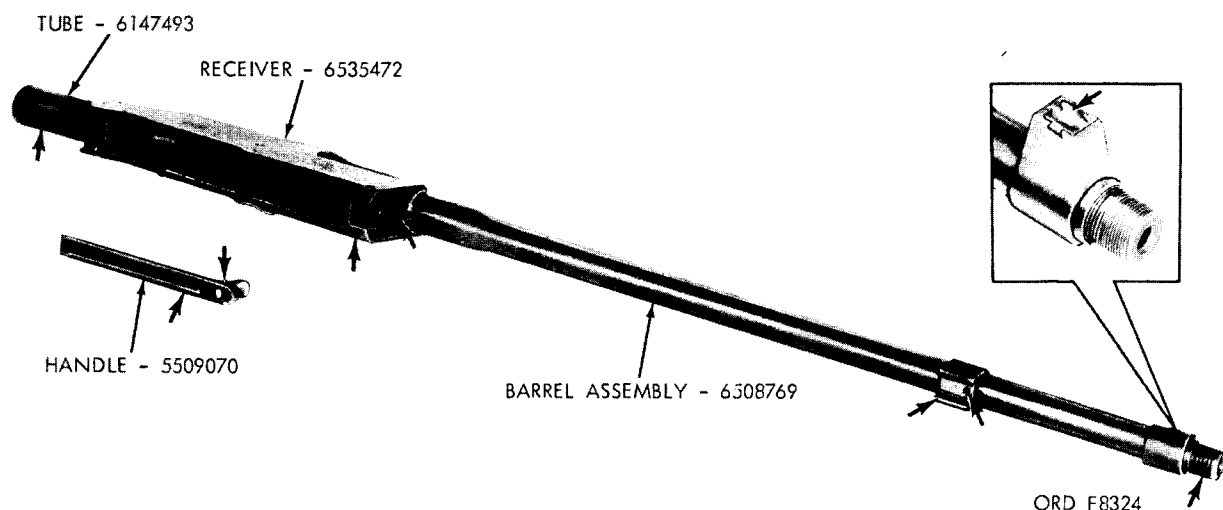


Figure 41. Barrel and receiver group—inspection points.

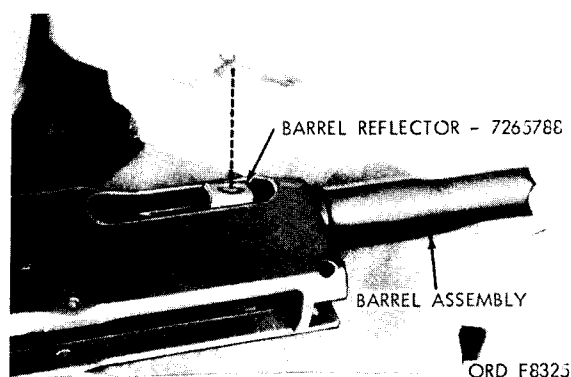


Figure 42. Inspection of barrel bore.

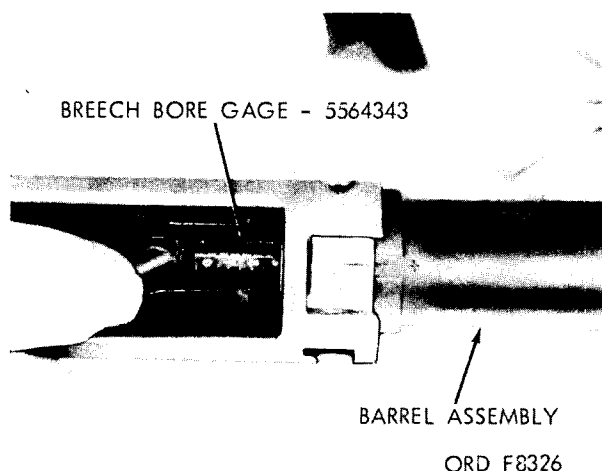


Figure 43. Gaging of breech bore.

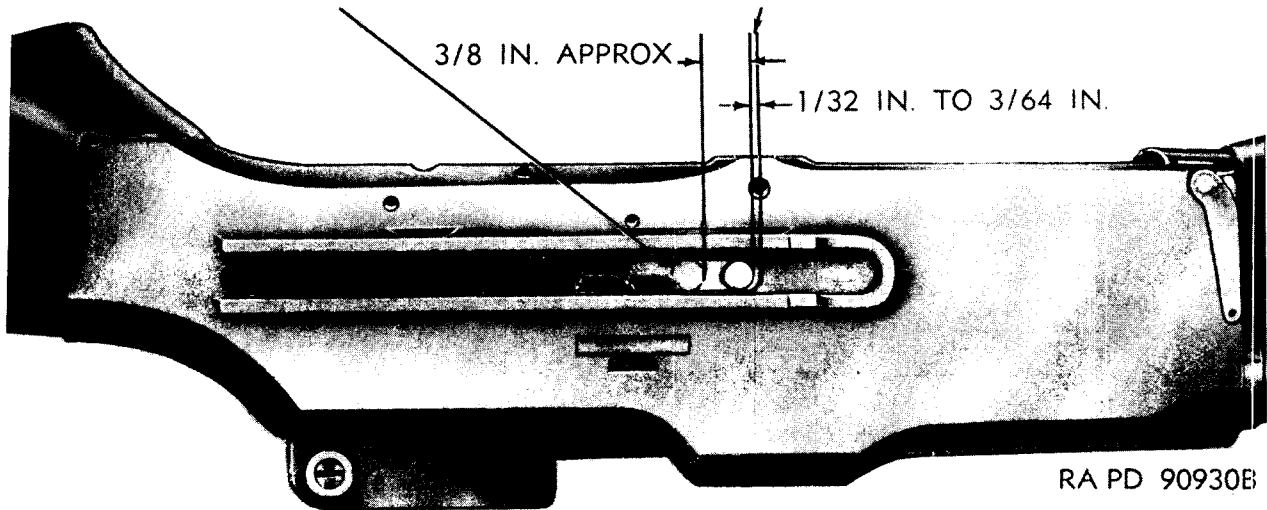
2. Before gaging headspace (fig. 44) make certain the chamber is clean. Place the bolt assembly

(minus the firing pin and extractor), with bolt link assembled, in the receiver. Install the slide and piston group (minus spring and guide), and fit the hammer into its seat in slide and insert hammer pin. Work the slide back and forth several times by hand to insure that the parts are correctly assembled. Install the gas cylinder and fore end group, and lock it in position with gas cylinder retaining pin. With the slide pushed fully forward, note the relative position of the hammer pin with reference to the forward part of its slot on side of receiver. It will be found that there is a clearance of from one thirty-second to three sixty-fourth inch between the hammer pin and the forward part of the slot. This position of the hammer pin is referred to as the "locked position".

- (a) *Minimum headspace.* To test for minimum headspace, place the headspace gage 7319944 (fig. 4) in the chamber and move the slide forward. Note the position of the hammer pin. It should be in locked position (fig. 44). If the hammer pin is in the locked position, the minimum headspace is correct.

POSITION OF HAMMER PIN WITH HEAD
SPACE GAGE-7319954 IN CHAMBER
SHOULD NOT BE LESS THAN
3/8 INCH FROM "LOCKED POSITION"

POSITION OF HAMMER PIN WHEN IN
"LOCKED POSITION" WITH HEADSPACE
GAGE-7319944 IN CHAMBER SHOULD
BE FROM 1/32 TO 3/64 INCH



RA PD 90930B

Figure 44. Gaging headspace.

If the hammer pin is stopped before reaching the locked position, the headspace is insufficient and should be corrected.

Note: Never force gage to obtain locked position.

- (b) **Maximum headspace.** To test for maximum headspace place the headspace gage 7319954 (fig. 4) in the chamber and move the slide forward until stopped by the gage. Note position of hammer pin. It should not be less than three-eighths inch from the locked position (fig. 44). If the hammer pin is not stopped on or before it is in this position, the headspace is excessive and should be corrected.

Note: Usage of headspace gage 7319950 (fig. 4) is utilized on weapons only at time of rebarreling. Under no circumstances should the headspace exceed 1.950 inch.

b. Gas Cylinder Tube Bracket. Inspect gas cylinder tube bracket for looseness on barrel, missing or loose pin, alinement of gas port with barrel port, and for worn or burred T-cuts. If bracket is loose on barrel or if pin is missing replace barrel

assembly. Unserviceable barrels will be salvaged.

c. Front Sight and Base. Inspect front sight blade for retention to base in mating dovetail, for worn or burred dovetail and for deformation or shine. Inspect front sight base for looseness on barrel and missing or burred key and for worn keyway on barrel. Also check for loose or missing straight headless pin. Replace front sight blade if damaged, or pin if missing. Replace base if damaged or remove burrs if dovetailed portion contains burrs. If blade is out of alinement, this is due to enlarged dovetailed aperture in base. Peen the upper edges, aline sight blade (by eye) and stake, using old mark.

d. Receiver (fig. 41).

- (1) Inspect receiver for wear, deformation, burrs, rust, and foreign matter in recesses.
- (2) Inspect for loose rivets in bolt supports and for cracks in barrel end and bridge.
- (3) If surface of bolt locking recess in receiver is burred or wavy, repair by removing top plate (fig. 40) and stoning rough or wavy surface smooth, using a fine grain sharp-

ening stone. Make certain to stone evenly, removing as little metal as possible, as this could affect head-space of the weapon. Check head-space (para 64a(3)(b)), after stoning.

- (4) Inspect receiver for crossed threads.
- (5) Inspect buffer tube for dents or damage. Shallow dents in buffer tube can be removed by reaming with an expansion reamer set to the original inside diameter of tube. Larger dents may be swaged out, using a rod the size of the inside diameter of the tube and then by reaming. If dents are deep enough to cause possible weakening of wall of tube, replace tube (2K, fig. 38). Test components in tube, after repair, for free movement.
- (6) Inspect top plate for looseness (should be drive-fit).
- (7) Inspect receiver for recess cut (fig. 45). Receivers which do not contain this cut may be reworked if desired.

e. Operating Handle, Plunger, and Spring. Inspect operating handle for functioning and free movement in its slideway.

Inspect plunger for functioning and free movement in its well. Inspect spring for cracks, functioning and set. Replace handle (2A, fig. 38), if bent or distorted. Replace plunger (2C, fig. 38), if worn and spring if cracked or set.

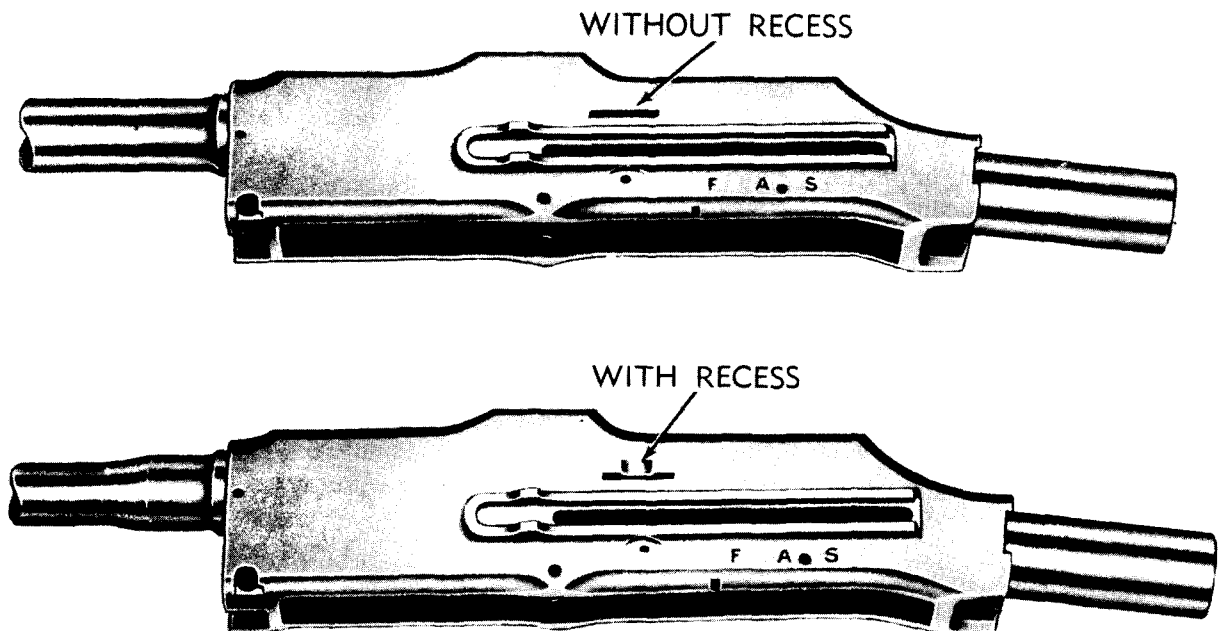
f. Bolt Guide and Spring. Inspect bolt guide for sustained functioning with bolt, looseness with spring, and weak action of spring. Replace bolt guide (2H, fig. 38), if worn and bolt spring (2G, fig. 38) if cracked or damaged.

g. Spring Assembly and Pin. Inspect spring assembly for wear and damage. Inspect for bent and damaged pin. Replace spring, if worn or damaged and pin, if bent.

h. Gas Cylinder Tube Retaining Pin. Inspect retaining pin for spring retention with depression in receiver, locking function of key in undercut in receiver (left side). Inspect spring for looseness on pin (riveted), deformation, and fracture. Replace retaining pin, if worn or damaged.

65. Assembly

a. Barrel Group. Assemble the barrel group in reverse order of numerical sequence as shown in figure 38.



RA PD 148394

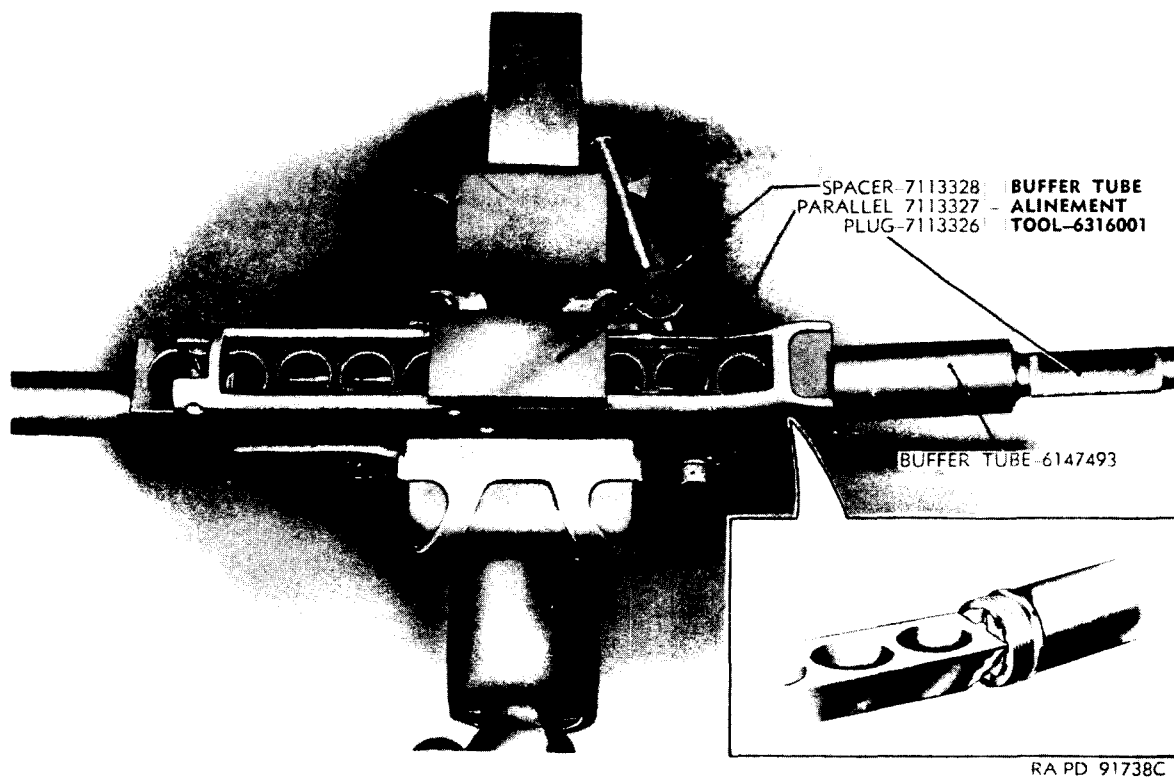
Figure 45. Receiver with and without recess cut.

b. Receiver Group. Assemble the receiver group in reverse order of numerical sequence as shown in figure 38.

Note: When assembling the buffer tube on receiver as shown in figure 46 make certain that one of the eight grooves in the head of the tube lies centrally horizontal with the top of the receiver. Clamp receiver in vise, first inserting the spacer 7113328 (fig. 46) of the buffer tube alinement tool 6316001 between inside faces of receiver walls to prevent squeezing of receiver, and insert parallel 7113327 of buffer tube alinement tool into receiver, with the keyed end toward buffer tube end of receiver as indicated in figure 46. Start the buffer tube into the ends of the receiver and insert plug 7113326 of buffer tube alinement tool as shown in figure 46. Tighten buffer tube with strap wrench until plug engages keyed end of parallel. The buffer tube must be at tightest possible position at which the plug and parallel will engage, using shim or shims, if necessary.

66. Installation (fig. 37)

When installing the barrel group to receiver make certain it is tight enough in the receiver not to work loose. Screw the barrel into the receiver until the drawline matches that of the receiver. Then assemble the gas cylinder tube to determine whether the gas cylinder tube bracket on the barrel alines properly with the receiver, so gas cylinder tube rear tang slides easily into its aperture in the receiver. If it does not, turn the barrel slightly until alinement is correct. When assembled, check extractor cut in rear face of barrel for position.



RA PD 91738C

Figure 46. Assembling buffer tube to receiver.

Section VIII. REAR SIGHT ASSEMBLY

67. Removal

Remove the rear sight assembly as shown in figure 47.

68. Disassembly

Disassemble the rear sight assembly as shown in figure 48.

69. Cleaning

Refer to paragraph 18 for cleaning instructions.

70. Inspection (fig. 49) and Repair (fig. 48)

a. Inspect parts for damage, wear, burs, rust, foreign matter in recesses, deformation, and for free action with mating parts. Inspect screws and screw holes for stripped threads. Replace screws if threads are stripped. Replace rear sight leaf (5, fig. 48), if threads in screw holes are damaged.

b. Inspect rear sight base for looseness on receiver. Inspect windage scale for

wear and damage and base spring for weak tension and cracks. Replace windage scale (9, fig. 48), if worn or damaged and base spring if cracked or if tension is weak.

c. Inspect rear sight windage click plunger for functioning with knob and spring for weak tension and fracture. Replace worn plunger and weak tension spring. Replace knob, if damaged.

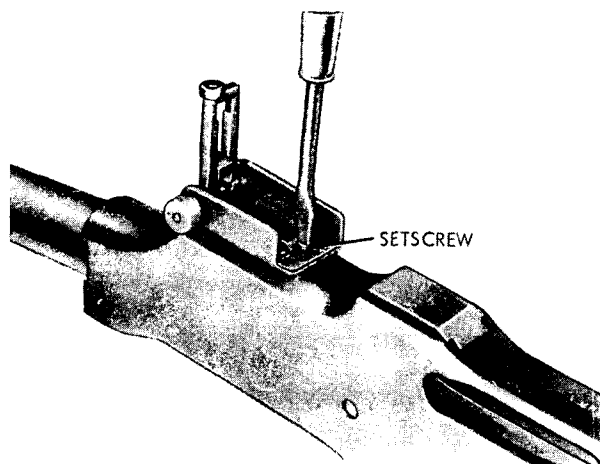
d. Inspect functioning of elevating screw in rear sight leaf. Inspect screw for missing and loose retainer pin. Replace rear sight leaf if elevating screw does not function properly or if parts are missing.

71. Assembly

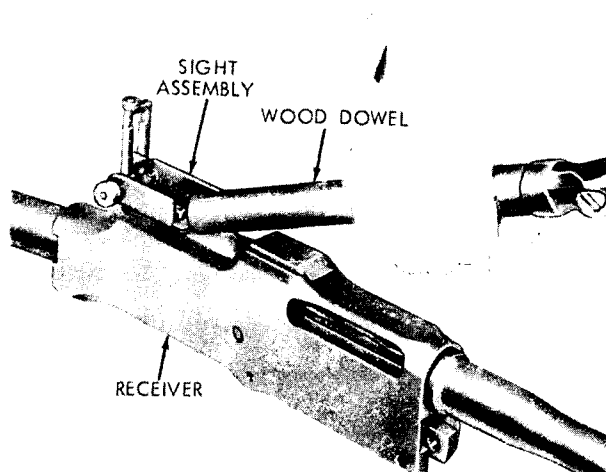
Assemble the rear sight assembly in reverse order of numerical sequence as shown in figure 48.

72. Installation

Install rear sight assembly as shown in figure 47.



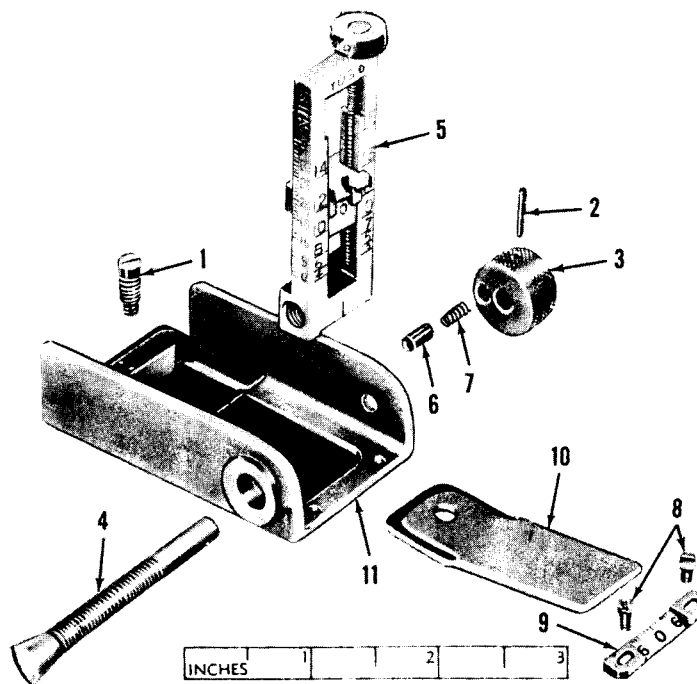
A - REMOVE/INSTALL REAR SIGHT BASE SETSCREW.



B - REMOVE REAR SIGHT ASSEMBLY FROM RECEIVER.

ORD F8327

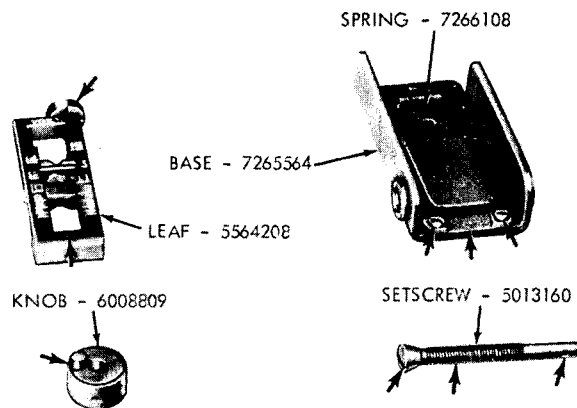
Figure 47. Removal/installation of rear sight assembly.



ORD F7C54

- | | |
|--|--------------------------------------|
| 1-Setscrew 5013158 | 7-Compression helical spring 5013154 |
| 2-Headless straight pin 5013700 | 8-Screw 5153167 |
| 3-Rear sight windage screw knob 6008809 | 9-Rear sight windage scale 5013159 |
| 4-Setscrew 5013160 | 10-Rear sight base spring 7266108 |
| 5-Rear sight leaf 5564208 | 11-Base 7265564 |
| 6-Rear sight windage click plunger 5013155 | |

Figure 48. Rear sight assembly-exploded view.



ORD F8328

Figure 49. Rear sight assembly-inspection points.

Section IX. BIPOD ASSEMBLY

73. Removal

Remove the bipod assembly as shown in figure 50.

74. Disassembly

Disassemble the bipod assembly as shown in figure 51.

75. Cleaning

Refer to paragraph 18 for cleaning instructions.

76. Inspection (fig. 52) and Repair (fig. 51)

a. Inspect thumbscrews for stripped threads and for missing and worn keys. Replace thumbscrews if threads are stripped and keys if missing or worn.

b. Inspect bipod body for deformation of cylinder and leg locking slots for wear, cracks, and burs. Replace bipod body (6, fig. 51) if worn or damaged.

c. Inspect leg joints for looseness of tubes, loose fit in body mating apertures, locking action and wear. Inspect tubes for deformation and foreign matter in keyways.

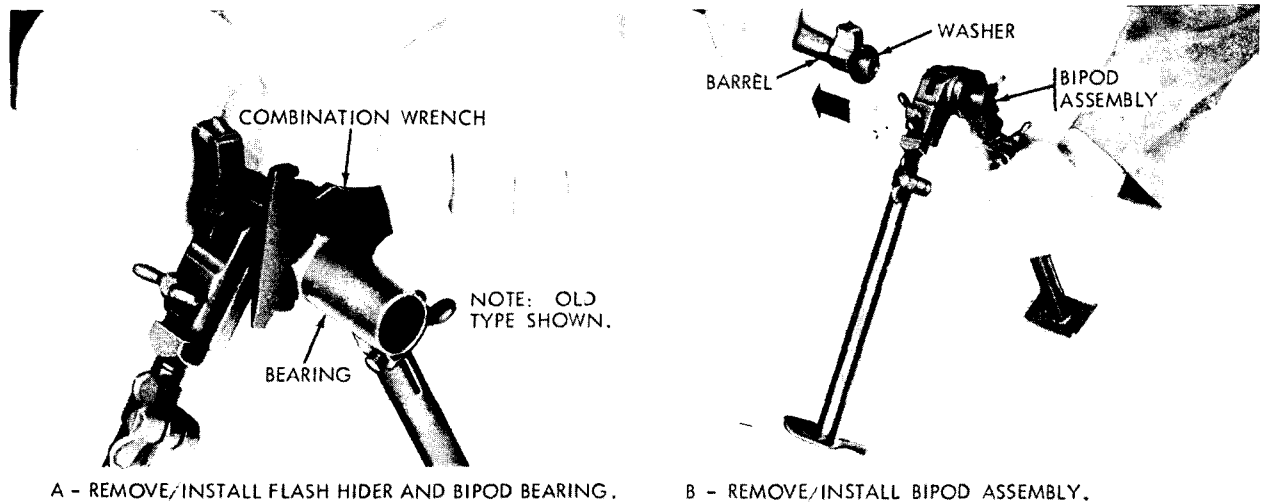
d. Inspect clamps on legs for spring action, wear and stripped threads. Inspect for loose, damaged, or bent feet (welded). Inspect legs for binding. They should slide freely. Replace legs (4 and 5, fig. 51) if tube portion is dented or bent or if screw holes contain stripped threads. Weld bipod feet, if loose on legs; straighten, if bent.

77. Assembly

Assemble the bipod assembly in reverse order of numerical sequence shown in figure 51.

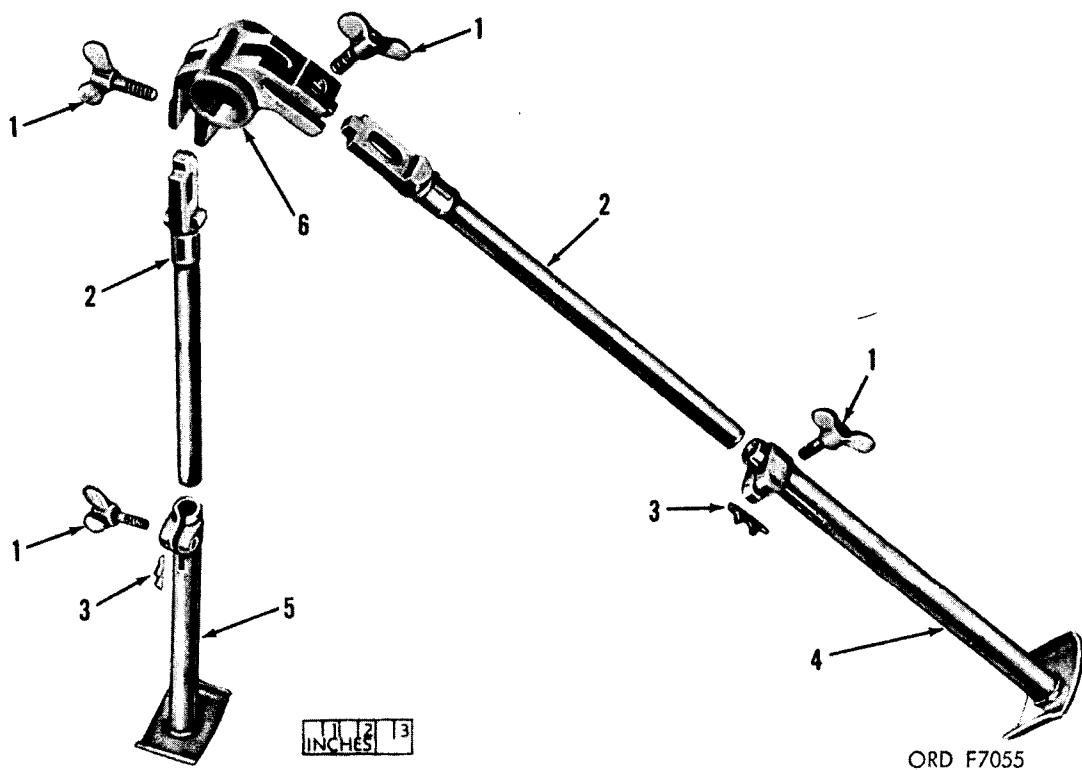
78. Installation

Install the bipod assembly as shown in figure 50.



ORD F8329

Figure 50. Removal/installation bipod assembly.



1-Thumbscrew 5152774
 2-Leg 7312235
 3-Bipod assembly key
 7312238

4-Leg 7312236
 5-Leg 7312237
 6-Bipod body 6147337

Figure 51. Bipod assembly—exploded view.

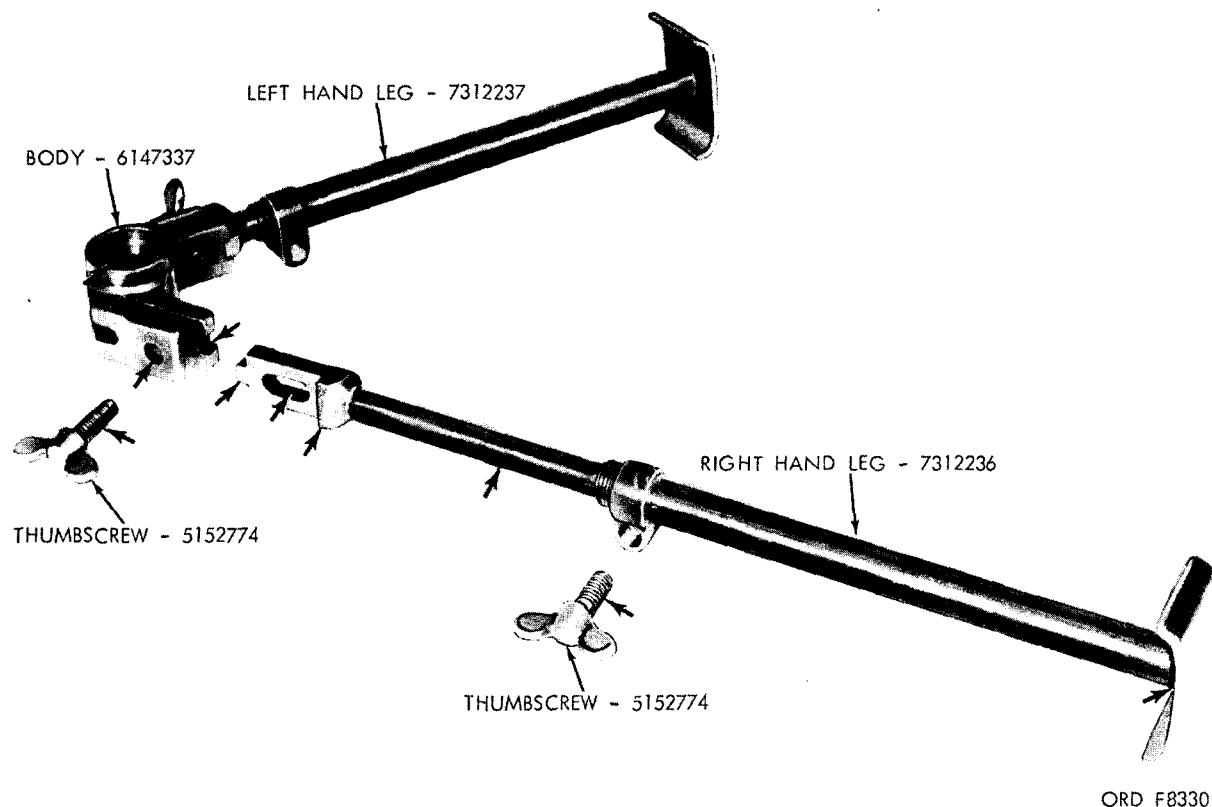


Figure 52. Bipod assembly—inspection points.

Section X. WINTER TRIGGER KIT

Note: The winter trigger kit is utilized during cold weather and arctic operations and only by authorization of the area commander.

79. Removal and Disassembly

- a. Remove winter trigger assembly as shown in figure 53.
- b. Remove winter safety same as change lever (17, fig. 17).
- c. No further disassembly is authorized.

80. Cleaning

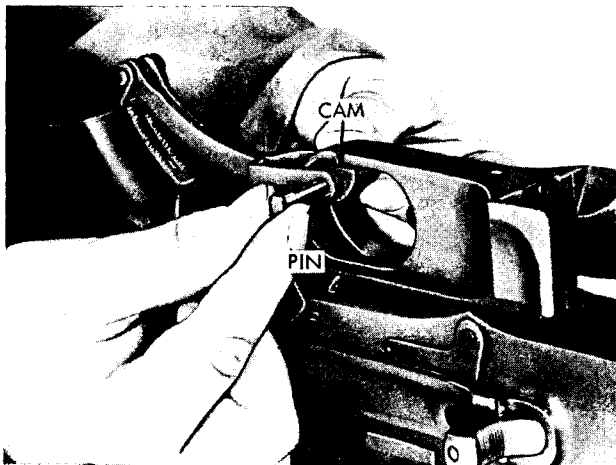
Refer to paragraph 18 for cleaning instructions.

81. Inspection and Repair

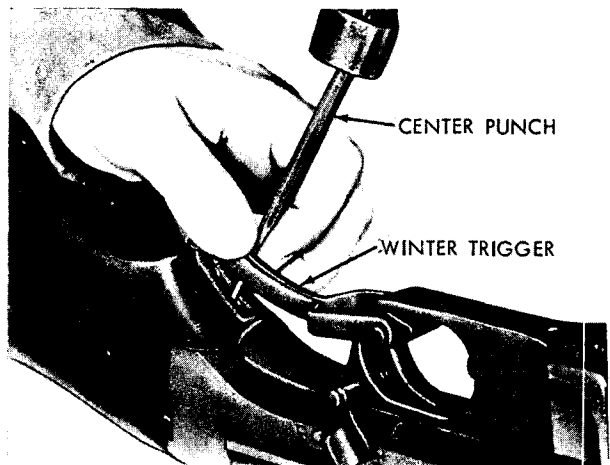
- a. Inspect screws and washers for wear and damage. Inspect hinge and lever for being bent and distorted. Replace worn screws and washers.
- b. Inspect winter safety for functioning and wear. Replace, if worn or damaged.

82. Installation and Assembly

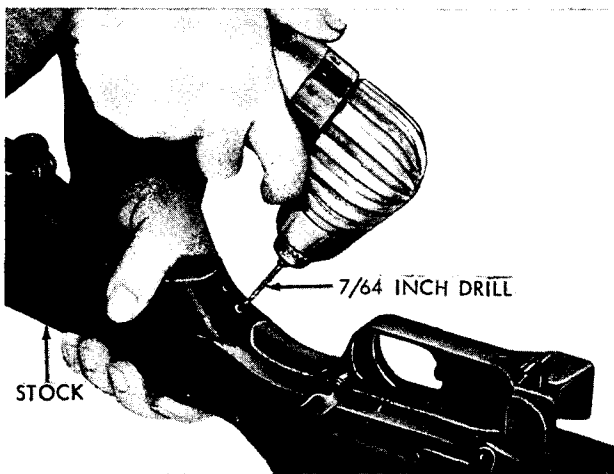
- a. Install winter safety same as change lever.
- b. Install winter trigger assembly as shown in figures 53 and 54.



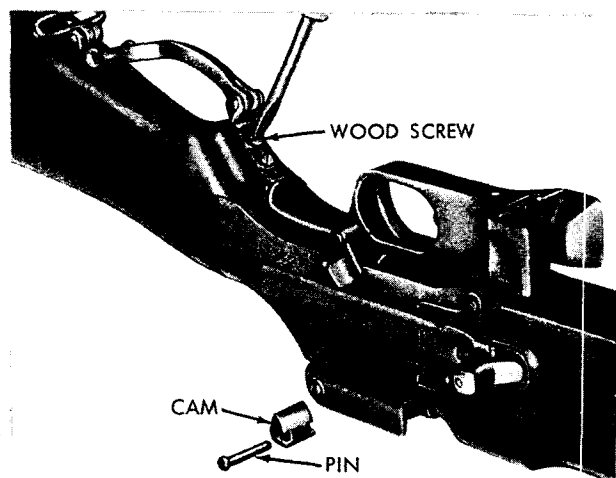
A - REMOVE/INSTALL CAM RETAINING PIN AND CAM.



B - POSITIONING WINTER TRIGGER ON STOCK AND MARKING LOCATION FOR DRILLING HOLES.



C - DRILLING HOLES IN STOCK.



D - REMOVE/INSTALL WOOD SCREWS.

ORD F8331

Figure 53. Remove/install winter trigger assembly.

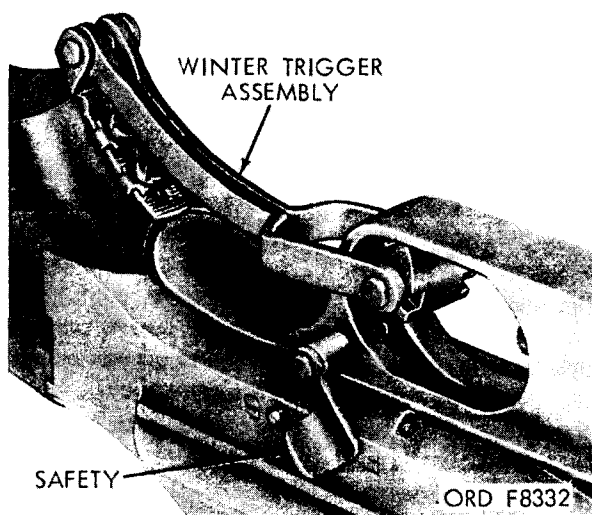


Figure 54. Winter trigger kit installed.

CHAPTER 6

FINAL INSPECTION

83. General

Rifles turned in for repair have defects caused by use or neglect. When these rifles were manufactured, the parts were dimensionally correct and made of the proper material. The inspection of these guns after repair will differ from the inspection procedures used in the manufacturing plant as attention will be directed to the tolerances allowed for wearing surfaces to parts that might crack or break due to high stress or fatigue, and to evidences of corrosion. These defects do not evidence themselves by uniform reduction in a given dimension but appear as a chipped edge, a partially worn surface or an eccentric hole. A gage used is merely a means of checking parts to judge if a component comes within tolerances. After a component is worn through usage, the change in dimension is more easily detected in many cases by comparing with adjacent surfaces. Visual inspection is far more applicable in these cases and gaging is limited to those dimensions that are critical or that may be more advantageously measured than repaired. Inspection of noncritical parts (parts that do not ordinarily cause malfunctions) will be limited to appearance and the presence of cracks or flaws. The dimensions and tolerances placed on these parts were for the sole purpose of insuring interchangeability. Even if the dimensions are worn considerably, functioning and interchangeability will not be adversely affected and the parts are consequently acceptable as applicable. The material must meet the limits of serviceability as indicated by the repair standards in paragraphs 85 and 86. Rifles that have been repaired should be function fired (para. 22) whenever possible to assure proper operation.

84. Specific Inspection Procedures

a. *Visual Inspection.* Visual and overall

appearance of the rifle should indicate a complete serviceable weapon. All exposed metal surfaces are to have a dull, rust resistant finish with no burs or deep scratches. Barrels must be straight, clean, free of rust and powder fouling, and free of bulges and rings. Rifles must be complete. All modifications must be applied. Serial numbers must be legible and all parts must be free of rust. Visually inspect the following:

- (1) Check gas cylinder and fore end group; make certain it is secure to barrel and receiver with the gas cylinder tube retaining pin.
- (2) Inspect trigger guard assembly; see that it fits firmly within receiver and is secured by the trigger guard retaining pin.
- (3) Inspect bipod for secure installation to flash hider bearing and that the flash hider is secured to the barrel.
- (4) Inspect the hinged butt plate assembly for fit on stock.
- (5) Inspect the rear sight for fit on rear sight base.

b. *Functional Inspection.*

- (1) Check rifle for smoothness of operation. Function magazine catch and follower. Check functioning of magazine, using dummy cartridges.
- (2) Actuate the operating handle; make certain slide and piston and bolt group actuate within receiver.
- (3) Inspect rear sight assembly; be sure the leaf can be raised or lowered without binding and the elevation and windage knobs function properly. Make certain graduations are legible.
- (4) Check functioning of legs on bipod assembly.

c. *Gage Inspection.*

- (1) Check inside diameter of gas cylinder body (para. 32b(2)(f)).

- (2) Check trigger pull (para. 42).
- (3) Check diameter of gas piston head (para. 47c(2)).

- (4) Check breechbore (para 64a(3)(a)).
- (5) Check headspace (para. 64a(3)(b)).

CHAPTER 7

REPAIR STANDARDS

85. General

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

86. Specific

a. Gas Cylinder and Fore End Group (para. 32).

<i>Fig. No.</i>	<i>Illustration</i>	<i>Point of measurement</i>	<i>Repair standards</i>	
			<i>Minimum</i>	<i>Maximum</i>
14		Inside diameter of gas cylinder body	---	0.503 inch

b. Trigger Guard Assembly (para. 42).

<i>Fig. No.</i>	<i>Illustration</i>	<i>Point of measurement</i>	<i>Repair standards</i>	
			<i>Minimum</i>	<i>Maximum</i>
21		Trigger	6 lbs.	10 lbs.

c. Slide and Piston Group (para. 47c(2)).

<i>Fig. No.</i>	<i>Illustration</i>	<i>Point of measurement</i>	<i>Repair standards</i>	
			<i>Minimum</i>	<i>Maximum</i>
26		Diameter of gas piston head	0.494 inch	---

d. Barrel and Receiver Group (para. 64a(3)).

<i>Fig. No.</i>	<i>Illustration</i>	<i>Point of measurement</i>	<i>Repair standards</i>	
			<i>Minimum</i>	<i>Maximum</i>
44		Gaging headspace	1.940 inch	1.950 inch
43		Breechbore	---	0.310 inch

CHAPTER 8

OVERHAUL PROCEDURES

87. General

Overhaul procedures are similar to those pertaining to direct and general support maintenance which are contained in chapter 5. Repair parts are listed in TM 9-1005-208-35P. For further details on

overhaul of the rifle contact Commanding General, Headquarters, U.S. Army Weapons Command, Attn: AMSWE-SMM-SA, Rock Island Arsenal, Rock Island, Illinois 61202.

CHAPTER 9

PREPARATION AND SHIPPING INSTRUCTIONS

88. Preparation

a. Cleaning. All parts are to be thoroughly cleaned. Surfaces of parts subjected to burned powder residue will be cleaned with solvent cleaning compound (PD 126) conforming to specification MIL-C-372.

b. Preservation. All metal surfaces shall be coated with a preservative oil. Fore end will be coated with linseed oil.

c. Packaging. Each rifle will be individually wrapped in a heavy duty, grease proof paper. Make certain all protruding edges are cushioned, using several thicknesses of paper, prior to wrapping.

d. Packing. Pack five rifles in the original box, or container, or a suitable wooden box. Make certain the box is adequately blocked to prevent movement dur-

ing handling and shipping. After closure, apply 2 flat steel straps around the box.

89. Marking Instructions

Standard and precautional markings will be applied to boxes as prescribed in TM 9-200.

90. Shipping Instructions

a. Responsibility. When shipping rifles, the officer-in-charge of preparing the shipment will be responsible for properly processing the materiel for shipment, including the preparation of Army shipping documents.

b. Army Shipping Documents. Prepare all Army shipping documents in accordance with AR 725-50.

APPENDIX

REFERENCES

1. Publication Indexes

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

Index of Army motion pictures, film strips, slides, and phono-recordings.	DA Pam 108-1
Military Publications:	
Index of Administrative Publications -----	DA Pam 310-1
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 Manuals (types 4, 6, 7, 8 and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.	DA Pam 310-4
Index of Doctrinal, Training, and Organizational Publications.	DA Pam 310-3

2. Supply Manuals

The following supply manuals of the Department of the Army supply manuals pertain to this materiel.

Field and Depot Maintenance Repair Parts and Special Tool Lists for Rifle, Caliber .30, Automatic, M1918A2, Browning.	TM 9-1005-208-35P
Operator and Organizational Maintenance Repair Parts and Special Tool Lists for Rifle, Caliber .30, Automatic, Browning, M1918A2.	TM 9-1005-208-12P
Shop Set, Field Maintenance:	
Small Arms (4933-754-0664) (Line item 440682).	SM 9-4-4933-A13
Tool Kit, Small Arms Repairman's (4933-357-7770) (Line item 453995).	SM 9-4-4933-A07
Tool Set, Direct and General Support Maintenance, Basic Small Arms.	SM 9-4-4933-E04

3. Forms

The following form pertains to this materiel. DA Form 2028, Recommended changes to DA Technical Manual, Parts List or Supply Manual 7, 8 or 9.

4. Other Publications

a. *General.* The following explanatory publications contain information pertinent to this materiel and associated equipment.

Logistics (General):

Malfunctions Involving Ammunition and Explosives.	AR 700-1300-8
---	---------------

The Army Equipment Record System and Procedures -----	TM 38-750
Military Symbols -----	FM 21-30
Military Terms, Abbreviations, and Symbols:	
Authorized abbreviations and brevity codes -----	AR 320-50
Dictionary of United States Army Terms -----	AR 320-5
Military Training -----	FM 21-5
Techniques of Military Instruction -----	FM 21-6
Safety: Accident reporting and records -----	AR 385-40
<i>b. Inspection and Maintenance.</i>	
Browning automatic rifle, cal. .30, M1918A2 -----	FM 23-15
Field inspection and serviceability standards for small arms materiel.	TB ORD 587
Lubrication of Ordnance materiel -----	TM 9-273
Maintenance of Supplies and Equipment:	
Organizational, policies and responsibilities for maintenance operations.	AR 750-5
Command maintenance management inspections -----	AR 750-8
Issue of Supplies and Equipment:	
Requisitioning, receipts, and issue system -----	AR 725-50
<i>c. Shipment and Standby or Long-Term Storage.</i>	
General packaging instructions for Ordnance general supplies -----	TM 9-200

INDEX

	Paragraph	Page		Paragraph	Page
Actuator group (See Butt stock, buffer and actuator group)			Description -----	4c	3
Allocation, maintenance (See Maintenance allocation)			Disassembly -----	30	18
Barrel and receiver group:			Inspection and repair -----	32	18
Assembly -----	65	47	Installation -----	34	23
Cleaning -----	63	42	Removal -----	29	18
Description -----	4j	4	General, inspection procedures -----	13	11
Disassembly of barrel group -----	61	41	General, maintenance -----	16	14
Disassembly of receiver group -----	62	42	General repair methods -----	17	14
Inspection and repair -----	64	42	Inspection, final (See Final inspection)		
Installation -----	66	48	Inspection procedures:		
Removal of barrel group -----	60	41	General -----	13	11
Bipod assembly:			Materiel in the hands of troops in the field -----	14	11
Assembly -----	77	51	Ordnance shop -----	15	12
Cleaning -----	75	51	Inspection, scope (See Scope of inspection)		
Description -----	4h	4	Inspections:		
Disassembly -----	74	51	Categories -----	12	10
Inspection and repair -----	76	51	Purpose -----	11	10
Installation -----	78	51	Scope -----	10	10
Removal -----	73	51	Instructions, marking (See Marking instructions)		
Bolt group:			Lubrication -----	21	15
Assembly -----	54	34	Magazine:		
Cleaning -----	52	33	Assembly -----	27	16
Description -----	4f	4	Cleaning -----	25	16
Disassembly -----	51	33	Description -----	4b	3
Inspection and repair -----	53	33	Disassembly -----	24	16
Installation -----	55	34	Inspection and repair -----	26	16
Removal -----	50	33	Installation -----	28	16
Buffer and actuator group (See Butt stock, buffer and actuator group)			Removal -----	23	16
Burs from threads, removal -----	20	15	Maintenance allocation -----	2	2
Butt stock, buffer and actuator group:			Maintenance, general (See General maintenance)		
Assembly and installation -----	59	39	Maintenance parts -----	7	6
Cleaning -----	57	36	Manual, scope of (See Scope of manual)		
Description -----	4g	4	Marking instructions -----	89	59
Inspection and repair -----	58	36	Overhaul procedures -----	87	58
Removal and disassembly -----	56	36	Parts, maintenance (See Maintenance parts)		
Categories of inspection -----	12	10	Piston group (See Slide and piston group)		
Checking trigger pull -----	42	28	Preparation and shipping instructions:		
Cleaning -----	18	14	Marking instructions -----	89	59
Common tools and equipment -----	8	6	Preparation -----	88	59
Data, tabulated (See Tabulated data)			Shipping -----	90	59
Description -----	4	3	Preparation instructions -----	88	59
Final inspection:			Procedures, overhaul (See Overhaul procedures)		
General -----	83	55	Purpose of inspection -----	11	10
Specific procedures -----	84	55	Rear sight assembly:		
Finished surfaces -----	19	15	Assembly -----	71	49
Firing, function (See Function firing)			Cleaning -----	69	49
Fore end group (See Gas cylinder and fore end group)			Description -----	4i	4
Forms, records, and reports -----	3	2	Disassembly -----	68	49
Functional check -----	40	27	Inspection and repair -----	70	49
Function firing -----	22	15	Installation -----	72	49
Gage inspection -----	84c	55	Removal -----	67	49
Gas cylinder and fore end group:					
Assembly -----	33	23			
Cleaning -----	31	18			

	Paragraph	Page
Receiver group (See Barrel and receiver group)		
Records, and reports, forms (See Forms, records and reports)		
Removal of burrs from threads, screw-heads, and working surfaces -----	20	15
Repair methods, general (See General repair methods)		
Repair standards:		
General -----	85	57
Specific -----	86	57
Scope of inspection-----	10	10
Scope of manual -----	1	2
Shipping instructions-----	90	59
Slide and piston group:		
Assembly-----	48	33
Cleaning-----	46	24
Description -----	4e	4
Disassembly -----	45	29
Inspection and repair -----	47	29
Installation -----	49	33
Removal-----	44	29
Special tools and equipment -----	9	6
Specific inspection procedures -----	84	55
Standards, repair (See Repair standards)		
Surfaces, finished (See Finished surfaces)		

	Paragraph	Page
Tables:		
Special Tools and Equipment (table 1) -----	9	6
Troubleshooting (table 2) -----	15	12
Tabulated data-----	5	4
Tools and equipment:		
Common-----	8	6
General -----	6	6
Special -----	9	6
Trigger guard assembly:		
Assembly-----	39	27
Cleaning-----	37	25
Checking trigger pull -----	42	28
Correcting trigger pull-----	43	28
Description-----	4d	4
Disassembly -----	36	23
Functional check -----	40	27
Inspection and repair -----	38	25
Installation -----	41	28
Removal-----	35	23
Trigger pull:		
Checking -----	42	28
Correcting-----	43	28
Winter trigger kit:		
Cleaning-----	80	53
Inspection and repair -----	81	53
Installation and assembly-----	82	53
Removal and disassembly -----	79	53

By Order of Secretary of the Army:

HAROLD K. JOHNSON,
*General, United States Army,
Chief of Staff.*

Official:

J. C. LAMBERT,
*Major General, United States Army,
The Adjutant General.*

Distribution:

Active Army:

USASA (2)
DCSLOG (1)
CNGB (1)
OCC-E (1)
CofEngrs (1)
TSG (1)
USAOCD (2)
USAATBD (3)
USCONARC (3)
USAMC (5)
USAWECOM (70)
USAMICOM (2)
USAMUCOM (2)
USAECEOM (2)
USAMOCOM (2)
USASMCOM (2)
USATECOM (2)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (2) except
 USAREUR (3)
 USARJ (3)
OS Base Comd (2)
LOGCOMD (2)
MDW (2)
Armies (3) except
 Sixth (1)

Corps (2)
Div (2)
Bde (2)
Regt/Gp/BG (2)
Bn (2)
Co/Btry (1) except
 Ord Co (2)
Instl (2) except
 Ft Meade (3)
GENDEP (OS) (1)
Ord Sec GENDEP (OS) (1)
Ord Dep (OS) (2)
A Dep (2) except
 Lexington (3)
 Tooele (12)
Svc Colleges (2)
Br Svc Sch (2) except
 USA Ord Sch (50)
Army Tml (2)
POE (2)
USAOA (1)
Springfield Armory (2)
Arsenals (5)
USA Corps (2)
Proc Dist (2)
Mis Msn (1)
Cen (2)

NG: State AG (3); Units—Same as Active Army except allowance is one copy.

USAR. Same as Active Army except allowance is one copy to each unit.

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