*TM 9-1005-222-35

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Technical Manual

No. 9-1005-222-35

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HEADQUARTERS DEPARTMENT OF THE ARMY Washington, D. C., 14 February 1966

RIFLE, CALIBER .30, M1, M1C (SNIPER'S) AND M1D (SNIPER'S)

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*This manual supersedes TM 9-1005-222-35P, 20 September 1961.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual is published for the information and guidance of personnel responsible for direct support, general support, and depot maintenance of the caliber .30 rifles Ml, M1C (Sniper's) and M1D (Sniper's).

b. TM 9-1005-222-12P/2 contains a list of repair parts and special tools allocated to using organizations. FM 23-5 contains operating and lubricating instructions for the materiel.

c. Use DA Form 2028 for reporting errors, omissions and recommendations for improvement and forward direct to:

> Commanding General Headquarters U.S. Army Weapons Command ATTN: AMSWE-SMM-P

Rock Island Arsenal Rock Island, Illinois 61201

1-2. Maintenance Allocation

See TM 9-1005-222-12P/2.

1-3. Forms, Records, and Reports

a. Authorized Forms. Refer to DA Pam 310-2 and TM 38-750.

- b. Reports of Accidents.
 - (1) Injury to personnel or damage to materiel. Refer to AR 385-40.
 - (2) Ammunition, accidents and malfunctions. Refer to AR 700-1300-8.

c. Report of Unsatisfactory Equipment or Materials. Refer to TM 38-750.

Section II. DESCRIPTION AND DATA

1-4. Description

The rifles M1, M1C (Sniper's) and M1D (Sniper's) (figs. 1-1, 1-3 and 1-5) are gasoperated, clip-fed, air-cooled, semiautomatic shoulder weapons. The rifles are designed to accommodate either bayonetknife M5 or M5A1, the grenade launcher M7A3 and grenade launcher sight M15 and winter trigger kit (fig. 1-7). For convenience of maintenance and repair, the rifles are divided into groups and assemblies as indicated in figures 1-2, 1-4 and 1-6.

1-5. Tabulated Data

Data necessary for direct, general support, and depot maintenance are listed below.

a. Rifle M1.

Trigger pull, maximum - - - - - - 7.5 lb Trigger pull, minimum - - - - 5.5 lb

b. Rifle M1C (Sniper's) and M1D (Sniper's).

Trigger pull, maximum - - - - - - 6.5 lb Trigger pull, minimum - - - - - 4.5 lb

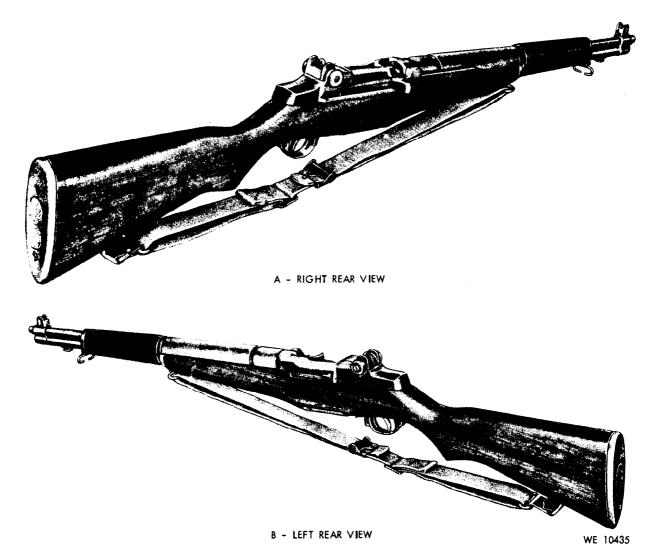


Figure 1-1. Caliber .30 rifle M1 - left and right rear views.

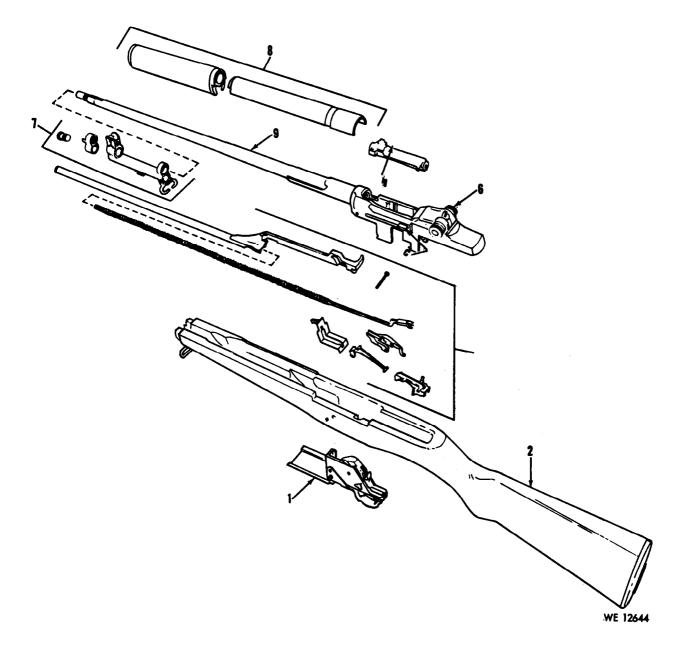


Figure 1-2. Caliber .30 rifle M1, M1C (Sniper's) and M1D (Sniper's) - major groups and assemblies.

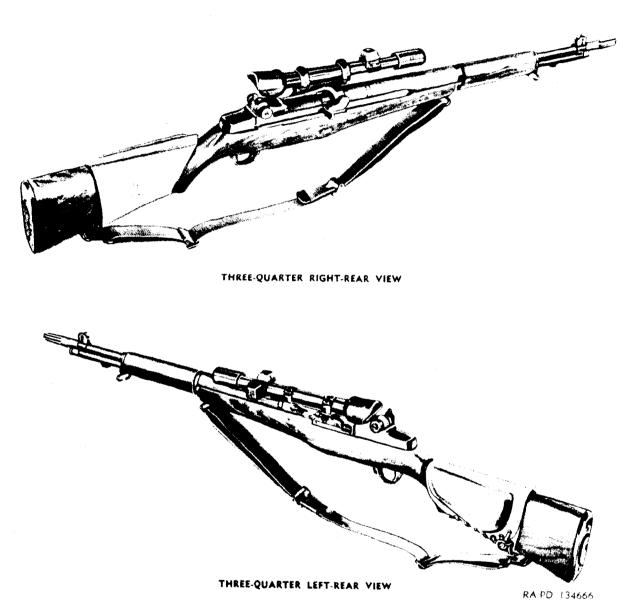


Figure 1-3. Caliber .30 rifle M1C (Sniper's) - left and right rear views.

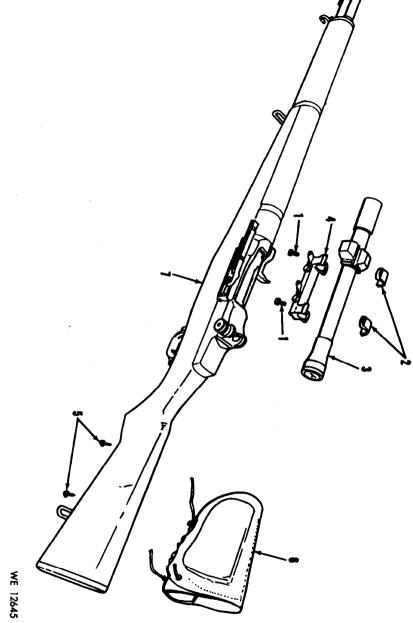
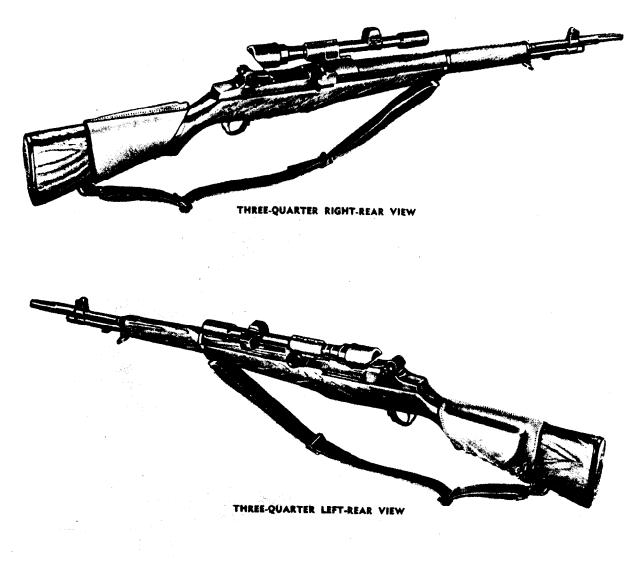


Figure 1-4. Caliber .30 rifle MIC (Sniper's) - major groups and assemblies.

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RA PD 134667

Figure 1-5. Caliber .30 rifle M1D (Sniper's) - left and right rear views.

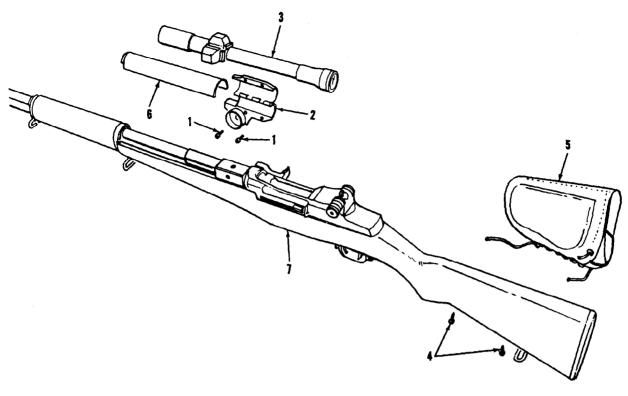


Figure 1-6. Caliber .30 rifle M1D (Sniper's) - major groups and assemblies.

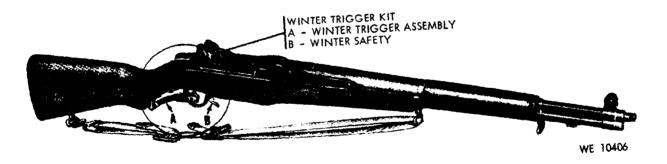


Figure 1-7. Caliber .30 rifle M1 with winter trigger kit installed - right front view.

CHAPTER 2

PARTS, SPECIAL TOOLS, AND EQUIPMENT

2-1. Repair Parts

Refer to appendix II.

2-2. Common Tools

Standard and common tools are author-

ized by tables of allowances and tables of organization and equipment.

2-3. Special Tools and Equipment

Refer to appendix II.

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CHAPTER 3 INSPECTIONS

3-1. General

Warning: Before inspection, determine that the weapon is pointed in a safe direction, that live rounds or obstructions are NOT present in the bore or chamber, and that the ammunition is not in position to be loaded. Do not pull the trigger until the weapon has been cleared.

Make an overall inspection of the weapons for appearance, condition, and operation. Manually function, using dummy cartridges.

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

- a. General. Refer to AR 750-8.
- b. Specific.
 - (1) Inspect parts for wear that would impair functioning of weapons.

(2) Check to be certain that all cleaning and preservative materials, authorized by pertinent manuals, are available.

3–3. Inspection of Materiel to Accompany Troops Overseas

a. General. 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.

b. Specific. Refer to table 3-1 for serviceability standards.

Table 3-1. Serviceability Standards for Rifle, Caliber .30, M1, M1C (Sniper's) and M1D (Sniper's)

Item	In the hands of troops	To accompany troops oversea		
Headspace (fig. 5-35)	Maximum 1.950	Maximum 1.950		
	BOLT, FIELD TEST 6046302	BOLT, FIELD TEST 6046302.		
Breech bore (fig. 5-31)	GAGE, BREECH BORE 5564343			
	Maximum 0.310	Maximum 0.306		
Gas cylinder diameter	GAGE, PLUG, GAS CYLINDER	GAGE, PLUG, GAS CYLINDER		
(fig. 5–23).	DIAMETER 7319919.	DIAMETER 7319919.		
	Shoulder of gage must be flush or above			
Barrel diameter (fig. 5-32)	GAGE, RING, PLAIN, No-go 7319918_	GAGE, RING, PLAIN, No-go 7319918.		
	Minimum 0.5991	Minimum 0.5991		
Piston diameter (fig. 5-14)	GAGE, SNAP, PLAIN, ADJUSTABLE 7319911.	GAGE, SNAP, PLAIN, ADJUSTABLE 7319911.		
	Minimum 0.525	Minimum 0.525		
Firing pin protrusion (fig. 5-17).	GAGE, FIRING PIN PROTRUSION 7274736.	GAGE, FIRING PIN PROTRUSION 7274736.		
	Minimum 0.044	Minimum 0.044		
	Maximum 0.060	Maximum 0.060		
Timing (fig. 5-36)	GAGE, TIMING 7319920	GAGE, TIMING 7319920.		
	Bolt must release when bottom notch in gage is flush or below.	Bolt must release when bottom notch in gage is flush or below.		
Trigger pull (fig. 5-5)	FIXTURE, MEASURING, TRIGGER	FIXTURE, MEASURING, TRIGGER		
	PULL 7274758.	PULL 7274758.		
	M1	M 1		
	Minimum 5.5 lbs	Minimum 5.5 lbs.		
	Maximum 7.5 lbs	Maximum 7.5 lbs.		
	M1C—M1D	M1C—M1D		
	Minimum 4.5 lbs	Minimum 4.5 lbs.		
	Maximum 6.5 lbs	Maximum 6.5 lbs.		
Firing pin cam location	GAGE, RECEIVER 7799709			
(fig. 5-34).	Plug positioned flush or below			

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CHAPTER 4

TROUBLESHOOTING AND GENERAL MAINTENANCE

4-1. Troubleshooting

Refer to table 4-1.

Table 4-1. Troubleshooting

Malfunction	Probable cause	Corrective action	
	RIFLE M1, M1C (Sniper's) AND M1D (Sniper's)		
Cartridge clip inserts with difficulty.	Deformed clip	Replace.	
	Broken ejector	Replace.	
	Interference between bullet guide and follower arm.	Replace bullet guide.	
Short recoil	Undersized or out of round operating rod piston.	Replace operating rod assembly.	
	Oversized gas cylinder	Replace.	
	Undersized barrel at gas port	Turn-in weapon for replacement.	
	Carbon in gas cylinder	Clean.	
	Carbon or foreign matter in gas port of barrel.	Clean.	
	Operating rod assembly binding	Replace operating rod assembly if damaged, or relieve wood from gun stock assembly, where operating rod binds on wood.	
	Leak in gas cylinder lock screw with valve_	Replace gas cylinder lock screw with valve.	
	Defective helical spring (operating rod)	Replace helical spring (operating rod).	
	Bolt binding	Remove burs from bolt.	
	Distorted or damaged receiver	Repair or turn in for replacement.	
Bolt fails to close tightly	Extractor does not open enough to pass over rim of cartridge.	Clean bolt assembly.	
	Operating rod assembly binding	Replace operating rod or relieve wood from stock assembly where operating rod binds on wood.	
	Weak or broken helical spring (operating rod).	Replace helical spring (operating rod).	
	Rust or dirt in chamber	Clean barrel chamber.	
	Damaged cartridge, or frozen ejector	Repair or replace ejector.	
	Damaged or deformed bolt and/or receiver_	Replace bolt or turn in weapon for replace- ment.	
	Insufficient headspace	Replace bolt assembly by selective fit or turn in weapon for replacement.	
Bolt does not release when clip is latched.	Insufficient radii on operating rod catch or operating rod hooks.	Repair or replace operating rod catch or operating rod assembly.	
	Bullet guide low at accelerator bearing point_	Replace.	
Bolt released before clip is latched.	Worn or broken clip latch	Replace.	
	Worn or broken helical spring (latch)	Replace helical spring (latch).	

Malfunction .	Probable cause	Corrective action	
	Excessive radii on operating rod catch or operating rod assem- bly.	Replace operating rod catch or operating rod assembly.	
	Bullet guide high at accelerator bearing point.	Replace.	
Bolt fails to be held rearward after firing last round of clip	Bolt does not move sufficiently rearward.	See short recoil.	
and clip held inside of rifle	Binding latch	Replace latch.	
jammed by bolt.	Arm or operating rod catch bent or deformed.	Replace operating rod assembly.	
Failure to eject cartridge case	Low power, causing short recoil	Correct short recoil malfunctions.	
	Weak, missing, or frozen helical spring (ejector).	Replace helical spring (ejector).	
	Ejector binds	Clean bolt ejector opening or re- move burs from ejector.	
	Short recoil	Clean gas port. Replace operating rod assembly or helical spring.	
Failure to eject cartridge clip	Clip ejector worn, weak, or broken.	Replace.	
	Operating rod catch deformed or broken.	Replace catch.	
Failure of bolt to open after firing	Plugged gas port	Clean.	
	Loose gas cylinder	Replace gas cylinder.	
	Barrel undersize at gas port area	Turn in weapon for replacement.	
	Gas cylinder lock screw with valve fails to close.	Replace.	
Failure to fire	Light indent on primer Inadequate firing pin protrusion	Replace helical spring (hammer). Replace.	
	Hammer spring housing damaged	Replace.	
Pressure on trigger does not release hammer.	Deformed trigger, pin, or ham- mer.	Replace defective trigger, pin or hammer.	
One or more live cartridges ejected with clip.	Operating rod assembly releases too soon when clip is inserted.	Replace operating rod catch and bullet guide.	
Operating rod assembly disen- gages from bolt while firing.	Worn operating rod lug or kinked helical spring (operating rod assembly).	Replace operating rod assembly or helical spring.	

4-2. Special Repair Methods

a. Parts or assemblies that connot be repaired or reclaimed will be replaced. Non-repairable assemblies may be disassembled and the serviceable parts returned to stock.

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

4-3. Cleaning

Refer to TM 9-247, TM 9-208-1 and TM 9-208-2.

CHAPTER 5 MAINTENANCE OF RIFLES

Section I. MAINTENANCE

Note. White arrows shown on illustrations indicate removal, black arrows indicate installation.

5-1. Maintenance Procedures Refer to table 5-1.

T			1	r	1
Major Item, Groups and Assemblies	Removal/ Installation	Disassembly/ Assembly	Inspect	Replace	Repair
Rifle, cal 30 M1		Fig. 1-2.	Figs. 5-5, 5-35, 5-36.	· · · · · · · · · · · · · · · · · · ·	Fig. 5-30.
Rifle, cal30 M1C(Sniper's)		Fig. 1-4.	Figs. 5-5, 5-35, 5-36.	Fig. 1-4 except items 1, 2, 4 and 7.	Fig. 5-30.
Rifle, cal30 M1D(Sniper's)		Fig. 1-6.	Figs. 5-5, 5-35, 5-36.	Fig. 1-6 except item 7.	Fig. 5-30.
Trigger housing assembly		Figs. 5-1 and 5-2.	Fig. 5-3.	Fig. 5-48 except item 11.	Fig. 5-4.
Stock assembly		Fig. 5-6.	Fig. 5-7.	Fig. 5-49 except items 1, 1D (1, thru 5) and 1E(4).	Figs. 5-9, 5-10, 5-42 and TB ORD 507.
Follower group		Fig. 5-11 and 5-12.	Figs. 5-13 and 5-14.	Fig. 5-50 except items 7, 9, and 10.	
Bolt assembly		Fig. 5-15	Figs. 5-16 and 5-17.	Fig. 5-51.	
Latch group Rear sight group		Fig. 5-18. Fig. 5-19.	Fig. 5-16.	Fig. 5–52. Fig. 5–53.	
Gas cylinder group		Figs. 5-20 and 5-21.	Figs. 5-22 and 5-23.	Fig. 5-54.	
Gun hand guard		Figs. 5-24 and 5-25.	Fig. 5-26.	Fig. 5–49.	Fig. 5-27.
Barrel and receiver groups		Fig. 5-28.	Figs. 5-29, 5-31, 5-32, 5-33, 5-34, and TB 9- 4933-202-30.		
Telescope mount assembly for rifle M1C (Sniper's)		Fig. 5-37.		Fig. 5-55 except items 2, 2A thru 2E, 3 and 4.	
Mounting bracket assembly for rifle M1D (Snipers)		Fig. 5-38.		Fig. 5–56.	
Cheek pad for rifles M1C, M1D(Sniper's)		Fig. 5-39.		Fig. 5-57.	
Grenade launcher M7A3		Fig. 5-40.		Retaining spring (fig. 5-40).	<i>Note.</i> Refer to TM 9-1005-234-14P for repair parts of

Major Item, Groups and Assemblies	Removal/ Installation	Disassembly/ Assembly	Inspect	Replace	Repair
Grenade launcher sight, M15	Figs. 5-41.	Fig. 5-43.		Fig. 5-43 except items 4, 7.	M7A3 launcher and M15 sight.
Bayonet-knife M5		Fig. 5–44.		Fig. 5-44 except Blade Assembly. (7266555).	Note. Refer to TM 9-1005-237-15P for repair parts of M5, M5A1 bayonet- knives.
Bayonet-knife M5A1		Fig. 5-45.		Fig. 5-45 except Blade Assembly.	
Winter trigger kit	Fig. 5-8.	Fig. B-1.		Fig. B-1 except item 1C.	
Scabbard- bayonet knife M8A1			Fig. 5-46.		
Sling M1			Fig. 5-47.		

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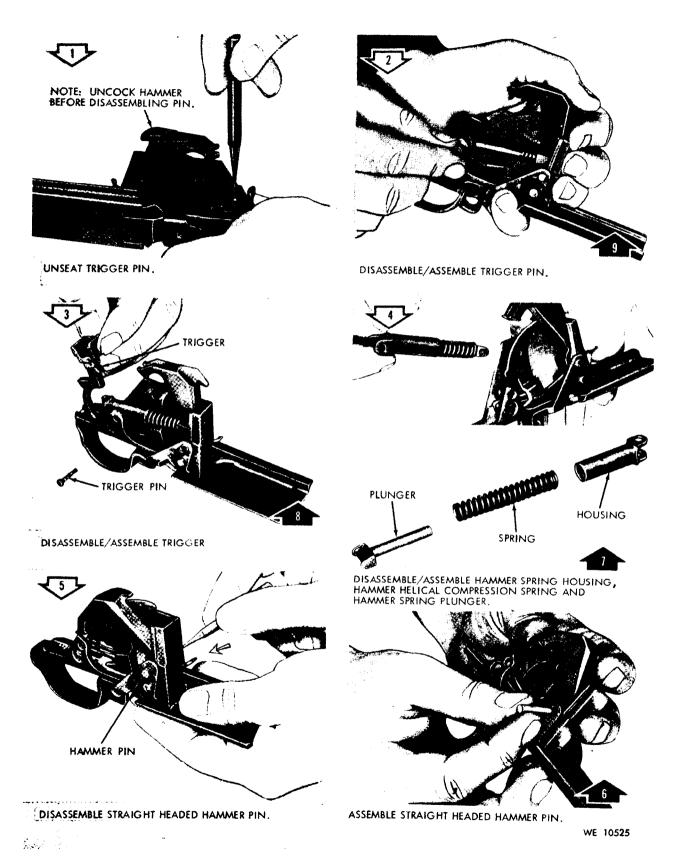


Figure 5-1. Disassembly/assembly of trigger housing assembly. (1 of 2)

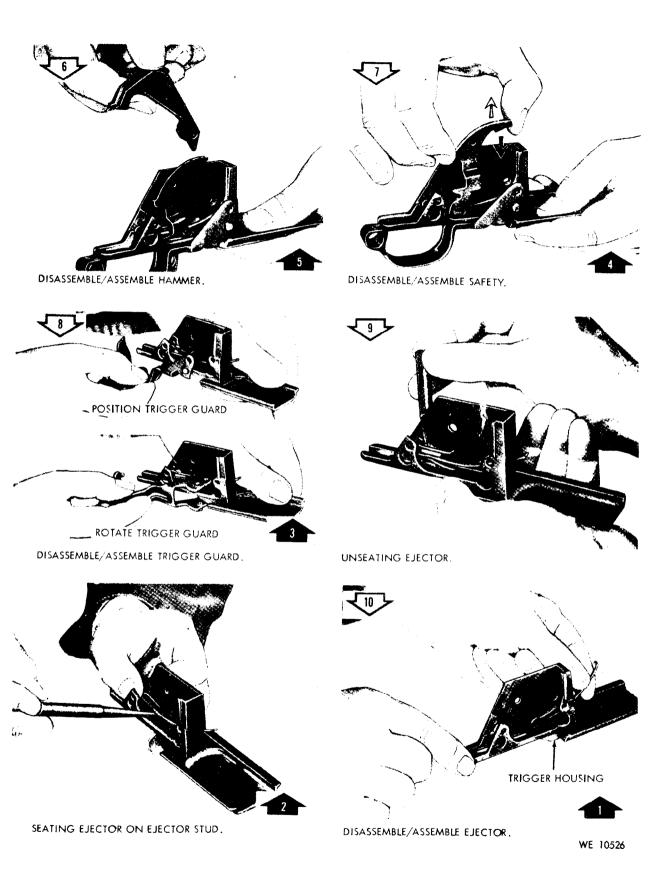


Figure 5-2. Disassembly/assembly of trigger housing assembly. (2 of 2)

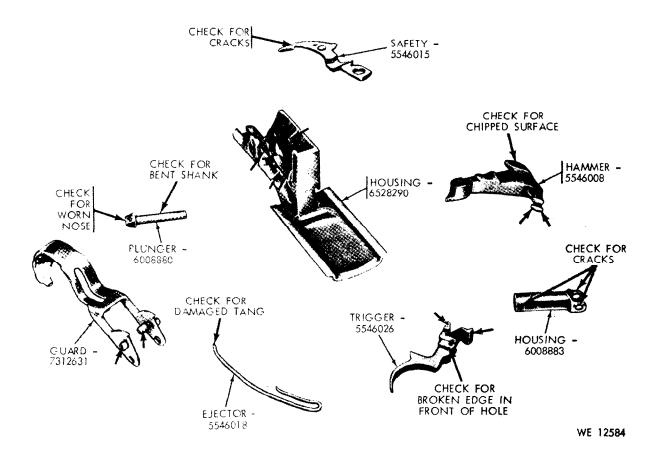


Figure 5-3. Inspection points of component parts of trigger housing assembly.

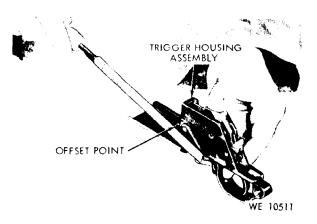
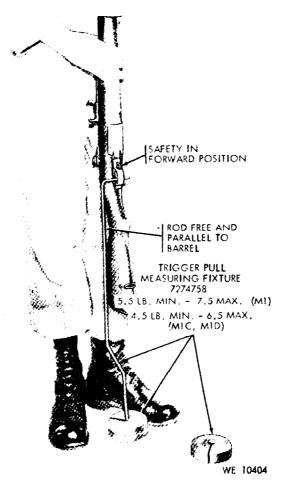


Figure 5-4. Filing offset point of ejector.



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Figure 5-5. Trigger pull test.

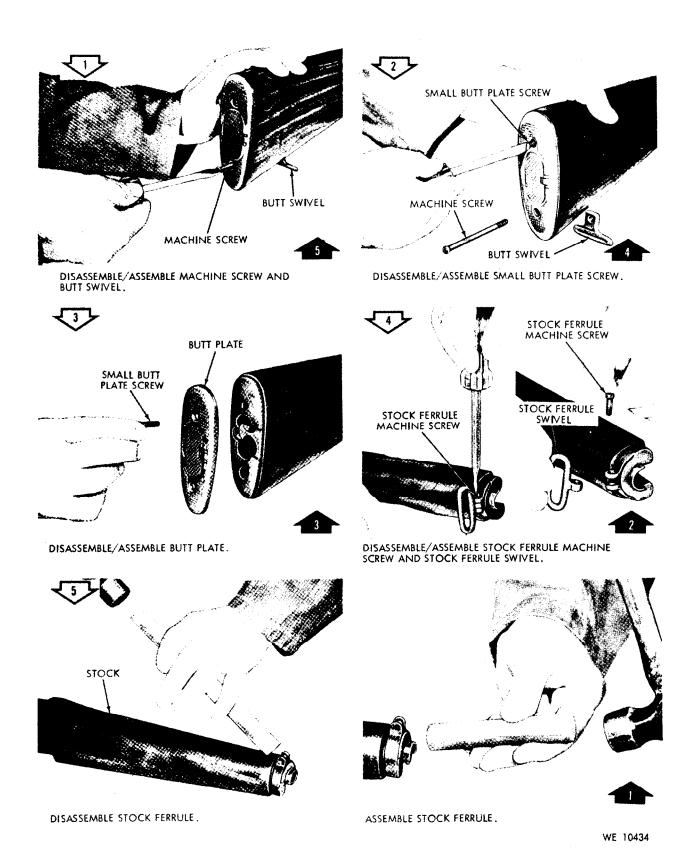
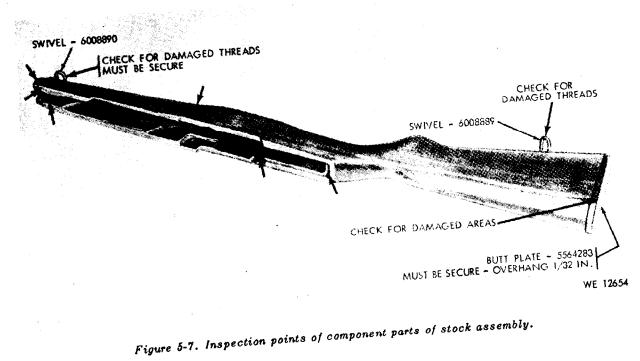


Figure 5-6. Disassembly/assembly cf stock assembly.



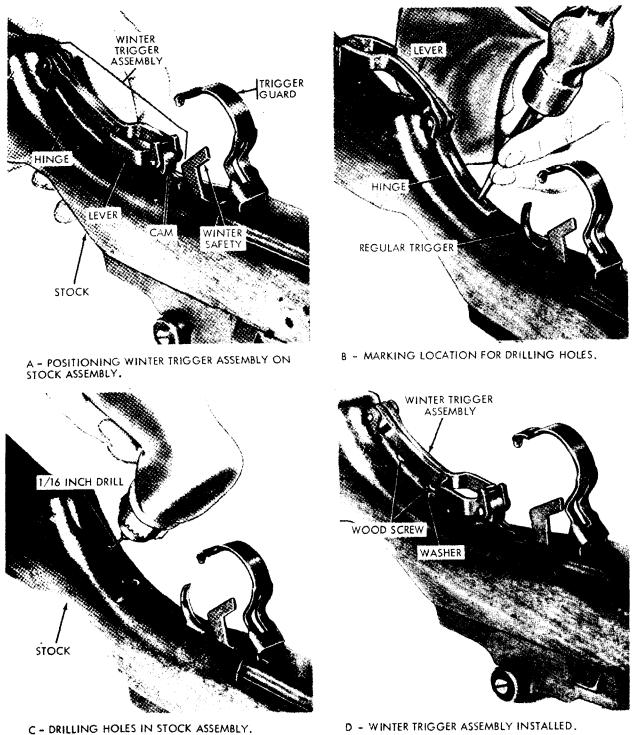


Figure 5-8. Procedures for installing winter trigger kit on stock assembly.

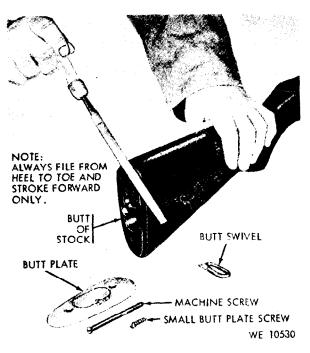
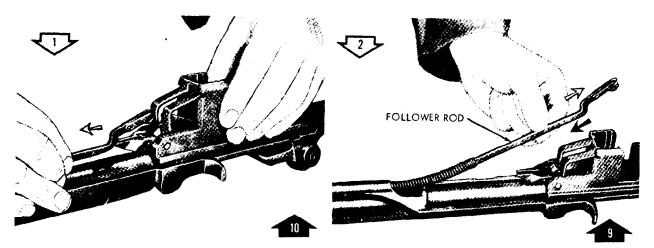


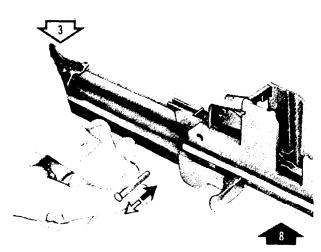
Figure 5-9. Fitting butt plate on stock assembly.



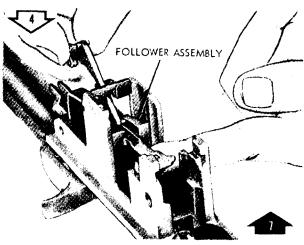
Figure 5-10. Correcting swelling in stock assembly.



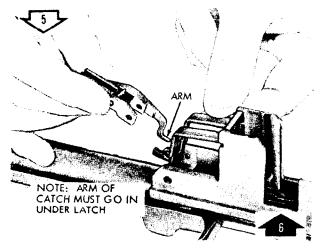
DISASSEMBLE/ASSEMBLE FOLLOWER ROD AND OPERATING ROD SPRING.



DISASSEMBLE/ASSEMBLE SHOULDER HEADED PIN.



DISASSEMBLE/ASSEMBLE FOLLOWER ARM.



DISASSEMBLE/ASSEMBLE OPERATING ROD CATCH.

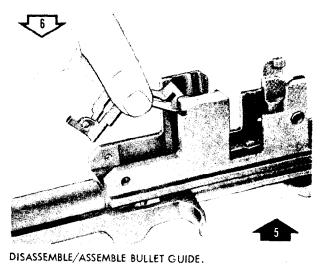
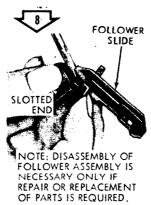


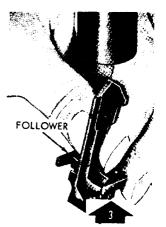
Figure 5-11. Disassembly/assembly of follower group. (1 of 2)



REMOVE/INSTALL FOLLOWER ASSEMBLY.

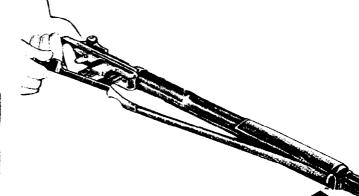


DISASSEMBLE FOLLOWER SLIDE FROM FOLLOWER.



ASSEMBLE FOLLOWER SLIDE ON FOLLOWER.





DISASSEMBLE/ASSEMBLE OPERATING ROD ASSEMBLY.



REMOVE/INSTALL BOLT ASSEMBLY.

WE 10446

Figure 5-12. Disassembly/assembly of follower group. (2 of 2)

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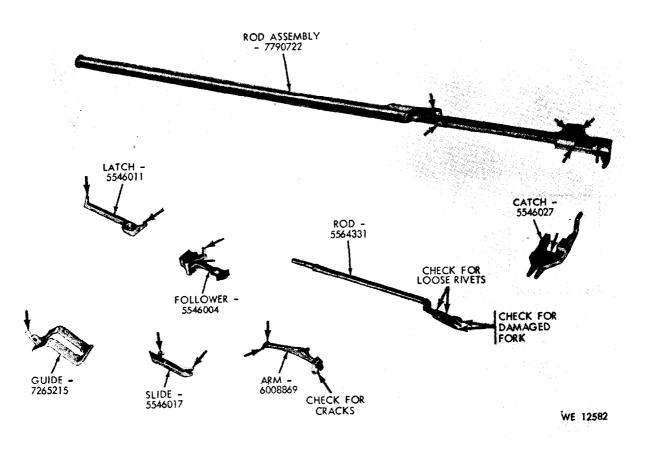


Figure 5-13. Inspection points of component parts of follower group.

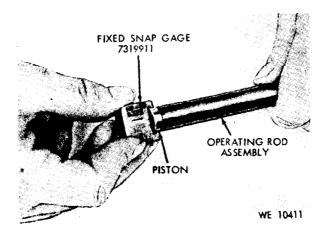


Figure 5-14. Gaging diameter of gas piston.

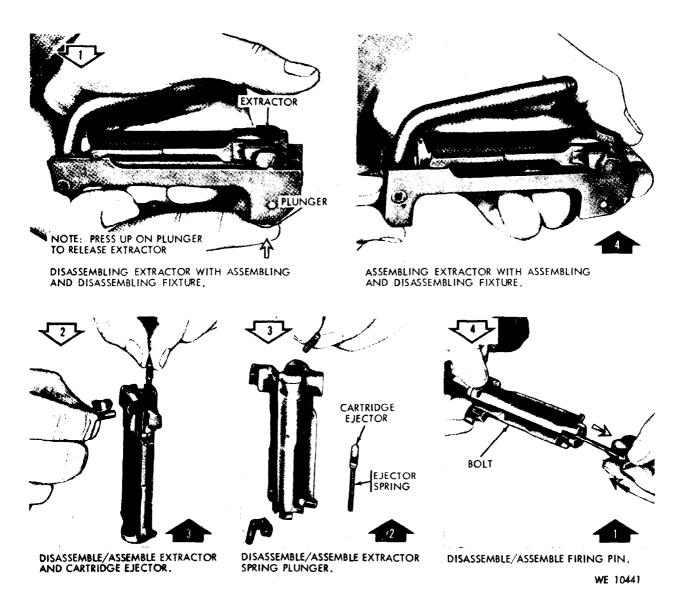


Figure 5-15. Disassembly/assembly of bolt assembly.

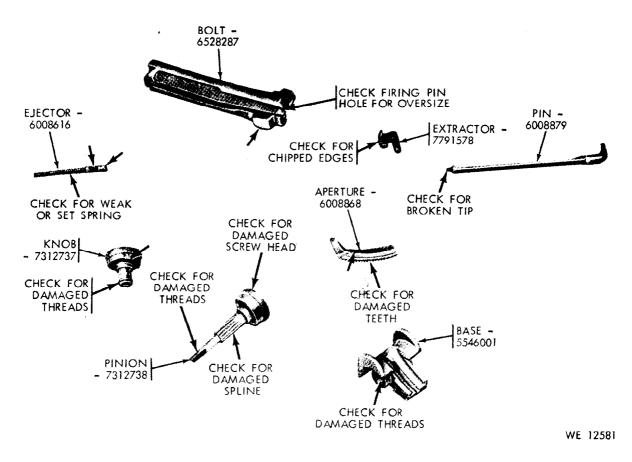


Figure 5-16. Inspection points of component parts of bolt assembly and rear sight group.

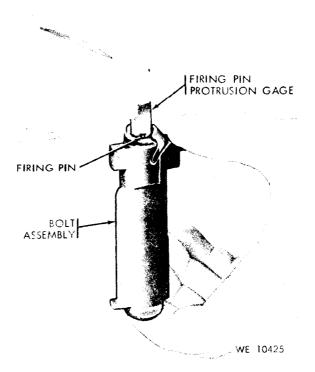
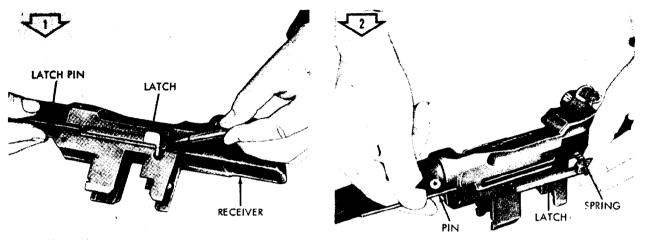


Figure 5-17. Gaging firing pin protrusion.



UNSEAT STRAIGHT HEADED LATCH PIN.

REMOVE LATCH PIN, LATCH AND HELICAL COMPRESSION SPRING.

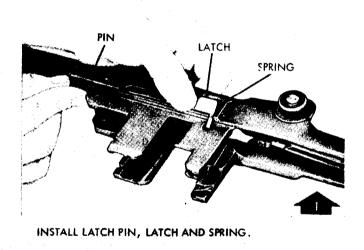
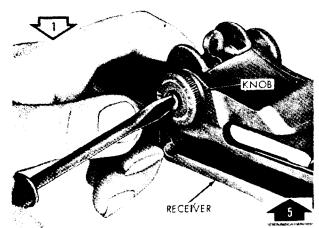
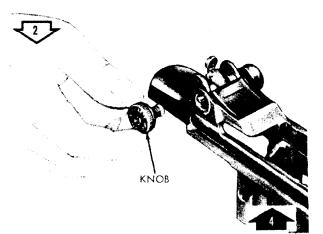


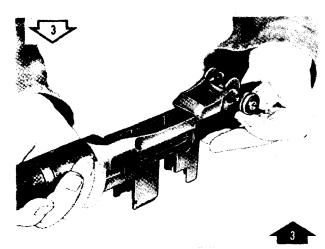
Figure 5-18. Disassembly/assembly of latch group.



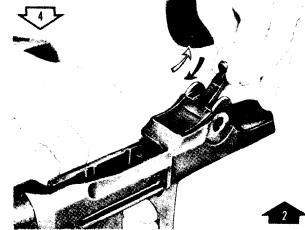
LOOSEN/TIGHTEN NUT.



DISASSEMBLE/ASSEMBLE WINDAGE KNOB.



DISASSEMBLE/ASSEMBLE ELEVATING PINION.



DISASSEMBLE/ASSEMBLE APERTURE .

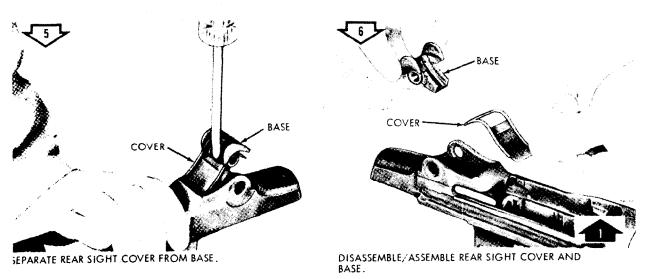
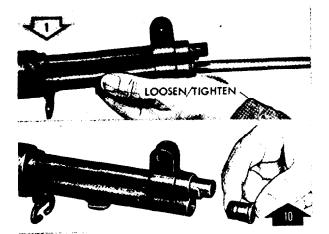
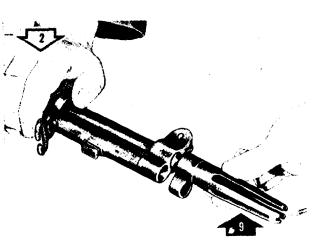


Figure 5-19. Disassembly/assembly of rear sight group.



DISASSEMBLE/ASSEMBLE GAS CYLINDER LOCK SCREW.



DISASSEMBLE/ASSEMBLE FLASH HIDER T37 FROM RIFLE MIC, MID.







BARREL

DISASSEMBLE/ASSEMBLE GAS CYLINDER LOCK.

GAS CYLINDER ASSEMBLY TO BARREL.

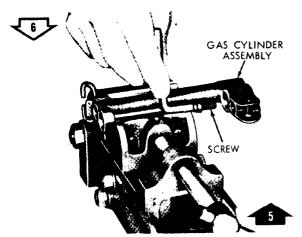
LOOSEN GAS CYLINDER ASSEMBLY FROM BARREL.



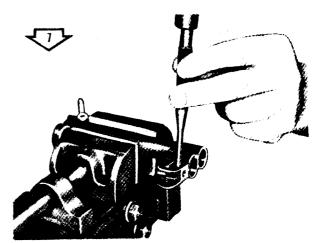
REMOVE/INSTALL GAS CYLINDER ASSEMBLY.

WE 10444

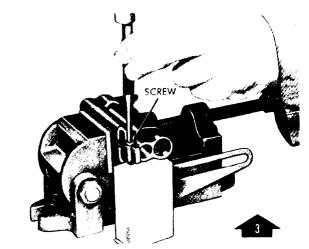
Figure 5-20. Disassembly/assembly of gas cylinder group. (1 of 2)



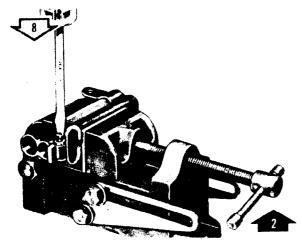
DISASSEMBLE/ASSEMBLE SOCKET HEAD SCREW.



DISASSEMBLE FRONT SIGHT.

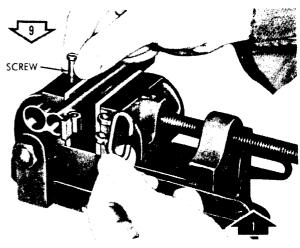


ASSEMBLE FRONT SIGHT.



DISASSEMBLE/ASSEMBLE STACKING SWIVEL SCREW.

STAKE STACKING SWIVEL SCREW.



DISASSEMBLE/ASSEMBLE STACKING SWIVEL.

Figure 5-21. Disassembly/assembly of gas cylinder group. (2 of 2)

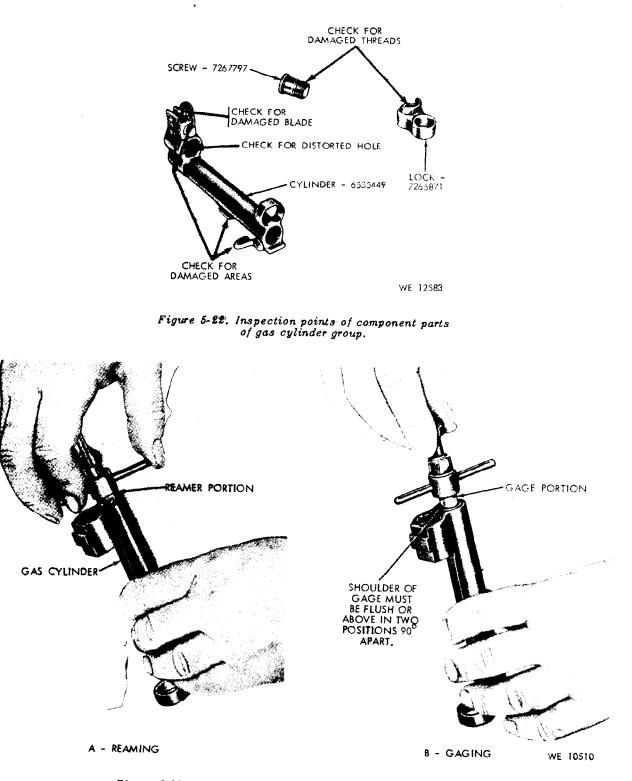
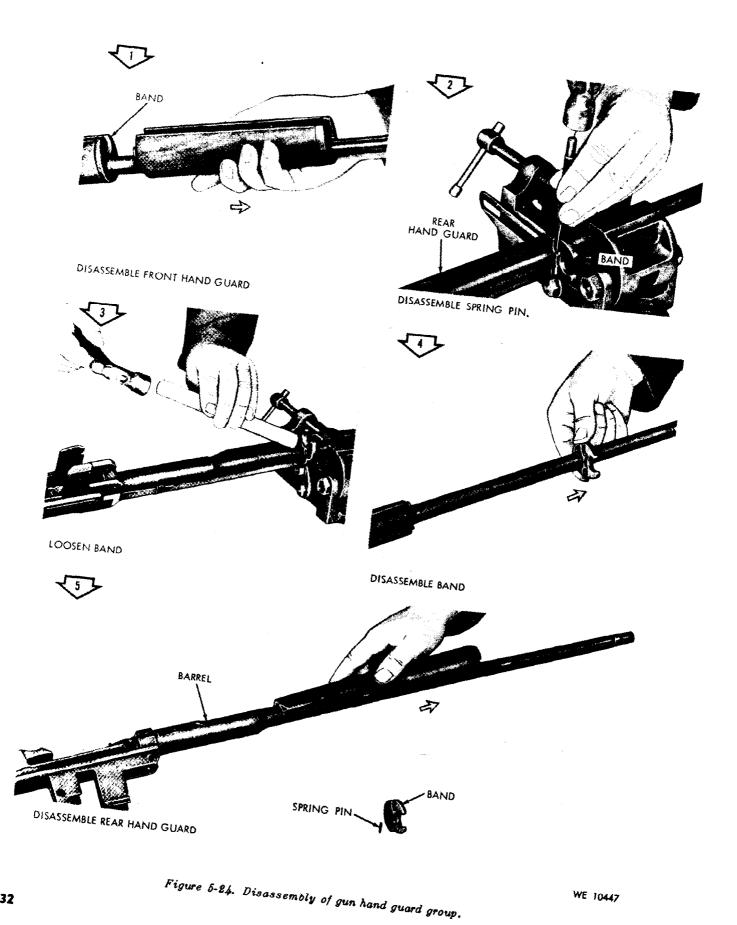
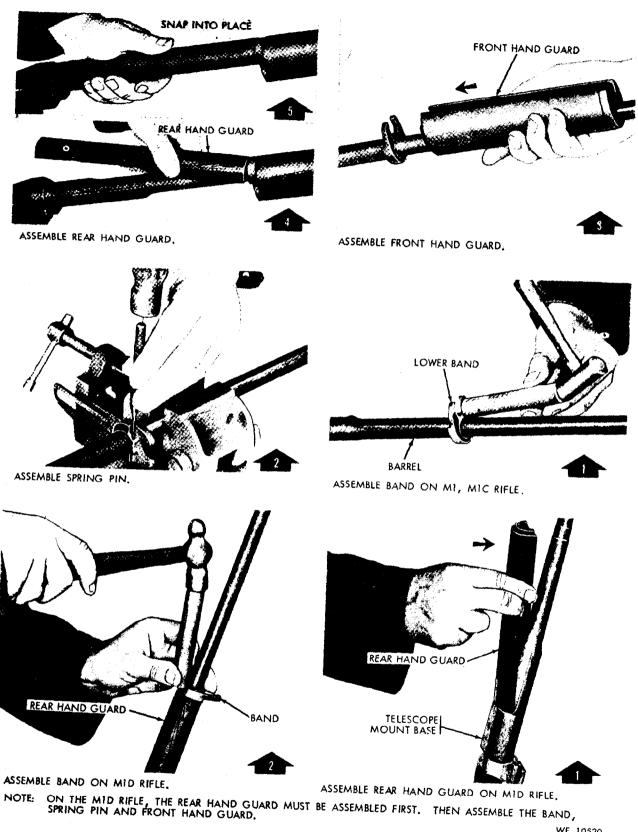
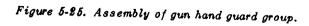


Figure 5-23. Use of gas cylinder diameter plug gage 7319919.







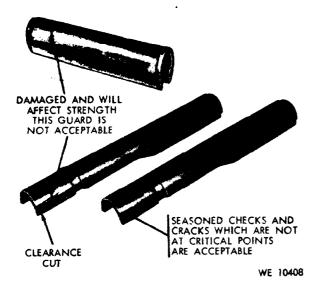


Figure 5-26. Gun hand guard defects and clearance cut for rifles.

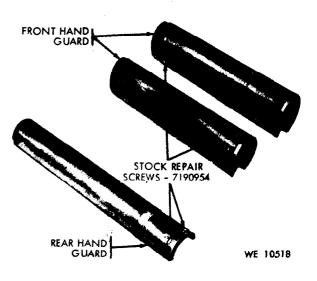


Figure 6-27. Repaired front and rear gun hand guards.

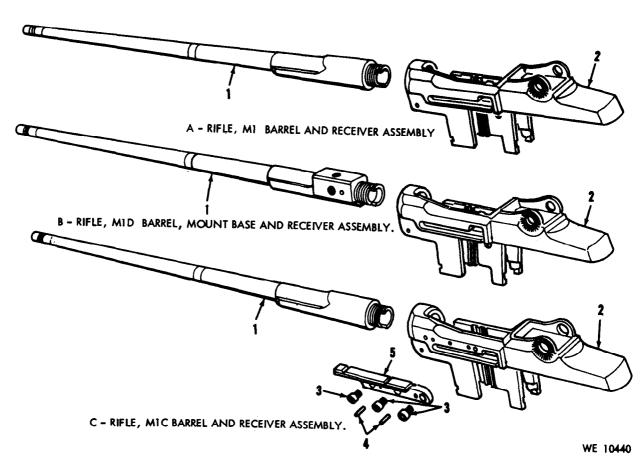


Figure 5-28. Barrel and receiver groups - exploded view.

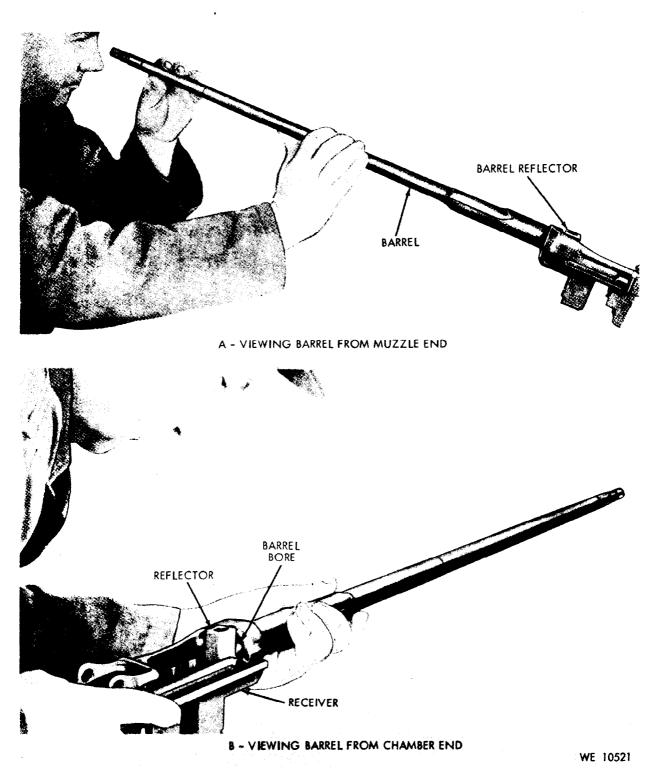


Figure 5-29. Inspection of barrel using barrel reflector.

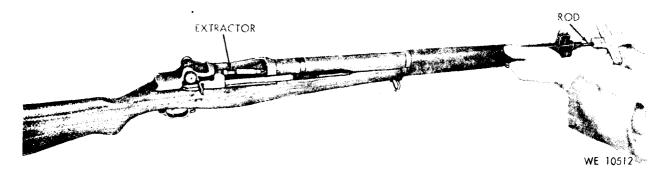


Figure 5-30. Removing ruptured cartridge case.

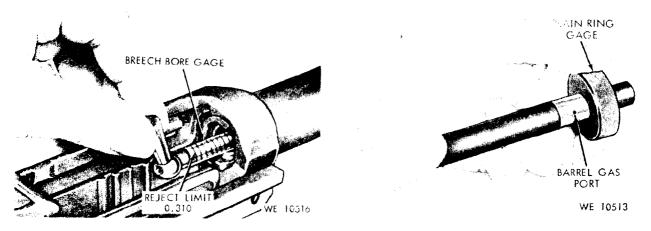


Figure 5-31. Gaging breech bore.

Figure 5-32. Gaging diameter of barrel at gas port.

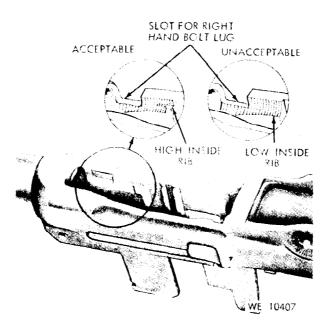


Figure 5-33. Checking contour of receiver rib.

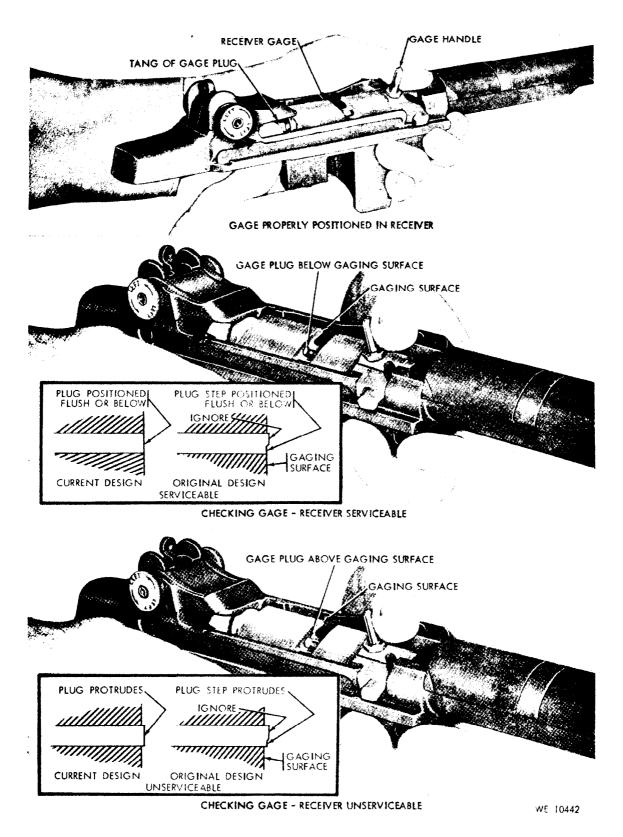


Figure 5-34. Procedures for gaging receiver, using gage 7799709.

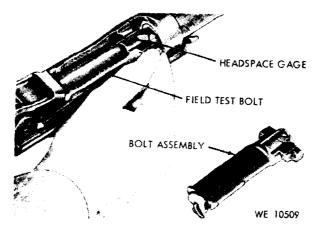


Figure 5-35. Gaging headspace of rifle.

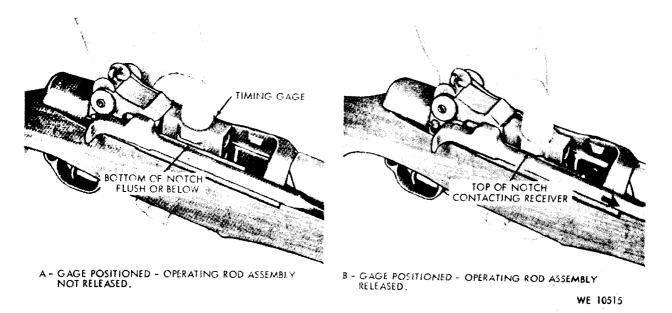


Figure 5-36. Timing the rifle.

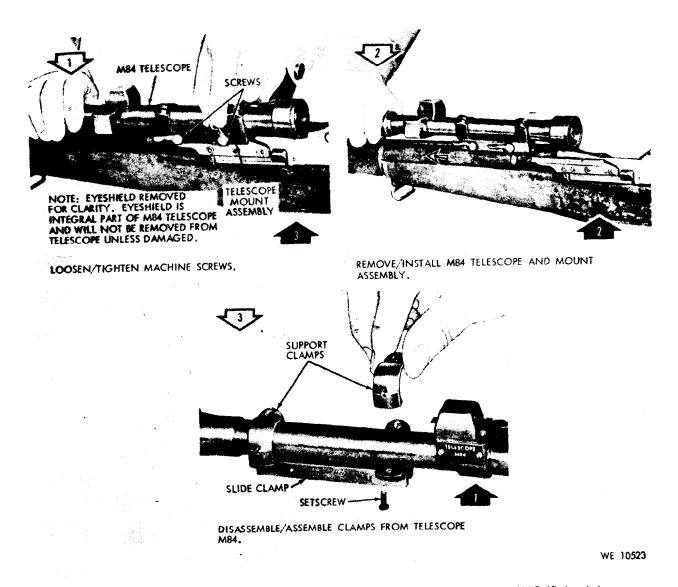
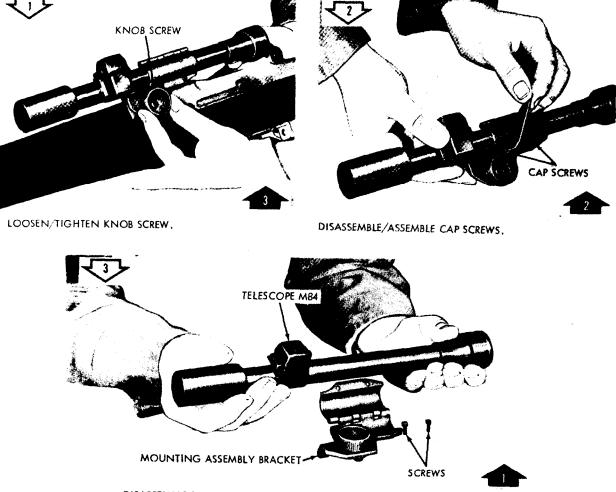


Figure 5-37. Disassembly/assembly telescope mount assembly for rifle M1C (Sniper's).



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Figure 5-38. Disassembly/assembly of mounting bracket assembly for rifle M1D (Sniper's).
