

U.S. MARINE CORPS TECHNICAL MANUAL

**ORGANIZATIONAL AND INTERMEDIATE  
MAINTENANCE MANUAL WITH REPAIR PARTS LIST (RPL)**

FOR

**SNIPER RIFLE, 7.62 MM, M40A3**

NSN: 1005-01-495-0843

PN: 99004A1000

**SNIPER RIFLE, 7.62 MM, M40A5**

NSN: 1005-01-567-7827

PN: 08009A0000



MARINE CORPS SYSTEMS COMMAND  
QUANTICO, VA 22134-6050

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**OCTOBER 2008**

**PCN 184 055392 00**



DEPARTMENT OF THE NAVY  
Headquarters, U.S. Marine Corps  
Washington, DC 20380-0001

31 October 2008

1. This Technical Manual (TM), authenticated for Marine Corps use and effective upon receipt, provides information on the Sniper Rifle, 7.62 mm, M40A3, NSN: 1005-01-495-0843 and the Sniper Rifle, 7.62 mm, M40A5, NSN: 1005-01-567-7827; TM 05539-IN.
2. Submit notice of discrepancies or suggested changes on a NAVMC 10772. The NAVMC may be submitted via the Internet using website <https://pubs.ala.usmc.mil/front.htm>, scrolling down to the NAVMC 10772 Tracking Program and following instructions provided. It may also be submitted by electronic mail to [smb.log.tech.pubs.fct@usmc.mil](mailto:smb.log.tech.pubs.fct@usmc.mil) or by mailing paper copy NAVMC 10772 in an envelope addressed to Commander, Marine Corps Systems Command, Attn: Assistant Commander Acquisition and Logistics (LOG/TP), 814 Radford Blvd, Suite 20343, Albany, Georgia 31704-0343.
3. TM 05539D-24A&P/2 of November 2004 is hereby superseded for Marine Corps use.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

OFFICIAL:



A. D. BIANCA  
Program Manager, IW, PG-13  
Marine Corps Systems Command

DISTRIBUTION: EDO



## WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel.

### WARNING

**Use only authorized ammunition manufactured to U.S. or North Atlantic Treaty Organization (NATO) specifications.**

### WARNING

**Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in TM 05539-OR\_. Failure to follow this warning may cause injury or death to personnel.**

### WARNING

**The firing pin is under spring tension. Release it slowly to prevent injury to personnel.**

### WARNING

**DO NOT remove or adjust sear engagement screw, overtravel screw or trigger adjustment screw in trigger housing. The only authorized adjustment is to the fine tune adjustment screw (weight).**

### WARNING

**DO NOT interchange bolt body assemblies from one M40A3/A5 Sniper Rifle to another M40A3/A5 Sniper Rifle. This can cause a malfunction to the weapon. Failure to follow this warning may cause injury or death to personnel.**

### WARNING

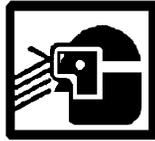
**After unloading the weapon, and with the bolt locked to the rear, visually and physically check the chamber for ammunition. Failure to follow this warning may cause injury or death to personnel from negligent discharge.**

**WARNING**

**DO NOT store the weapon with live ammunition in either the chamber or magazine. Failure to follow this warning may cause injury or death to personnel.**

**WARNING**

**Under NO circumstances should live ammunition be shipped with the weapon, either in the shipping box, magazine or chamber. Failure to follow this warning may cause injury or death to personnel.**



**WARNING**

**Once the extractor has popped off, slowly release the bolt disassembly tool handle to prevent the ejector and ejector spring from flying off. Failure to follow this warning may cause injury to personnel.**

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FOR

**SNIPER RIFLE, 7.62 MM, M40A3**

NSN: 1005-01-495-0843

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AND

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## HOW TO USE THIS MANUAL

### INTRODUCTION

1. This manual contains operating instructions, maintenance procedures, emergency procedures, and troubleshooting procedures for the 7.62 mm, M40A3/A5 Sniper Rifle. It is divided into five chapters.
2. This manual is written in work package format:
  - a. Chapters divide the manual into major categories of information (e.g., *General Information, Equipment Description and Data, and Principles of Operation*).
  - b. Each chapter is divided into work packages, which are identified by a 6-digit number (e.g., 0001 00, 0002 00, etc.) located on the upper right-hand corner of each page. The work package page number (e.g., 0001 00-1, 0001 00-2, etc.) is centered at the bottom of each page.
  - c. If a Change Package is issued to this manual, added work packages use the 5th and 6th digits of their number to indicate new material. For instance, work packages inserted between WP 0001 00 and WP 0002 00 are numbered WP 0001 01, WP 0001 02, etc.
3. Read through this manual to become familiar with its organization and contents before attempting to operate or maintain the equipment.

### CONTENTS OF THIS MANUAL.

1. A *Warning Summary* is located at the beginning of this manual. Become familiar with these warnings before operating or maintaining the equipment.
2. A *Table of Contents*, located in the front of the manual, lists all chapters and work packages in the publication. If you cannot find what you are looking for in the Table of Contents, refer to the alphabetical *Index* at the back of the manual.
3. Chapter 1, *General Information, Equipment Description and Data, and Principles of Operation*, provides general information about the equipment, identifies the major components and systems, and describes how the components and systems work.
4. Chapter 2, *Troubleshooting*, which includes *Troubleshooting Introduction, Troubleshooting Symptom Index, and Troubleshooting Procedures*, provides symptoms and procedures pertaining to failures that could occur during operation of the M40A3/A5 Sniper Rifle.
5. Chapter 3, *Organizational Maintenance*, includes *Service Upon Receipt, Preventive Maintenance Checks and Services (PMCS) Including Lubrication Instructions, General Maintenance Instructions, Cleaning the Weapon, and Preparation for Storage and Shipment*. This chapter provides procedures to maintain the M40A3/A5 Sniper Rifle.
6. Chapter 4, *Intermediate Maintenance*, provides Intermediate level maintenance procedures.
7. Chapter 5, *Supporting Information*, includes *References, Expendable and Durable Items List, Tool Identification List, Manufactured Items Illustrations, Quality Assurance Checklist, Repair Parts List (RPL) Introduction, and Repair Parts List (RPL)*. This chapter provides information pertaining to references, components listing, expendable/durable supplies and material list.
8. An alphabetical *Index* is located at the back of this manual.

**FEATURES OF THIS MANUAL**

1. This manual contains information on operating and maintaining the M40A3/A5 Sniper Rifle.
2. WARNINGS, CAUTIONS, NOTES, subject headings, and other important information are highlighted in **BOLD** print as a visual aid.

**WARNING**

**A WARNING indicates a hazard which may result in injury or death to personnel.**

**CAUTION**

**A CAUTION is a reminder of safety practices or directs attention to usage practices that may result in damage to equipment.**

**NOTE**

**A NOTE is a statement containing information that will make the procedures easier to perform.**

3. Statements and words of particular interest may be printed in CAPITAL LETTERS to create emphasis.
4. Within a procedural step, reference may be made to another chapter or work package in this manual or to another manual. These references indicate where you should look for more complete information. If you are told: "Remove the safety and trigger mechanism (WP 0024 00)", go to WP 0024 00 in this manual for instructions.
5. Illustrations are placed after, and as close to, the procedural steps to which they apply. Callouts placed on the art are text or numbers.
6. Numbers located at lower right corner of art (e.g., M40-018; M40-019, etc.) are art control numbers and are used for tracking purposes only. Disregard these numbers.

**CHAPTER 1**  
**GENERAL INFORMATION, EQUIPMENT**  
**DESCRIPTION AND DATA, AND PRINCIPLES OF OPERATION**



**SCOPE**

1. **Type of Manual.** Organizational and Intermediate Maintenance Manual for the 7.62 mm, M40A3/M40A5 Sniper Rifle. Basic operator's procedures are outlined in TM 05539-OR\_, Operator's Manual with Components List for Sniper Rifle, 7.62 mm, M40A3/M40A5.
2. **Equipment Name and Model Number.** The weapon, 7.62 mm, M40A3/A5 Sniper Rifle is manufactured by the Precision Weapons Section (PWS), Weapons Training Battalion, Marine Corps Combat Development Center, 27251 Garand Road, Quantico, VA 22134-5036.

**ISSUE AND RECOVERY OF INDIVIDUAL WEAPONS**

The M40A3/A5 will be issued and recovered in the same manner as other individual weapons. NAVMC 10576, *Memo-randum Receipt for Individual Weapons and Accessories*, will be used as the issue document. NAVMC 10520, *Weapon Custody Receipt Card*, will be used when the weapon is drawn from the armory for use. Detailed instructions for using these forms are contained in TM 4700-15/1\_, *Ground Equipment Record Procedures*.

**REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS**

If a way to improve this weapon is recognized, submit SF Form 368, *Product Quality Deficiency Report (PQDR)* in accordance with MCO 4855.10, *Product Quality Deficiency Report (PQDR)* to the below listed address. To electronically submit a PQDR, go to EZ PQDR website <https://199.208.242.174/spqdr/home.do>. This site can be used to submit the PQDR, answer questions on how to correctly fill out the form, and track the status.

Marine Corps LogCom Command Element  
Attn: Quality Assurance Office (L15)  
814 Radford Boulevard, Ste 20330  
Albany, Georgia 31704-0330

**CORROSION PREVENTION AND CONTROL**

The prevention of corrosion on any equipment is important, and it is critically important for safe functioning of a weapons system. Carry out corrosion prevention in accordance with TM 4795-12/1\_, *Organizational Corrosion Prevention and Control Procedures for USMC Equipment*. Report a recurrent corrosion problem on SF Form 368 in accordance with MCO 4855.10.

**DEPOT MAINTENANCE**

All depot repairs will be accomplished by Weapons Training Battalion, Quantico, Virginia, through a Depot Maintenance Intraservice Support Agreement with Marine Corps Logistics Bases, Albany, Georgia. In the event the weapon requires depot repair, ship it as a complete assembly.

**FORMS, RECORDS, AND REPORTS**

The Marine Corps forms and procedures used for equipment maintenance will be those prescribed by the current edition of TM 4700-15/1\_. Work package 0029 00, References, lists specific forms to be used with the M40A3/A5 Sniper Rifle, but is not to be considered all-inclusive. Responsibility for the proper execution of forms and records rests with the using unit. In order to maintain accurate records, it is imperative that the units follow these instructions:

1. NAVMC 1018, *Inspection Tag*. This form will be attached to each M40A3/A5 Sniper Rifle that requires repair. The instructions for completing this form are found in TM 4700-15/1\_.
2. NAVMC 10558A, *Weapon Record Book, Part II*. This form is the most important of the three forms used with the M40A3/A5 Sniper Rifle and must be filled out according to the paragraphs below. Each M40A3/A5 Sniper Rifle, when received from the supply system, will have a NAVMC 10558A attached. Receiving units verify the serial number of the weapon with the serial number recorded on the front of the weapon record book to ensure they are identical. The NAVMC 10558A must be filled out in the following manner, without reference to any other publications:
  - a. **Front Cover.** The manufacturer will have filled out this page. No further entries will be made on it.

**FORMS, RECORDS, AND REPORTS - CONTINUED**

- b. **Page 3.** The using unit will complete this page when the weapon is received. The only further entries required are the telescope serial number, if replaced. The accumulated rounds fired count should be recorded from the previous Weapon Record Book, when replaced.
- c. **Page 5, Unit Commander's Record.** Record the daily total of rounds fired. Make entries as shown in Table 1.

**NOTE**

Add totals on page when current page is used in full.

**Table 1. Weapon Record Book (Round Count).**

<b>COMMANDER'S RECORD</b>			
<b>1. DATE</b>	<b>2. TYPE OF ROUND</b>	<b>3. ZONE</b>	<b>4. NO. OF ROUNDS EFC VALUE</b>
24 MAY 2000	M118	Range 4	30
28 MAY 2000	M118	Range 4	35
12 JUN 2000	M118	Range 4	35
23 JUN 2000	M118	Range 4	30
PAGE TOTAL			<b>5.</b> 130
TOTAL FROM PREVIOUS PAGE			<b>6.</b> 280
ACCUMULATIVE TOTAL			<b>7.</b> 410

- d. **Pages 40 through 49, Pullover Gage Inspection Record.** Pages are left blank; do not use.
- e. **Page 51, Bore Inspection Record.** This record contains all of the maintenance data performed by Organizational and higher level maintenance. The telescope serial number entry will be made in the Weapon Record Book when initially received. Entries will be made as shown in the *Bore Inspection Record* on page 3 of this work package.
- f. **Lost, Destroyed or Misplaced Weapon Record Book.** In the event a Weapon Record Book must be reconstructed, a Limited Technical Inspection (LTI) at the intermediate maintenance activity must be performed by an MOS 2112. Request assistance in recovering data from the address below.

Commanding Officer  
 Weapons Training Battalion  
 Marine Corps Combat Development Center  
 27251 Garand Road  
 Quantico, VA 22134-5036  
 Attn: Precision Weapons Section

- g. **Accidents and Malfunctions Reports.** Report accidents involving injury to personnel or damage to equipment in accordance with the current edition of MCO 5101.8, *Ground Mishap Report*. Report explosive and ammunition malfunctions in accordance with MCO 8025.1, *Class V (W) Malfunctions and Deficiencies*.

FORMS, RECORDS, AND REPORTS - CONTINUED

<b>BORE INSPECTION RECORD</b>																							
<b>1. DATE</b>	REMARKS ON CONDITION OF BORE AND CHAMBER, RESULTS OF BALLISTIC CALIBRATION FIRINGS, DAMAGE TO TUBE, SERVICEABILITY, ETC. <i>(Reasons for condemnation)</i>																						
21 May 04	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;"><b>SERVICEABLE</b></td> <td style="text-align: center; padding: 5px;"><b>CODE "A"</b></td> </tr> <tr> <td style="padding: 5px;">Built/Rebuilt</td> <td style="padding: 5px;">New Barrel Installed</td> </tr> <tr> <td style="padding: 5px;">Bbl.Mfg./Twist</td> <td style="padding: 5px;"><u>Schneider 1/12</u></td> </tr> <tr> <td style="padding: 5px;">Headspace</td> <td style="padding: 5px;"><u>1.630</u></td> </tr> <tr> <td style="padding: 5px;">Breechbore</td> <td style="padding: 5px;"><u>0+</u></td> </tr> <tr> <td style="padding: 5px;">Trg. Wgt.</td> <td style="padding: 5px;"><u>3-5 LB</u></td> </tr> <tr> <td colspan="2" style="padding: 5px;">PFI/LTI Performed</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Ready f/ Proof &amp; Function</td> </tr> <tr> <td style="padding: 5px; text-align: center;"><u>GySgt-2112</u></td> <td style="padding: 5px; text-align: center;"><u>D. Rosa</u></td> </tr> <tr> <td style="padding: 5px; text-align: center;">Print Rank / MOS</td> <td style="padding: 5px; text-align: center;">Sign</td> </tr> <tr> <td colspan="2" style="padding: 5px; text-align: center;">PWS Quantico, VA</td> </tr> </table>	<b>SERVICEABLE</b>	<b>CODE "A"</b>	Built/Rebuilt	New Barrel Installed	Bbl.Mfg./Twist	<u>Schneider 1/12</u>	Headspace	<u>1.630</u>	Breechbore	<u>0+</u>	Trg. Wgt.	<u>3-5 LB</u>	PFI/LTI Performed		Ready f/ Proof & Function		<u>GySgt-2112</u>	<u>D. Rosa</u>	Print Rank / MOS	Sign	PWS Quantico, VA	
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M40-001

**LIST OF ABBREVIATIONS/ACRONYMS**

<b>ABBREVIATION/ACRONYM</b>	<b>DEFINITION</b>
CAGEC .....	Commercial and Government Entity Code
CLP .....	Cleaner, Lubricant, and Preservative
FPS .....	Feet Per Second
ft .....	Foot/Feet
IAW .....	In Accordance With
IMA .....	Intermediate Maintenance Activity
in .....	Inch
LAW .....	Lubricant, arctic, weapons
lb .....	Pound
LSA .....	Lubricant, small arms
LSA-T .....	Lubricant, small arms
LTI .....	Limited Technical Inspection
m .....	Meter
mm .....	Millimeter
MI .....	Modification Instruction
MOA .....	Minute of Angle
NATO .....	North American Treaty Organization
Nm .....	Newton Meter
NSN .....	National Stock Number
oz. ....	Ounce
PQDR .....	Product Quality Deficiency Report
PMCS .....	Preventive Maintenance Checks and Services
RBC .....	Rifle Bore Cleaner
SMR .....	Source, Maintenance, and Recoverability
TB .....	Technical Bulletin
TDC .....	Top Dead Center
yd .....	Yard

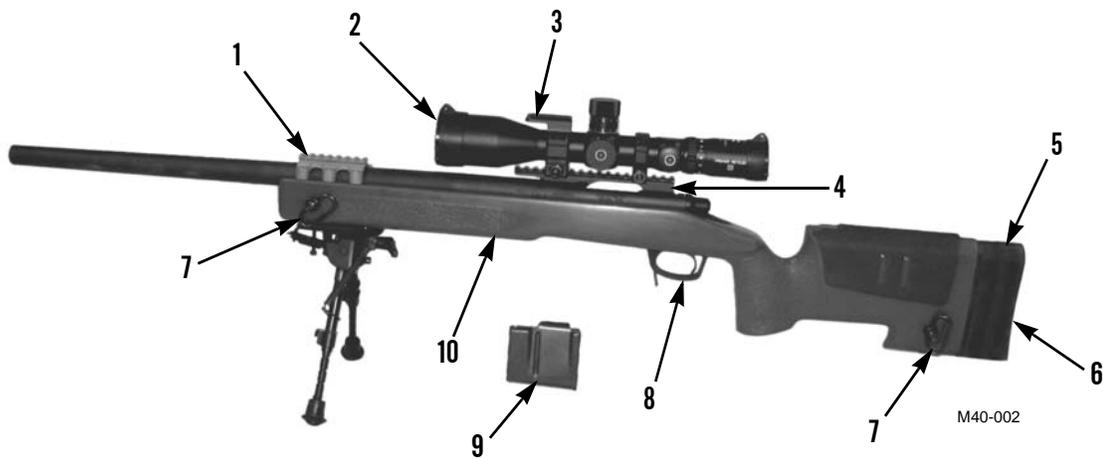
**END OF WORK PACKAGE**

**DESCRIPTION**

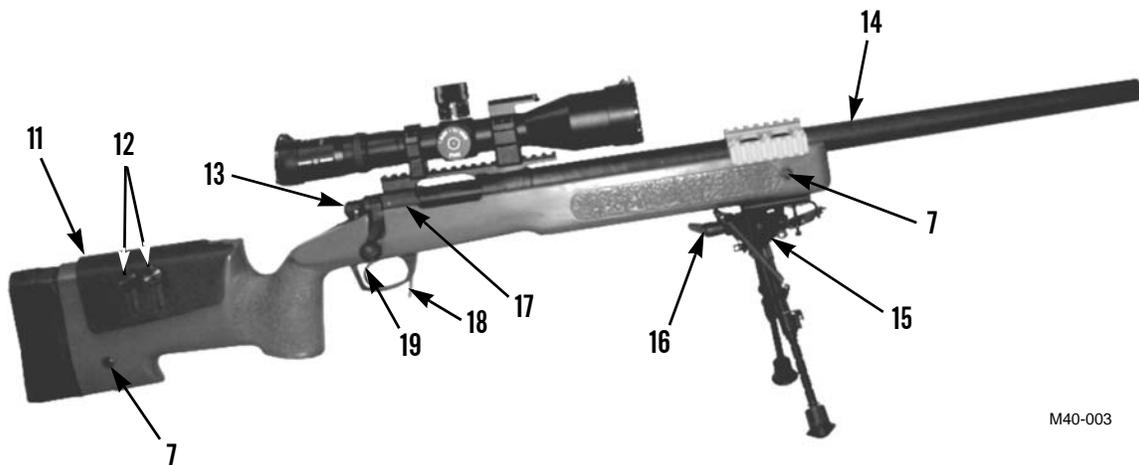
**General.** The M40A3/A5 Sniper Rifle is a bolt action, manually operated, magazine fed, air cooled, shoulder fired weapon with an optical sight. The closed bolt design of the weapon offers a high degree of accuracy and control while providing a greater degree of safety. The M40A5 is also equipped with a barrel muzzle break and quickly attachable/detachable sound suppressor.

**NOMENCLATURE**

1. **Left Side.** The left side of the weapon reveals telescope and ring assembly (2), SIMRAD mount (3), optical platform (4), recoil pad inserts (5), recoil pad (6), swivel bosses (7), trigger guard (8), magazine assembly (9), fiberglass stock (10), front swivel boss, and accessory rail (1).

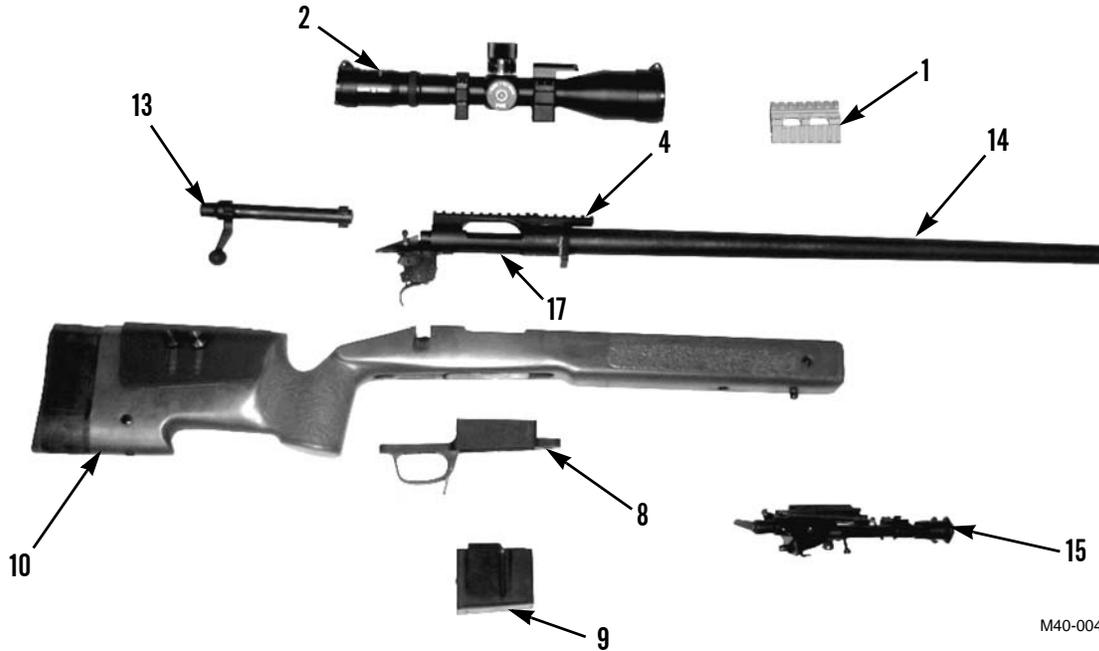


2. **Right Side.** The right side view of the weapon reveals cheek piece (11), cheek piece screws (12), bolt assembly (13), safety, barrel (14), swivel bosses (7), bipod assembly (15), bipod pod lock (16), receiver (17), magazine release (18), and trigger assembly (19).



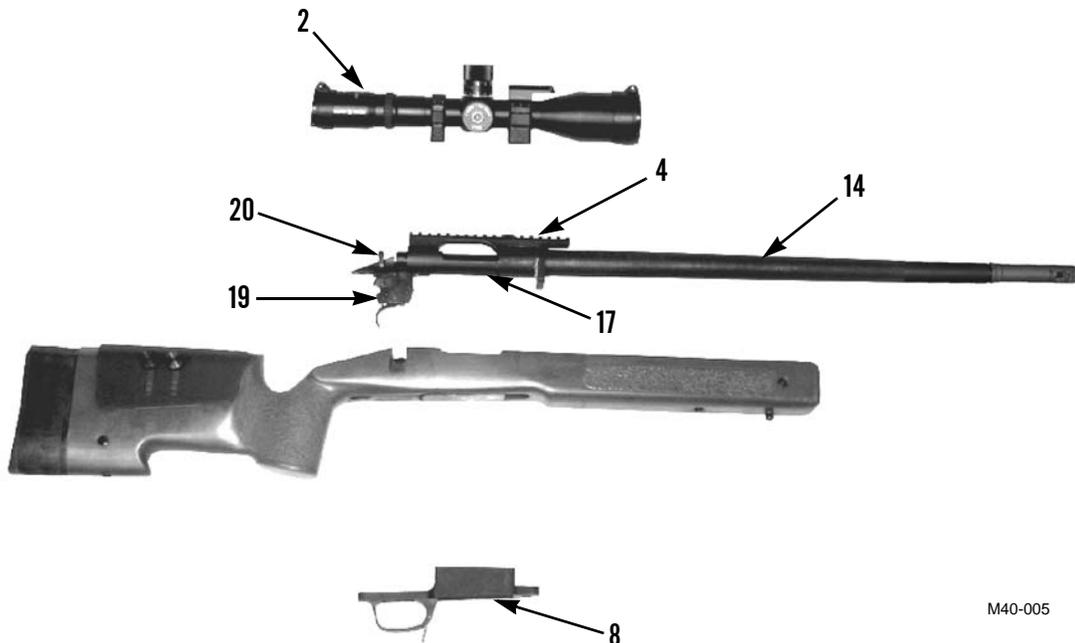
**DESCRIPTION OF MAJOR COMPONENTS**

- The major components of the M40A3/A5 are barrel and receiver assembly (14 and 17), bolt assembly (13), stock assembly (10), trigger guard (8), magazine assembly (9), telescope assembly (2), accessory rail (1), bipod assembly (15), and optical platform (4).



M40-004

- Barrel and Receiver Assembly.** The receiver (17) connects to the barrel (14), trigger (19), and safety mechanism (20) into a single unit. The optical platform (4), telescope assembly (2), and trigger guard (8) are components of the barrel and receiver assembly (14 and 17). The M40A5 is also equipped with a muzzle break to facilitate the quickly attached/detached sound suppressor.



M40-005

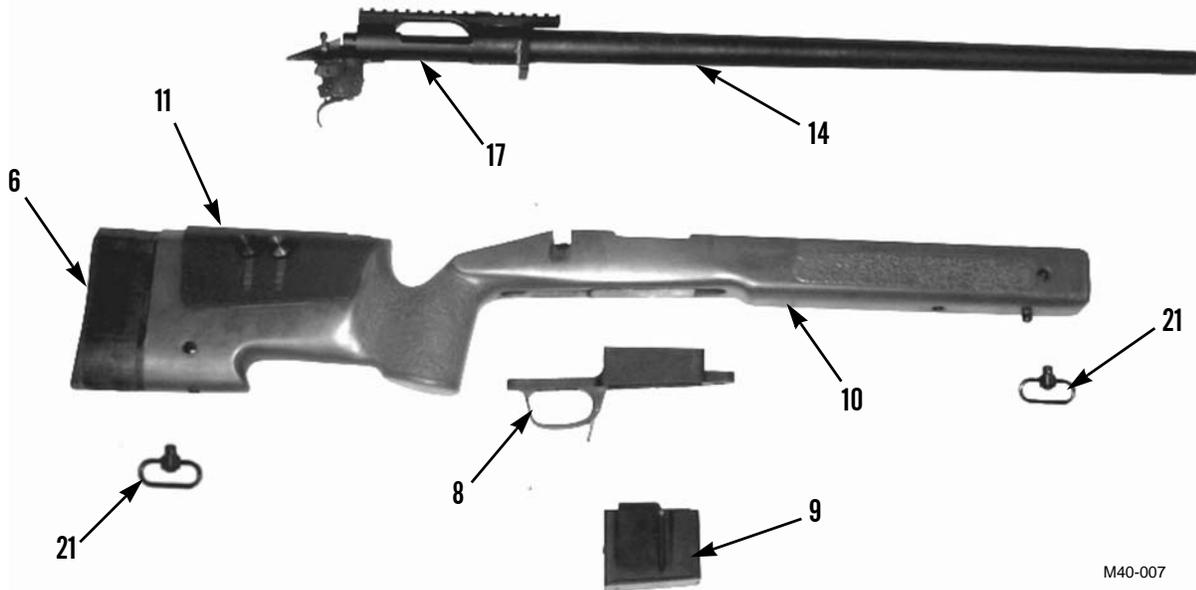
**DESCRIPTION OF MAJOR COMPONENTS - CONTINUED**

3. **Bolt Assembly.** The bolt assembly (13) is housed in the receiver (17). The bolt feeds and fires the cartridge and extracts and ejects the empty cartridge case after firing.



M40-006

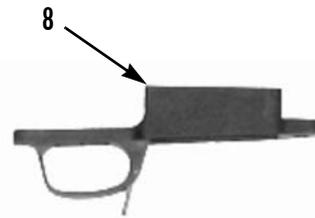
4. **Stock Assembly.** The fiberglass stock (10) contains the trigger guard (8), magazine assembly (9), and supports the barrel (14), and receiver assembly (17). Quick detachable sling swivels (21), recoil pad assembly (6), and cheek piece assembly (11) are attached to the stock.



M40-007

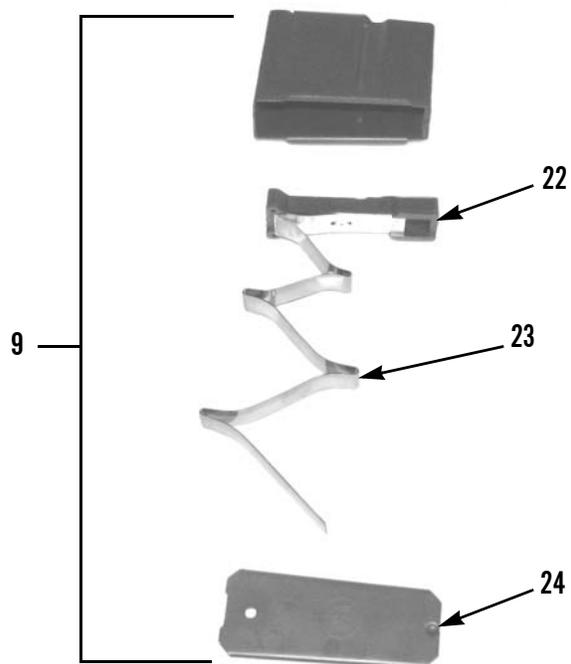
**DESCRIPTION OF MAJOR COMPONENTS - CONTINUED**

5. **Trigger Guard.** The trigger guard assembly (8) helps protect the trigger assembly.



M40-008

6. **Magazine Assembly.** The magazine assembly (9) consists of the follower (22), magazine spring (23), and floor plate (24).



M40-028

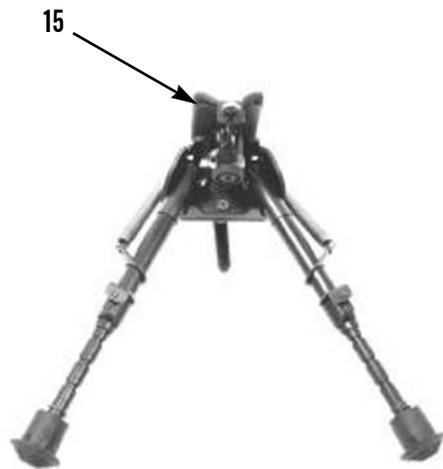
7. **Telescope Assembly with Ring Mounts.** The telescope assembly (2) is mounted to the optical platform (4). The telescope provides a 3-12 X 50 view of the target. It has a ballistic elevation cam that adjusts the point of aim/point of impact out to 1,000 yards in 100 yard increments.



M40-009

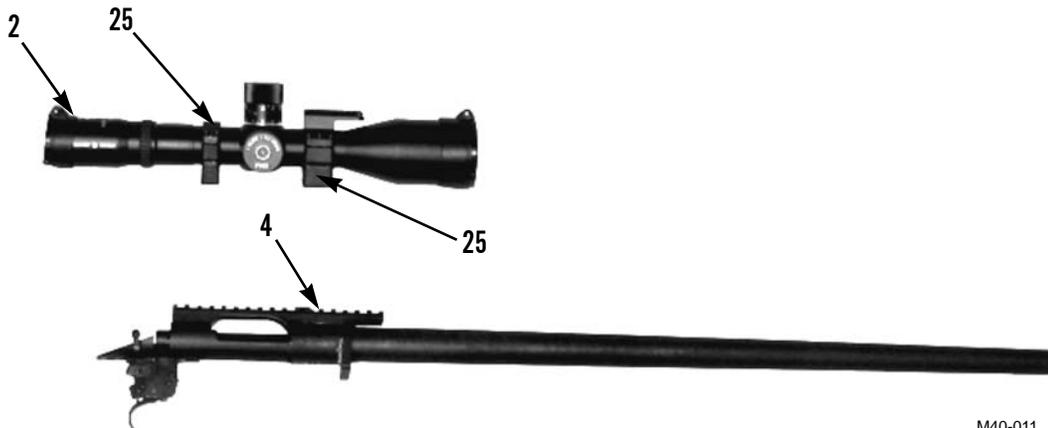
**DESCRIPTION OF MAJOR COMPONENTS - CONTINUED**

8. **Bipod Assembly.** The bipod assembly (15) is mounted to the stock. It can be used to help stabilize the weapon system in certain tactical situations. The bipod assembly pivots and locks in any left or right position.



M40-010

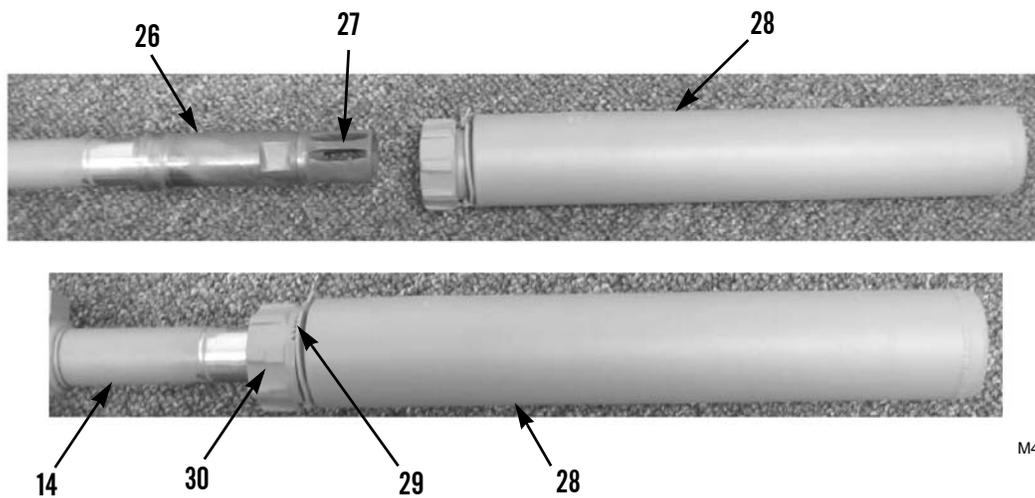
9. **Optical Platform.** The ring mounts (25) attach to the optical platform (4) that supports the telescope assembly (2). The optical platform is designed to accommodate various optics.



M40-011

**DESCRIPTION OF MAJOR COMPONENTS - CONTINUED**

10. **Muzzle Break.** (M40A5 Only) - The muzzle break (26) is attached to the weapon's barrel (14) for the purpose of providing a mounting point for a sound suppressor (28). The bearing surfaces and interface notch on the muzzle break provide a highly precise fit between the suppressor and the muzzle break. The muzzle break also incorporates a flash suppressor (27) to reduce muzzle flash of the weapon when the suppressor is not being used.
11. **Sound Suppressor.** (M40A5 Only) - The suppressor (28) is a lightweight, quickly attachable/detachable unit that is designed to reduce both the audible report and muzzle flash of the M40A5 weapon when fired. The suppressor is made of high temperature alloys and stainless steel. The suppressor fits over the barrel muzzle break (26) riding on bearing surfaces that provide a precise fit. The suppressor then locks securely into place by use of a locking ring (30) equipped with a ratchet stop (29).



M40-077

**AMMUNITION****WARNING**

Use only authorized ammunition manufactured to U.S. NATO specifications.

**Primary Round.** The primary round for the M40A3/A5 is the 7.62 mm, M118LR cartridge.

**ASSOCIATED EQUIPMENT**

Refer to the Supply System Responsibility Items (SSRI) List in TM 05539-OR\_ for a list of the associated equipment.

## REFERENCE DATA

Table 1. M40A3/A5 Sniper Rifle Specifications.

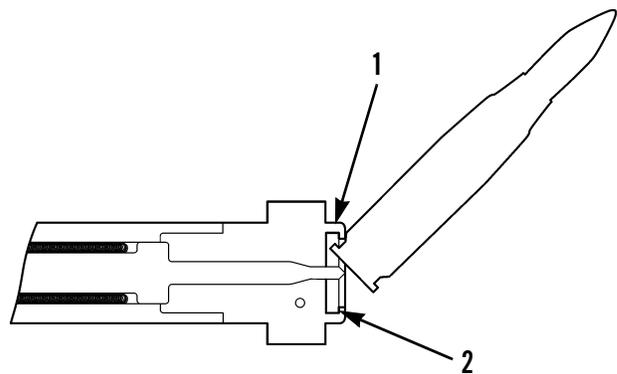
SPECIFICATIONS	
Caliber	7.62 mm NATO
Weight	
w/o suppressor	16.05 lb
w/ suppressor	17.20 lb
Weight of telescope	2.0 lb
Total weight	
w/o suppressor	18.25 lb
w/ suppressor	19.45 lb
Overall length	
w/o suppressor	44 in.
w/ suppressor	49.75 in.
Barrel length	24 in.
Suppressor weight	19 oz
Suppressor length	9.8 in.
Suppressor diameter	1.5 in.
Magazine capacity	5 rounds
Safety	Manual lever
Rifling	1 turn in 12 inches, right hand twist
Chamber pressure	50,000 copper units of pressure (cup)
Stock	Fiberglass
Telescope	3-12 X 50, point of aim/point of impact
Telescope length	12.5 in.
Windage	Adjustable in .1 mil increments
Elevation	Adjustable in .1 mil increments
CAPABILITIES	
Modes of fire	Bolt action, manually operated
Maximum effective range	1,000 yd
Muzzle velocity	2,670 feet per second with M118LR ammunition (slight increase w/suppressor)

END OF WORK PACKAGE



**GENERAL DESCRIPTION**

1. **Cycle of Operation.** Knowledge of what happens during the cycle of operation will help the operator understand the cause of and remedy for various stoppages.
2. **Eight Steps.** The cycle of operation consists of eight steps:
  - a. Firing
  - b. Unlocking
  - c. Cocking
  - d. Extracting
  - e. Ejecting
  - f. Feeding
  - g. Chambering
  - h. Locking
3. **Description of Eight Steps.** These eight steps are explained below, including a brief description of what occurs inside the weapon during each step. Assume that a full magazine is loaded in the weapon, that the first cartridge is chambered, and that the bolt is forward and locked.
  - a. **Firing.** The trigger with attached connector pivots on the trigger pin, allowing the sear safety cam to drop down and release the firing pin. The firing pin under spring tension is propelled forward to strike the primer of the cartridge. The primer ignites the powder inside the cartridge case and gas pressure builds. The building gas pressure exerts thrust on the face of the bullet, pushing it against the lug abutments while propelling the bullet down and out of the bore at the same time.
  - b. **Unlocking.** After firing, the operator starts to rotate the bolt handle up, which unlocks the bolt from the breech.
  - c. **Cocking.** When the bolt handle is lifted, the firing pin cap is cammed into the notch of the bolt body.
  - d. **Extracting.** The bolt handle, while still being lifted, contacts the primary extraction surface on the rear of the receiver, which provides mechanical leverage to initially break the seal of the cartridge inside of the chamber and start the rearward movement of the bolt to the rear. The extractor (1), being engaged with the extraction rim of the cartridge case, pulls the spent case from the chamber.
  - e. **Ejecting.** The bolt, while continuing its rearward motion in the receiver, continues to pull the spent cartridge case until it clears the ejection port. As soon as the spent cartridge clears the ejection port, it is expelled from the weapon by the ejector (2), which is under spring tension. The bolt continues to the rear until it makes contact with the bolt stop inside the receiver.



M40-2003

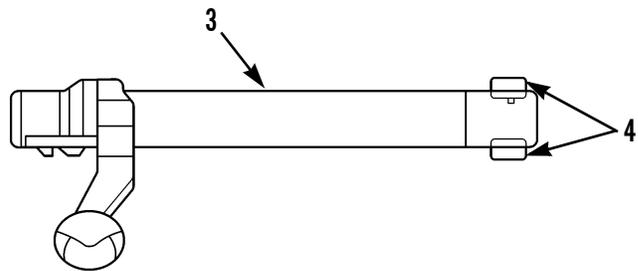
**GENERAL DESCRIPTION - CONTINUED**

- f. Feeding. While pushing the bolt handle forward into battery, a live cartridge is stripped from the magazine by the nose of the bolt. The live cartridge is guided toward the chamber by the feed ramp of the receiver.
- g. Chambering. The bolt continues the forward movement of the live cartridge toward the breech until the bolt handle (3) makes contact with the primary extraction surface of the receiver. At this point the bolt starts to rotate downward, the extractor snaps over the extraction rim of the cartridge case, and the bolt lugs (4) rotate into the breech.

**NOTE**

**Dirt or debris inside the chamber, as well as bent, dented, or otherwise faulty ammunition can prevent a cartridge from fully chambering or extracting.**

- h. Locking. While the bolt (3) continues rotating inside the breech, the bolt lugs (4) start engaging and locking into the receiver's lug abutments. The bolt is locked once it is fully closed into battery. At this point the weapon is again ready for firing.



M40-2004

**END OF WORK PACKAGE**

**CHAPTER 2**  
**TROUBLESHOOTING**



**GENERAL**

This chapter contains troubleshooting information for locating and correcting malfunctions that may occur with the M40A3/A5 Sniper Rifle.

This manual cannot list all of the possible malfunctions, tests or inspections, and corrective actions for the M40A3/A5. If a malfunction is not listed (except when the malfunction and cause are obvious) or if it is not corrected by the listed action, evacuate the weapon to the next higher level of maintenance. Table 1, in *Troubleshooting Procedures* (WP 0006 00), lists possible malfunctions, tests or inspections, and corrective action for troubleshooting the M40A3/A5 at the Organizational and Intermediate maintenance level.

**END OF WORK PACKAGE**



**TROUBLESHOOTING PROCEDURES**

This symptom index is provided for a quick reference of the malfunctions covered in Table 1, *Organizational and Intermediate Troubleshooting Chart* (WP 0006 00).

<b>Malfunction/Symptom</b>	<b>Troubleshooting Procedure Page</b>
1. Magazine Inserts with Difficulty.....	0006 00-1
2. Magazine Cannot be Retained in Weapon. ....	0006 00-1
3. Failure to Feed (Bolt Moves Forward Without Feeding Cartridge). ....	0006 00-1
4. Bolt Fails to Lock. ....	0006 00-1
5. Failure to Chamber. ....	0006 00-2
6. Failure to Cock. ....	0006 00-2
7. Failure to Fire. ....	0006 00-2
8. Failure to Extract (Cartridge Case Will Not Extract). ....	0006 00-2
9. Failure to Eject (Cartridge Case Will Not Eject). ....	0006 00-2
10. Bipod Fails to Clamp or Lock Securely. ....	0006 00-2
11. Bipod Legs Fail to Expand. ....	0006 00-2
12. Bipod Legs Fail to Remain Open. ....	0006 00-2

**END OF WORK PACKAGE**



**GENERAL**

Table 1 lists possible malfunctions, tests or inspections, and corrective action for troubleshooting the M40A3/A5 Sniper Rifle at the Organizational and Intermediate Maintenance level.

**Table 1. Organizational and Intermediate Troubleshooting Chart.**

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
<p><b>1. Magazine Inserts with Difficulty.</b></p>	<p>1. Check for bent or deformed magazine.</p> <p>2. Check for excessive dirt in receiver well or in magazine.</p> <p>3. Check for ammunition not fully seated in magazine.</p>	<p>Replace magazine.</p> <p>Clean and lubricate receiver well and magazine. Refer to TM 05539-OR_.</p> <p>Remove ammunition and reload properly. Refer to TM 05539-OR_.</p>
<p><b>2. Magazine Cannot be Retained in Weapon.</b></p>	<p>1. Check for magazine not fully seated.</p> <p>2. Check for magazine damaged or deformed.</p> <p>3. Check for deformed locking recess at top front of magazine.</p>	<p>Remove and install magazine properly. Ensure the latch clicks.</p> <p>Replace magazine.</p> <p>Replace magazine.</p>
<p><b>3. Failure to Feed (Bolt Moves Forward Without Feeding Cartridge).</b></p>	<p>1. Check for magazine improperly loaded.</p> <p>2. Check for weak or broken magazine spring.</p> <p>3. Check for defective/dirty magazine.</p> <p>4. Check for damaged or dirty ammunition.</p>	<p>Re-insert ammunition properly. Refer to TM 05539-OR_.</p> <p>Replace magazine.</p> <p>Clean or replace magazine as necessary.</p> <p>Clean or replace ammunition. Refer to TM 05539-OR_.</p>
<p><b>4. Bolt Fails to Lock.</b></p>	<p>1. Check for ammunition not seated in chamber properly.</p> <p>2. Check for dirty breech/chamber.</p> <p>3. Check for defective extractor.</p> <p>4. Check for damaged/dirty bolt assembly.</p> <p>5. Check for damaged receiver.</p> <p>6. Check for defective ejector.</p> <p>7. Check for damaged/defective bolt.</p>	<p>Ensure ammunition is seated fully into chamber.</p> <p>Clean breech/chamber as necessary. Refer to TM 05539-OR_.</p> <p>Replace defective extractor. Refer to WP 0013 00.</p> <p>Clean and lubricate or repair bolt assembly as necessary. Refer to TM 05539-OR_.</p> <p>Evacuate to higher level of maintenance.</p> <p>Evacuate to higher level of maintenance.</p> <p>Evacuate to higher level of maintenance.</p>

Table 1. Organizational and Intermediate Troubleshooting Chart - Continued.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
<b>5. Failure to Chamber.</b>	<ol style="list-style-type: none"> <li>1. Check for dirty/defective ammunition.</li> <li>2. Check for dirty chamber.</li> </ol>	<p>Clean ammunition with dry cloth or replace. Refer to TM 05539-OR_.</p> <p>Clean barrel and chamber. Refer to TM 05539-OR_.</p>
<b>6. Failure to Cock.</b>	Check for defective/dirty trigger and sear assembly.	Clean or repair trigger and sear assembly as necessary. Refer to WP 0024 00.
<b>7. Failure to Fire.</b>	<ol style="list-style-type: none"> <li>1. Check for empty magazine.</li> <li>2. Check for weapon on SAFE.</li> <li>3. Check for open bolt or bolt not fully closed.</li> <li>4. Check for defective firing pin.</li> <li>5. Check for faulty ammunition.</li> <li>6. Check for defective bolt assembly.</li> <li>7. Check for defective firing mechanism.</li> </ol>	<p>Load magazine. Refer to TM 05539-OR_.</p> <p>Move safety selector lever to FIRE. Refer to TM 05539-OR_.</p> <p>Close bolt fully. Refer to TM 05539-OR_.</p> <p>Replace firing pin as necessary. Refer to WP 0014 00.</p> <p>Replace ammunition and report lot number. Refer to TM 05539-OR_.</p> <p>Evacuate to higher level of maintenance.</p> <p>Evacuate to higher level of maintenance.</p>
<b>8. Failure to Extract (Cartridge Case Will Not Extract).</b>	<ol style="list-style-type: none"> <li>1. Check for bent, frozen, or dirty extractor or bolt assembly.</li> <li>2. Ruptured or damaged ammunition in chamber.</li> </ol>	<p>Remove, clean and replace extractor or bolt assembly as necessary. Refer to WP 0013 00.</p> <p>Remove ammunition or defective case.</p>
<b>9. Failure to Eject (Cartridge Case Will Not Eject).</b>	<ol style="list-style-type: none"> <li>1. Check for defective/dirty ejector, ejector spring, or bolt assembly.</li> <li>2. Check for damaged extractor or extractor spring.</li> </ol>	<p>Clean or repair ejector, ejector spring or bolt assembly as necessary. Refer to WP 0023 00.</p> <p>Replace damaged extractor or extractor spring as necessary. Refer to WP 0023 00.</p>
<b>10. Bipod Fails to Clamp or Lock Securely.</b>	<ol style="list-style-type: none"> <li>1. Check for heavy accumulation of foreign material.</li> <li>2. Check for locking screw not secure.</li> </ol>	<p>Evacuate to higher level of maintenance.</p> <p>Tighten locking screw as required. Refer to TM 05539-OR_.</p>
<b>11. Bipod Legs Fail to Expand.</b>	Check for bent housing.	Replace bipod. Refer to TM 05539-OR_.
<b>12. Bipod Legs Fail to Remain Open.</b>	Check for missing or defective extension springs.	Replace bipod. Refer to TM 05539-OR_.

END OF WORK PACKAGE

**CHAPTER 3**  
**ORGANIZATIONAL MAINTENANCE**



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**SERVICE UPON RECEIPT**

**0007 00**

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***SERVICE UPON RECEIPT***

Service the weapon upon receipt. Perform limited technical inspection in accordance with the *Quality Assurance Checklist* in WP 0033 00 of this manual.

**END OF WORK PACKAGE**



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**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)  
INCLUDING LUBRICATION INSTRUCTIONS**

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0008 00

**GENERAL**

This work package contains inspection, disassembly and reassembly procedures required for corrective maintenance on the M40A3/A5 Sniper Rifle.

1. **Organizational Maintenance.** Organizational Maintenance is performed at the using unit beyond the capabilities of the operator as identified in TM 05539-OR\_. Organizational Maintenance is authorized to remove the firing pin assembly from the bolt body assembly and the receiver assembly from the stock for the purpose of inspecting, repairing or cleaning. The *Repair Parts List (RPL)* in WP 0035 00 contains Organizational Maintenance special tools. For all other inspections and repairs, evacuate the M40A3/A5 Sniper Rifle to the Intermediate Maintenance Activity (IMA).
2. **Special Tools.** The Repair Parts List (RPL) contains the special tools required in the small arms technician's toolbox. A qualified MOS 2112 (Precision Weapons Repairman) will replace weapon components. Either a qualified MOS 2112 or a MOS 2171 (Optical Instrument Repairman) may repair and replace the telescope.
3. **Intermediate Through Depot Maintenance.** Intermediate Maintenance repairs include the total replacement of the telescope, the telescope optical platform, the trigger assembly, the bolt stop, and the safety selector lever. Higher level maintenance will be done by a MOS 2112. Depot Maintenance is performed by Weapons Training Battalion, Quantico, VA, which also functions as the weapons rebuild facility. Weapons Training Battalion is responsible for rebarreling the weapon, replacing the stock assembly, and replacing the bolt body assembly.

**PREVENTIVE MAINTENANCE PROCEDURES**

1. **Organizational Preventive Maintenance Checks and Services.** Perform PMCS every 90 days to keep the weapon in proper operating condition, in accordance with the *Quality Assurance Checklist* in WP 0033 00 of this manual. If the weapon has not been used in 90 days, consider placing it in storage according to instructions outlined in TM 05539-OR\_. If rust is observed on a weapon, perform PMCS immediately.
2. **Inspection.** Perform the following inspections in accordance with TM 05539-OR\_. Field strip the weapon; inspect all parts for cracks, dents, burrs, excessive wear, rust, or corrosion; and ensure all items are cleaned and lubricated. Evacuate the weapon to higher level of maintenance if repairs are not authorized at the Organizational Maintenance level. See Source, Maintenance, and Recoverability (SMR) codes in WP 0035 00, *Repair Parts List (RPL)*.

The using unit is responsible for organizational preventive maintenance. The phase consists of inspecting, servicing, lubricating, and adjusting parts.

**CLEARING/UNLOADING THE WEAPON****WARNING**

- Ensure fingers are outside the trigger guard. Keep the weapon pointed in a safe direction at all times.
- After unloading the weapon and with the bolt open, visually and physically check the chamber for ammunition.
- Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in TM 05539-OR\_.
- Failure to follow these warnings may cause injury or death to personnel.

**FIELD STRIPPING THE WEAPON**

The weapon is field stripped into three major groups to clean, inspect and repair. The groups are the bolt assembly, barrel and receiver assembled into the stock assembly (A5 models also include the suppressor), and magazine assembly. Procedures for field stripping the weapon are outlined in TM 05539-OR\_.

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**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)  
INCLUDING LUBRICATION INSTRUCTIONS - CONTINUED**

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0008 00

**INSPECTING THE WEAPON****NOTE**

**A MOS 2111 (Small Weapons Repairman) must be trained by a MOS 2112 (Precision Weapons Repairman) on procedures prior to performing a limited technical inspection (LTI) or a pre-fire inspection (PFI).**

Inspections reveal the need for repairs, cleaning, or lubrication. When the using unit armory initially receives the weapon, the MOS 2112 (Precision Weapons Repairman) will perform a Limited Technical Inspection (LTI) to verify the weapon's serviceability. In order to ensure that every operator is provided a safe, serviceable and accurate weapon, all M40A3/A5 Sniper Rifles will receive periodic inspections.

**1. Limited Technical Inspection.**

- a. A MOS 2111 will conduct a pre-fire inspection (PFI) that is good for 30 days from the date of inspection. (Conduct the inspection in accordance with TI 8005-24/20\_, *Pre-fire Inspection, Small Arms Weapons, Ordnance Materiel and Trigger Pull Measurement Small Arms Weapons*).
- b. A MOS 2111 will conduct quarterly *Preventive Maintenance Checks and Services (PMCS)* every 90 days in accordance with Table 1 of this work package. Any weapon not repairable at Organizational Maintenance will be evacuated to a higher level of maintenance for further evaluation or repair.
- c. A MOS 2112 will conduct semi-annual inspections every 180 days in accordance with this work package.
- d. Reserve units will inspect at the same frequency, except the semi-annual inspection will not be required and weapons will be inspected annually by a qualified MOS 2112 at the Reserve IMA.

2. **Weapons in Use.** A weapon in use and subject to the elements requires no inspection for cleanliness since its use and exposure is sufficient evidence that it requires repeated daily cleaning and lubrication. Combine daily cleaning with the unit armorer's inspection program for damage detection and maintenance repairs. Evacuate to next higher level of maintenance if necessary.

**ORGANIZATIONAL TOOLS AND EQUIPMENT**

Tools and equipment listed in the Repair Parts List are authorized at the Organizational Maintenance level for the proper care and cleaning of the weapon.

**LUBRICATING THE WEAPON****CAUTION**

**Use only authorized lubricants. DO NOT mix lubricants.**

Lubricate the weapon in accordance with TM 05539-OR\_ and TM 9150-15/1\_, *Military Use of Cleaner, Lubricant, Preservative (CLP) for Weapons and Support Equipment*.

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)  
INCLUDING LUBRICATION INSTRUCTIONS - CONTINUED**

**0008 00**

***INTERMEDIATE PREVENTIVE MAINTENANCE CHECKS AND SERVICES***

A MOS 2112 conducts a semi-annual inspection at the Intermediate Maintenance Activity (IMA). Conduct the inspection in accordance with the instructions outlined in this work package.

**Table 1. Intermediate Preventive Maintenance Checks and Services (PMCS) Quarterly Schedule.**

ITEM INSPECTED	PROCEDURE/CONDITIONS
<b>General</b>	
Sniper Rifle	<ol style="list-style-type: none"> <li>1. Field strip the weapon in accordance with TM 05539-OR_.</li> <li>2. Disassemble the weapon as needed in accordance with WP 0012 00.</li> <li>3. Inspect all parts for cleanliness. Imperfections to the overall finish of the scope, rifle, and stock do not meet criteria for evacuation.</li> </ol>
Serial Numbers	<ol style="list-style-type: none"> <li>1. Check that the last four digits of the weapon's serial number match the serial numbers on the bolt handle, trigger guard, and stock.</li> <li>2. These parts are not interchangeable with any other weapons.</li> </ol>
Weapon Record Book	<ol style="list-style-type: none"> <li>1. Ensure that the Weapon Record Book (Part II, Tube Data) accompanies the weapon.</li> <li>2. Calculate and verify all round count entries for correctness.</li> </ol>
Scope	<ol style="list-style-type: none"> <li>1. Check that the elevation, windage, parallax, and reticle brightness knobs move freely in both directions with distinct clicks.</li> <li>2. Inspect lenses for scratches, pits, or chips that interfere with the field of view. Scratches, pits, or chips are acceptable as long as they are not in the direct field of view.</li> <li>3. Ensure optical platform for the telescope is securely fastened and that all four screws are present.</li> <li>4. If any of the above problems exist, evacuate to higher level of maintenance for repairs. Imperfections to the overall finish of the scope do not meet criteria for evacuation.</li> </ol>

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)  
INCLUDING LUBRICATION INSTRUCTIONS - CONTINUED**

0008 00

**INTERMEDIATE PREVENTIVE MAINTENANCE CHECKS AND SERVICES - CONTINUED**

**Table 1. Intermediate Preventive Maintenance Checks and Services (PMCS) Quarterly Schedule - Continued.**

ITEM INSPECTED	PROCEDURE/CONDITIONS
<b>Scope Assembly</b>	
Scope Rings	<p>1. Ensure scope rings are firmly attached to the optical platform and the scope itself is secure inside the scope rings.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>Unless the scope is repaired or replaced at the IMA, there should be no reason to move or disturb the scope inside the scope rings; this may affect the weapon's zero, horizontal, and vertical alignment of the scope to the weapon.</b></p> <p>2. Adjustment of the scope inside the scope rings is not authorized at the Organizational Maintenance level. However, the Organizational Maintainer (OM) may adjust the scope assembly (rings attached) for eye relief along the axis of the optical platform (rail). Retorque to 65 lb-in.</p>
<b>Stock Assembly</b>	
Stock Assembly	<p>1. Inspect the stock for cracks and overall serviceability. Pay special attention to the bridge.</p> <p>2. Check to ensure that the sling swivel sockets are serviceable and secure within the stock.</p> <p>3. Ensure that the recoil pad assembly is serviceable and the recoil pad is not frayed, excessively worn, or loose.</p> <p>4. Inspect the cheek piece and cheek piece screws for serviceability.</p> <p>5. Inspect the bipod stud to ensure that it is serviceable, tight and aligned properly.</p> <p>6. Inspect the bedding to be sure that it is free of oil, dirt, and debris. Wipe clean the bedding surfaces as necessary using acetone or denatured alcohol; do not scratch or otherwise damage the bedding.</p> <p>7. If any of the above items are missing, worn, or unserviceable, repair as authorized or evacuate to higher level of maintenance.</p>
<b>Trigger Guard</b>	
Magazine Assembly	<p>1. Inspect the trigger guard assembly for serviceability.</p> <p>2. Inspect the magazine follower and follower spring for serviceability. Ensure spring seats correctly in floor plate.</p> <p>3. If any of the above items are missing, worn, or unserviceable, evacuate to higher level of maintenance.</p>

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)  
INCLUDING LUBRICATION INSTRUCTIONS - CONTINUED**

0008 00

**INTERMEDIATE PREVENTIVE MAINTENANCE CHECKS AND SERVICES - CONTINUED**

**Table 1. Intermediate Preventive Maintenance Checks and Services (PMCS) Quarterly Schedule - Continued.**

ITEM INSPECTED	PROCEDURE/CONDITIONS
<b>Barrel and Receiver Assembly</b>	
	<ol style="list-style-type: none"> <li>1. Inspect the barrel for bulges, burrs, obstructions, or pits in the chamber or bore. Refer to WP 0016 00.</li> <li>2. Inspect the muzzle end of the barrel for a serviceable crown; the lands and grooves should have no nicks or burrs. If any of the above problems exist, evacuate to higher level of maintenance for repairs.</li> <li>3. (M40A5 only) Inspect the muzzle break for looseness, cracks, and/or damage. Replace muzzle break as necessary and re-zero weapon with and without suppressor.</li> <li>4. Ensure the stock's bedding surfaces are clean and oil free. Place the stock topside up in a padded vise.</li> <li>5. Carefully insert the recoil lug of the barrel and receiver assembly straight into the lug mortise inside the stock.</li> <li>6. Assemble trigger guard and place on stock.</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>When installing the trigger guard screws, ensure that the short screw goes into the hole in the front portion of the trigger guard. The long screw goes into the rear hole next to the trigger guard bow.</b></p> <ol style="list-style-type: none"> <li>7. Install forward trigger guard screw first, then the rear screw. Tighten both screws by hand.</li> <li>8. Review the Weapon Record Book for the latest torque setting. Both trigger guard screws are torqued at the same setting.</li> <li>9. Using an -in.-lbs. torque wrench, set proper torque for the weapon in accordance with the Weapon Record Book and then torque the trigger guard screws; front screw first, then the rear screw. Do not over-torque or under-torque these screws, as the weapon's accuracy will be affected.</li> </ol>
<b>Bolt Assembly</b>	
Bolt	<ol style="list-style-type: none"> <li>1. Inspect the face of the bolt and bolt lugs for cracks, chips, or pitting. Evacuate to higher level of maintenance for repairs.</li> <li>2. Check headspace. Refer to WP 0023 00.</li> </ol>
Extractor	<ol style="list-style-type: none"> <li>1. Ensure extractor is securely in place and functioning properly inside the bolt face.</li> <li>2. The extractor should have spring tension and return to position after being depressed. Extractor should not be chipped, worn, or fouled with brass chips. If any problems exist, evacuate to higher level of maintenance for repairs.</li> </ol>
Ejector	<ol style="list-style-type: none"> <li>1. Check ejector for proper spring tension.</li> <li>2. Depress the ejector; it should depress slightly below bolt face and fully return when released. If any problems exist, evacuate to higher level of maintenance for repairs.</li> </ol>

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)  
INCLUDING LUBRICATION INSTRUCTIONS - CONTINUED**

0008 00

**INTERMEDIATE PREVENTIVE MAINTENANCE CHECKS AND SERVICES - CONTINUED**

**Table 1. Intermediate Preventive Maintenance Checks and Services (PMCS) Quarterly Schedule - Continued.**

ITEM INSPECTED	PROCEDURE/CONDITIONS
<b>Bolt Assembly - Continued</b>	
Firing Pin Assembly	<ol style="list-style-type: none"> <li>1. Using the bolt disassembly tool, disassemble the bolt (WP 0013 00) and remove the firing pin assembly from the bolt.</li> <li>2. Inspect the firing pin for cleanliness and proper lubrication.</li> </ol> <p style="text-align: center;"><b>CAUTION</b></p> <p style="text-align: center;"><b>DO NOT use grease on the firing pin spring as this could cause misfires in cold weather.</b></p> <ol style="list-style-type: none"> <li>3. Ensure firing pin is straight and has a smooth, round tip. Refer to WP 0014 00.</li> <li>4. Lightly coat threads of bolt plug with grease and then reassemble the firing pin assembly into the bolt.</li> <li>5. Gage firing pin protrusion using the firing pin protrusion gage. Refer to WP 0013 00.</li> <li>6. Ensure assembly is screwed all the way into the bolt and that the cocking leg lines up with the small notch on the back of the bolt.</li> </ol>
<b>Safety</b>	
Safety	<ol style="list-style-type: none"> <li>1. Check the safety for proper functioning.</li> <li>2. With the bolt cocked and weapon on "SAFE", the rifle should not fire. If any problems exist, evacuate to higher level of maintenance for repairs. No repairs or adjustments are authorized at the Organizational Maintenance level.</li> </ol>
<b>Bipod Assembly</b>	
Bipod	<ol style="list-style-type: none"> <li>1. Inspect bipod assembly for function and cleanliness.</li> <li>2. Legs should extend, hold, and retract properly.</li> <li>3. Bipod should pivot both left and right and be able to lock in any position with the pod lock. No repairs are authorized for the bipod assembly. If damaged, replace the entire bipod assembly.</li> </ol>
<b>Function Check</b>	
	<ol style="list-style-type: none"> <li>1. Reassemble the remaining weapon system components, if any.</li> <li>2. Perform the function check outlined in WP 0020 00. If the weapon does not function properly and the cause cannot be determined by using the troubleshooting chart, evacuate to higher level of maintenance for repairs.</li> </ol>

**END OF WORK PACKAGE**

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**GENERAL MAINTENANCE INSTRUCTIONS**

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0009 00

**THIS WORK PACKAGE COVERS**

Scope	Repair Instructions
Work Safety	Lubrication Instructions
General Information	Standard Tool Requirements
Cleaning Instructions	Applying Torque
Inspection Instructions	Tagging Instructions

---

**INITIAL SETUP****Maintenance Level**

Organizational

**References**

TM 4750-OD/1A\_

TM 9-247\_

WP 008 00

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**SCOPE**

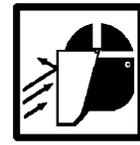
These general maintenance instructions contain general shop practices and specific methods you must be familiar with to properly maintain the M40A3/A5 Sniper Rifle.

**WORK SAFETY**

1. Before starting a task, think about the risks and hazards to your safety as well as that of others. Wear protective gear such as safety goggles or lenses, safety shoes, rubber apron, or gloves. Protect yourself against injury.
2. Observe all WARNINGS, CAUTIONS, and NOTES.

**GENERAL INFORMATION**

1. Before beginning a task, find out how much repair, modification, or replacement is needed to repair the weapon as described in this manual. Sometimes the reason for equipment failure can be seen right away and complete teardown is not necessary. Disassemble the weapon only as far as necessary to repair or replace damaged or broken parts.
2. All tags and forms attached to the equipment must be checked to learn the reason for removal from service. Check all Modification Instructions (MIs) and Technical Bulletins (TBs) for equipment changes and updates.
3. In some cases a part may be damaged by removal. If the part appears to be good, and other parts behind it are not defective, leave it on and continue the procedure.

**CLEANING INSTRUCTIONS****WARNING**

- Use only Cleaner, Lubricant, and Preservative (CLP) for cleaning and lubrication of the M40A3/A5 Sniper Rifle in all but the most severe conditions.
- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Refer to TM 9-247, *Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materiel Including Chemicals*, for correct information.
- Cloths or rags saturated with solvent cleaning compound must be disposed of IAW authorized facilities' procedures.
- Eye shields must be worn when cleaning with a wire brush. Flying rust and metal particles may cause injury to personnel.
- Particles blown by compressed air are hazardous. Use a maximum of 30 psi (207 kPa) when cleaning components. **DO NOT** exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. **DO NOT** direct compressed air against human skin. Make sure air stream is directed away from user and other personnel in the area. To prevent injury, user must wear protective goggles or face shield.
  - a. Cleaning instructions are the same for the majority of the parts and components of the weapon.
  - b. The importance of cleaning must be thoroughly understood by maintenance personnel. Great care and effort are required in cleaning. Dirt and foreign material are a constant threat to satisfactory maintenance. The following should apply to all cleaning, inspection, repair, and assembly operations:
    - (1) Clean all parts before inspection, after repair, and before assembly.
    - (2) To prevent contamination, hands should be kept free of any accumulation of grease, which can collect dust, dirt, or grit.
    - (3) After cleaning, all parts should be covered or wrapped to protect them from dust and dirt. Parts that are subject to rust should be lightly oiled.
- Failure to follow these warnings may result in injury to personnel.

1. **Cleaning Disassembled Parts.**

- a. Place all disassembled parts in wire baskets for cleaning.
- b. Dry and cover all cleaned parts.
- c. Place parts on or in "racks" and hold for inspection or repair.
- d. All parts subject to rusting must be lightly oiled and wrapped.
- e. Keep all related parts and components together. Do not mix parts.

2. **Castings.**

- a. Clean inner and outer surfaces of castings and all areas with CLP and/or bore solvent.
- b. Use a stiff brush to remove sludge and gum deposits.
- c. Clear out all tapped (threaded) holes with compressed air to remove dirt and solvent cleaning compound.

3. **Machined Surfaces.**

- a. Clean machined surfaces with Cleaning compound, powder solvent (Item 8, WP 0030 00).
- b. Dry surfaces with compressed air.

**CLEANING INSTRUCTIONS - CONTINUED**

4. **Mated Surfaces.** Lightly coat with oil and wrap all parts subject to rust before storing.

**INSPECTION INSTRUCTIONS**

1. **General.** All components and parts must be carefully checked to determine if they are serviceable for reuse, if they can be repaired, or if they must be scrapped.
2. **Drilled and Tapped (Threaded) Holes.**
  - a. Inspect for wear, distortion (stretching), cracks, or any other damage in or around holes.
  - b. Inspect threaded areas for wear, distortion, or evidence of cross-threading.
3. **Castings.**
  - a. Inspect all ferrous and non-ferrous castings for cracks using a magnifying glass and strong light. Particularly check areas around studs, pipe plugs, threaded inserts, and sharp corners. Replace all cracked castings.
  - b. Inspect machined surfaces for nicks, burrs, or raised metal. Mark damaged areas for repair or replacement.
  - c. Inspect all pipe plugs, pipe plug openings, screws, and screw openings for damaged or stripped threads.
  - d. Check all mating surfaces.
4. **Studs, Bolts, and Screws.** Replace if threads are damaged, bent, or stretched.
5. **Machine-Tooled Parts.** Inspect for cracks, breaks, elongated holes, wear, and chips. Replace any damaged parts.
6. **Machined Surfaces.** Inspect for cracks, evidence of wear, galled or pitted surface, burrs, nicks, and scratches.
7. **Mating Surfaces.** Inspect for seal, secure fit, and pitting.
8. **Rusted Surfaces.** Inspect for pitting, holes, and severe damage.
9. **Internal Parts.** Inspect for cracks, nicks, burrs, evidence of overheating, and wear.
10. **Externally Exposed Parts.** Inspect for breaks, cracks, rust damage, and wear.
11. **Springs.** Inspect for broken, collapsed, and twisted coils.

**REPAIR INSTRUCTIONS**

1. **General.**
  - a. Any repair procedure specific to a particular part or component is covered in the work package relating to that item.

**CAUTION**

**Repaired items must be thoroughly cleaned to remove metal chips and abrasives, to prevent them from entering working parts of the weapon. Failure to comply could cause damage to equipment.**

- b. After repair, clean all parts thoroughly.
2. **Castings.**

Only minor repairs to machined surfaces are permitted. Remove minor nicks, burrs, and scratches with:

  - a. Fine-mill file.
  - b. Crocus cloth dipped in solvent cleaning compound.

***LUBRICATION INSTRUCTIONS***

Refer to PMCS (WP 0008 00) for detailed instructions on proper lubrication. The following are some general practices to remember:

- a. Use correct lubricant.
- b. Keep lubricants clean.
- c. Lubricate clean, disassembled, and new parts to prevent rust.

***STANDARD TOOL REQUIREMENTS***

Some maintenance tasks may require special or fabricated tools. The initial setup of the procedure will specify any special or fabricated tools needed to perform that procedure. Use these special tools only for the maintenance procedures for which they are designed or called out. If you are unfamiliar with a required tool, see your supervisor.

***APPLYING TORQUE***

If a unique torque value is required, it will be provided in a procedural step in the task.

***TAGGING INSTRUCTIONS***

1. Use marker tags to identify all parts which may be hard to identify or replace later. Fasten tags to parts during removal by wrapping wire fasteners around or through parts and twisting ends together. Position tags out of the way during cleaning, inspection, and repair. Mark tags with a pencil, pen, or marker.
2. Identify and tag other parts by name and installed location, as required.

***END OF WORK PACKAGE***

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**CLEANING THE WEAPON**

**0010 00**

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**THIS WORK PACKAGE COVERS**

Cleaning

---

**INITIAL SETUP**

**Maintenance Level**

Organizational

**Equipment Conditions**

Weapon cleared (WP 0012 00)

**References**

TM 05539-OR\_

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***CLEANING***

**CAUTION**

**DO NOT allow Cleaner, Lubricant, and Preservative (CLP) or any other solvent to come in contact with the telescope lenses.**

Cleaning is a vital part of organizational preventive maintenance. The weapon should be cleaned as soon as practical after firing and after each time it is exposed to field conditions or moisture. Use the procedures outlined in TM 05539-OR\_.

**END OF WORK PACKAGE**



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**MAGAZINE ASSEMBLY**

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0011 00

**THIS WORK PACKAGE COVERS**

Inspection

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**INITIAL SETUP****Maintenance Level**

Organizational

**Equipment Conditions**

Weapon cleared (WP 0012 00)

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**WARNING**

**Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in WP 0012 00. Failure to follow this warning may cause injury or death to personnel.**

**INSPECTION**

1. Check the fit of the magazine (2) with the bolt (1) closed. The magazine should insert, lock, and unlock easily.
2. With the magazine (2) in place, pull the bolt (1) back to the rear.
3. Remove magazine (2).
4. Replace magazine (2) if broken or damaged.



M40-018

**END OF WORK PACKAGE**



**THIS WORK PACKAGE COVERS**

Clearing and Unloading the Weapon, Field Stripping the Weapon

**INITIAL SETUP****Maintenance Level**

Organizational

**References**

WP 0016 00

**CLEARING AND UNLOADING THE WEAPON****WARNING**

- **Always assume that every weapon is loaded until it is determined through visual and physical inspection that it is not.**
- **After unloading the weapon, and with the bolt handle to the rear, visually and physically check the chamber for ammunition.**
- **Failure to follow these warnings may result in injury or death to personnel from negligent discharge.**

**CAUTION**

**DO NOT leave rounds in the magazine for extended periods. The follower spring will lose tension and cause feeding malfunctions.**

1. **Procedure for Clearing the Weapon.**

- a. **On Safe.** The safety lever located on the right side of the receiver is already rearward in the "SAFE" position. (The weapon must be cocked before the safety lever can be pushed forward to the "FIRE" position).
- b. **Remove the Magazine.** Depress magazine release rearward until the magazine releases. Remove magazine assembly.
- c. **Unlock Bolt.** Rotate the bolt handle upward and pull to the rear to unlock the bolt. Watch for live round or empty cartridge to be ejected.
- d. **Inspect Chamber.** Inspect chamber for live round or empty cartridge. Visually inspect the chamber through the ejection port. Physically inspect the chamber with finger to check for cartridge case. Remove any live round or empty cartridge from the chamber or from the magazine well.

**FIELD STRIPPING THE WEAPON**

**Procedure for Field Stripping the Weapon.** Field strip the weapon into its three major groups: Magazine Assembly, Bolt Body Assembly, and Barrel and Receiver Assembly. Leave the Barrel and Receiver Assembly attached to the stock assembly as one major group.

- a. **Magazine Disassembly.**

**WARNING**

**Before field stripping, make certain the weapon is cleared and safe.**

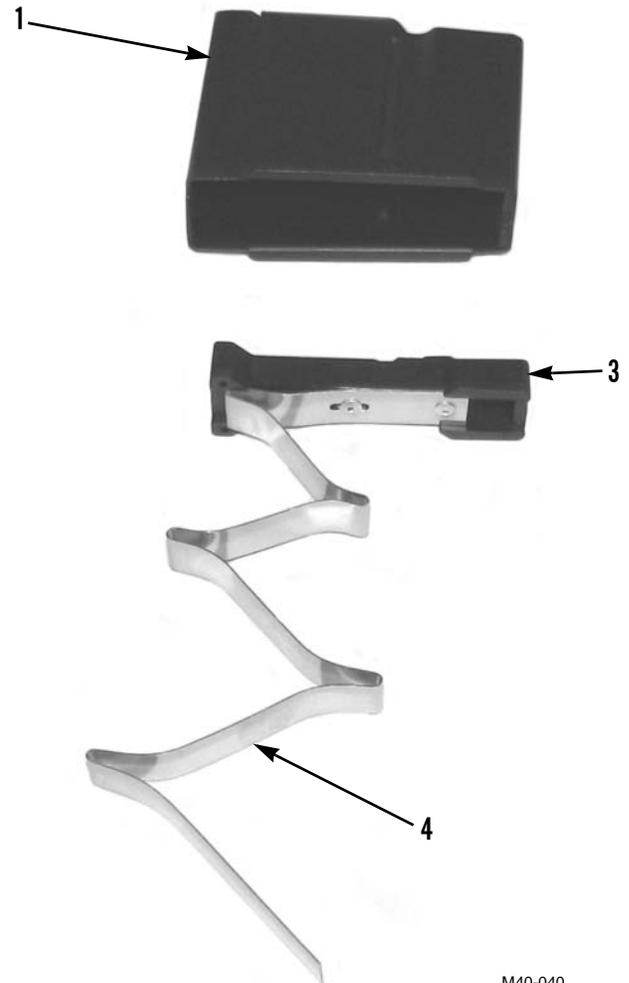
**FIELD STRIPPING THE WEAPON - CONTINUED**

1. If inserted, remove magazine assembly.
2. Remove floor plate (2) from magazine assembly (1).



M40-039

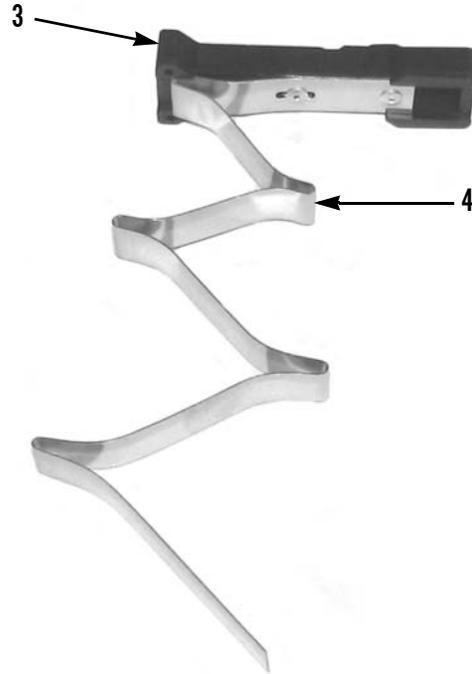
3. Remove spring (4) and follower assembly (3) from magazine assembly (1).



M40-040

**FIELD STRIPPING THE WEAPON - CONTINUED**

4. Remove follower (3) from spring (4).



M40-041

5. Depress and hold the bolt release while pulling the bolt body assembly to the rear and out of the barrel and receiver assembly. If further disassembly of the bolt is required, refer to *Bolt Body Assembly Maintenance* (WP 0013 00).
6. Disassembly is now complete. If further disassembly of receiver and stock are required, refer to *Removal of Barreled Receiver from Stock* (WP 0016 00).

**NOTE**

**The operator is NOT authorized to disassemble the weapon beyond this point.**

**END OF WORK PACKAGE**



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**BOLT BODY ASSEMBLY MAINTENANCE**

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0013 00

**THIS WORK PACKAGE COVERS**Inspection, Disassembly, Reassembly

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**INITIAL SETUP****Maintenance Level**

Organizational

**Tools and Special Tools**

Bolt disassembly tool

Firing pin protrusion gage

E2900/E7900 Tool Kit

**Equipment Conditions**

Weapon cleared (WP 0012 00)

Bolt assembly removed (WP 0012 00)

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**WARNING****DO NOT interchange bolt body assemblies from one weapon to another.****INSPECTION**

1. Check that the bolt handle is firmly attached to the bolt body assembly and the solder has no cracks. If cracked, evacuate to higher level maintenance.
2. Inspect the face of the bolt for cracks, chips or pitting. If unserviceable, evacuate to higher level maintenance.
3. Inspect the firing pin to make sure it is straight and has a smooth, round tip. Ensure that firing pin is clean and lightly oiled. If unserviceable, replace firing pin assembly.
4. Check the extractor for cracks, chips or burrs and for proper tension by pushing toward the outer edge of the bolt face; there should be some resistance and the extractor should return to its original position. If unserviceable, evacuate to higher level maintenance for extractor replacement.
5. Check the ejector for cracks, chips or burrs and for proper tension by depressing inward; there should be some resistance and the ejector should return to its original position. Ejector should depress slightly below the face of the bolt.

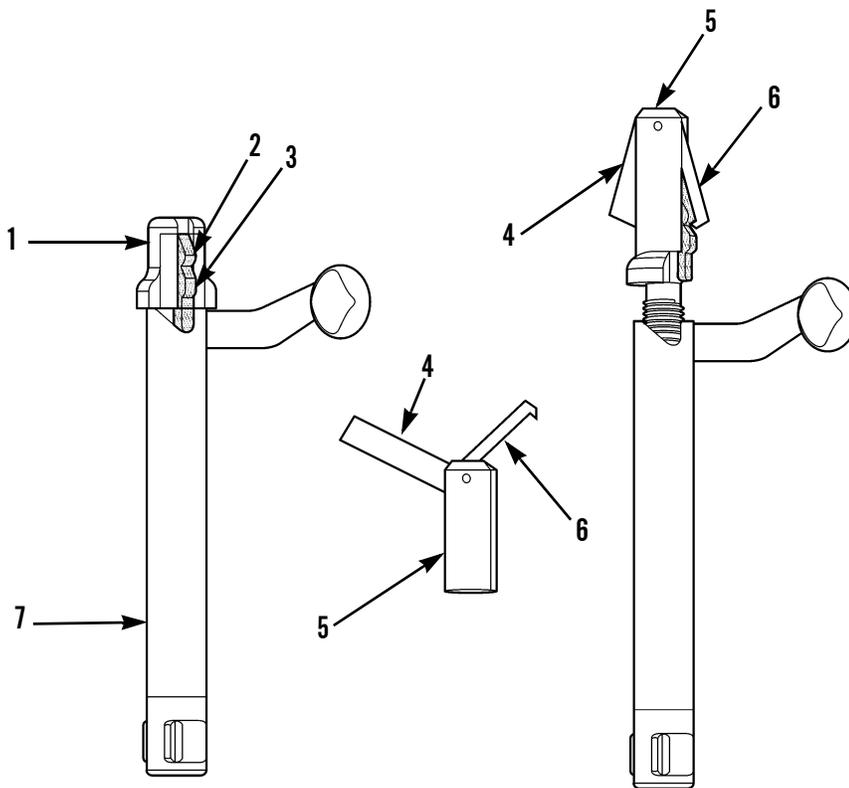
**DISASSEMBLY**

1. Place the bolt body assembly (7) in a vertical position with the handle up.
2. Place the hook (6) of the bolt disassembly tool (5) into the disassembly notch (3) in the firing pin cap (2).

**WARNING**

**The firing pin is under spring tension. Release it slowly to prevent injury to personnel.**

3. Pull down on the handle (4) of the bolt disassembly tool (5) to compress the firing pin spring and relieve the tension on the bolt body assembly (7).
4. Turn the bolt disassembly tool (5) counterclockwise to unscrew and separate the firing pin assembly (1) from the bolt body assembly (7).



M40-031

**DISASSEMBLY - CONTINUED**

- Once the firing pin assembly (1) is separated from the bolt body assembly (7), use a 1/16-in. punch and a 4-oz hammer to drive out the ejector retaining pin (10).

**WARNING**

**The ejector is under spring tension. Use care to prevent it from flying free. Failure to follow this warning may result in injury or death to personnel.**

**NOTE**

**Replace knurled retaining pin with required spring pin. Always use a new spring pin whenever the ejector retaining pin is removed.**

- With the bolt handle in the down position, remove ejector (9) by drifting (right to left) the ejector retaining pin (10) just far enough to release the ejector and ejector spring (8) using a 1/16-in. punch and ball peen hammer.

**REASSEMBLY****CAUTION**

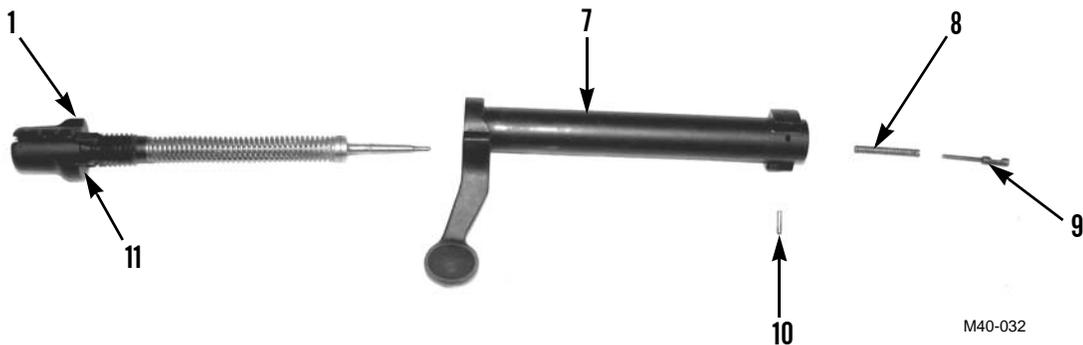
**DO NOT interchange firing pin assembly with another bolt body assembly. This could cause a short or long firing pin protrusion problem.**

- Install the ejector spring (8) and the ejector (9) into the bolt body assembly (7).

**NOTE**

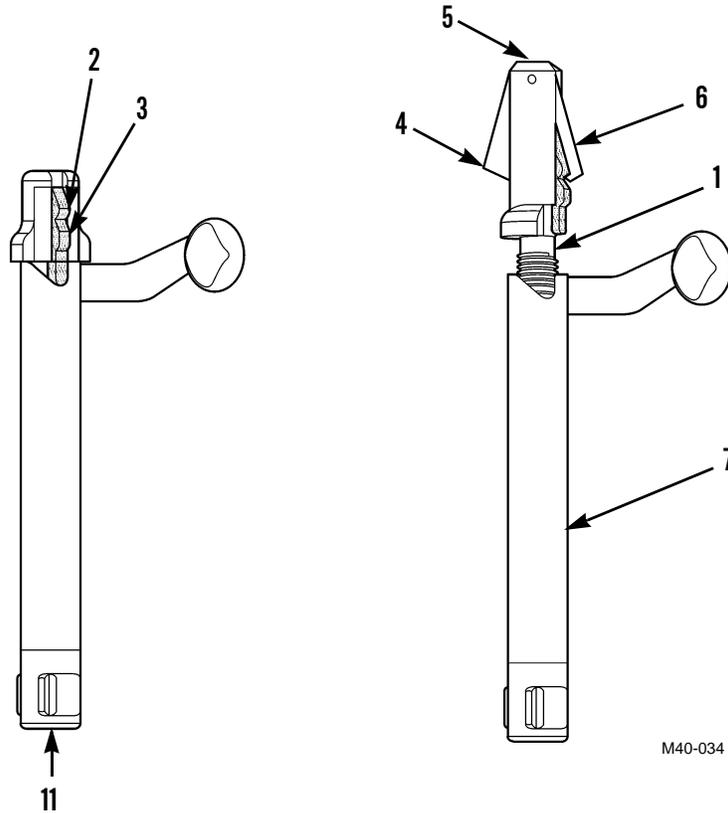
**Replace knurled retaining pin with required spring pin. Always use a new spring pin whenever the ejector retaining pin is removed.**

- Using punch and hammer, install the ejector retaining pin (10) into the bolt body assembly (7).
- Lightly grease the thread of the bolt lug (11) and then screw the firing pin assembly (1) into the bolt body assembly (7) by turning clockwise.

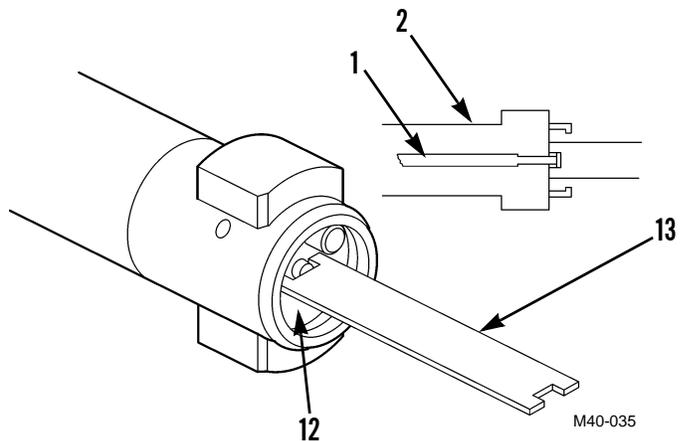


**REASSEMBLY - CONTINUED**

4. Place the hook (6) of the bolt disassembly tool (5) into the disassembly notch (2) on the firing pin cap (3) and pull the handle (4) to compress the firing pin spring.
5. Screw in firing pin assembly (1) until the cocking leg is fully seated and in the fired position to the back of the bolt body assembly (7). Ensure the firing pin protrudes from the bolt face, then measure firing pin protrusion.

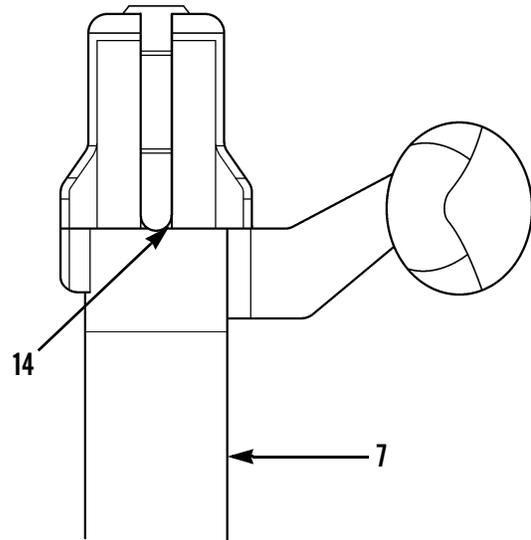


6. Inspect the firing pin (1) protrusion using the firing pin protrusion gage (13) inside the bolt face (12). The firing pin protrusion is correct if the gage hits the firing pin on the 0.044 minimum and clears on the 0.060 maximum. If the protrusion is too short or too long, replace the firing pin assembly.



**REASSEMBLY - CONTINUED**

7. Turn clockwise until cocking leg on firing pin assembly goes into the small notch (14) on rear rim of the bolt body assembly (7). The bolt assembly is now cocked.



M40-036

**END OF WORK PACKAGE**



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**FIRING PIN ASSEMBLY**

**0014 00**

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**THIS WORK PACKAGE COVERS**

Disassembly, Inspection, Reassembly

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**INITIAL SETUP**

**Maintenance Level**

Organizational

**References**

WP 0022 00

**Equipment Conditions**

Weapon cleared (WP 0012 00)

Firing pin removed from bolt (WP 0013 00)

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**WARNING**

**Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in WP 0012 00. Failure to follow this warning may cause injury or death to personnel.**

**DISASSEMBLY**

No disassembly of the firing pin assembly (1) is authorized. Remove the firing pin assembly from the bolt body assembly. Refer to *Bolt Assembly Maintenance* (WP 0013 00) in this manual.



M40-019

**INSPECTION****NOTE**

**DO NOT disassemble the firing pin assembly. Any worn or unserviceable part requires replacement of complete assembly.**

1. Inspect the firing pin assembly for cracks or damages. Ensure that the firing pin tip is smooth and round. Damages or defects to any part require replacement of the entire firing pin assembly.
2. Verify the protrusion of the firing pin in the face of the bolt. Refer to WP 0013 00 for procedures on checking firing pin protrusion.

**REASSEMBLY**

Reassemble the firing pin assembly into the bolt body assembly. Refer to *Bolt Body Assembly Maintenance* (WP 0013 00) for the procedure on reassembly of the bolt.

**END OF WORK PACKAGE**

**THIS WORK PACKAGE COVERS**

Disassembly, Inspection, Reassembly

**INITIAL SETUP****Maintenance Level**

Organizational

**Equipment Conditions**

Weapon cleared (WP 0012 00)

**Tools and Special Tools**

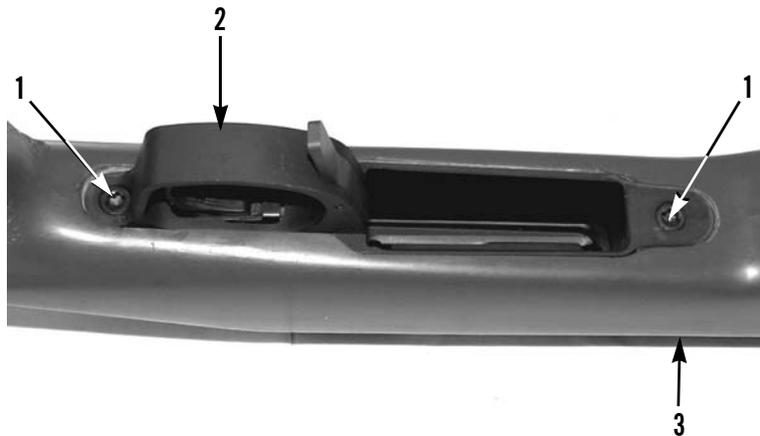
E2900/E7900 Tool Kit

**WARNING**

**Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in WP 0012 00. Failure to follow this warning may cause injury or death to personnel.**

**DISASSEMBLY**

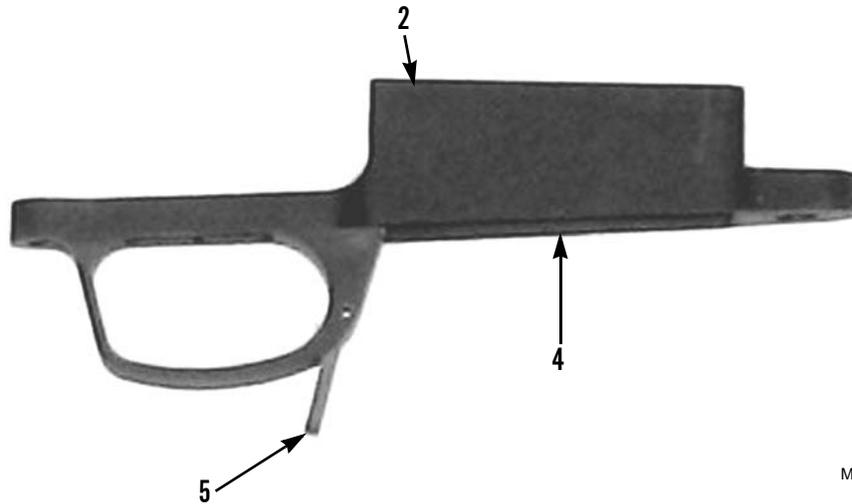
1. Remove two trigger guard screws (1) from trigger guard (2).
2. Remove the trigger guard (2) from the stock (3).



M40-029

**INSPECTION**

1. Inspect trigger guard (2) and magazine well (4) for cracks or damage. If cracks or damage exist, evacuate to a higher level of maintenance.
2. Insert magazine into magazine well (4) of trigger guard (2). Ensure magazine locks into magazine well.
3. Ensure magazine release (5) has spring tension. If unserviceable, evacuate to higher level maintenance.



M40-030

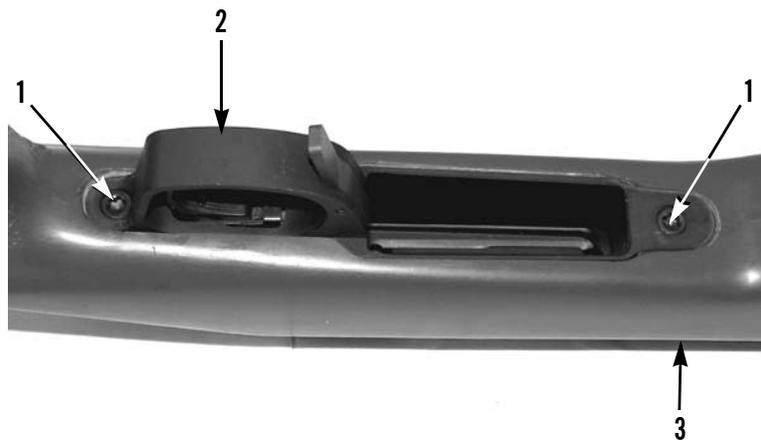
**REASSEMBLY**

1. Install trigger guard (2) into stock (3) of weapon.

**NOTE**

**Trigger guard screws are different lengths. Ensure the long screws are installed in the rear and the short screw in the front and torqued to specifications.**

2. Install two trigger guard screws (1) into trigger guard (2).



M40-029

**END OF WORK PACKAGE**

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**REMOVAL OF BARRELED RECEIVER FROM STOCK**

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0016 00

**THIS WORK PACKAGE COVERS**

Disassembly, Inspection, Reassembly

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**INITIAL SETUP****Maintenance Level**

Organizational

**References**

WP 0020 00

**Tools and Special Tools**

E2900/E7900 Tool Kit

Vise with padded jaws

T30 Torx wrench

**Equipment Conditions**

Weapon cleared (WP 0012 00)

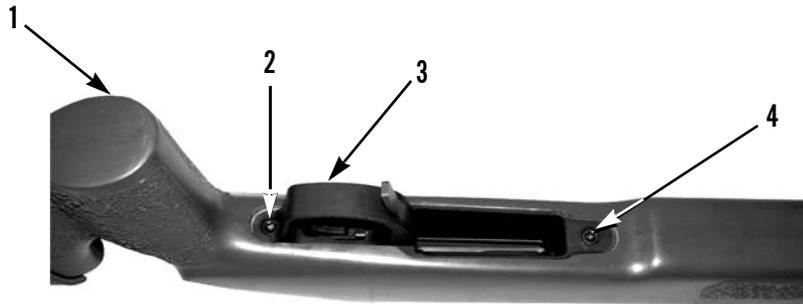
Suppressor removed (If necessary) (M40A5 only)

Telescope removed

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**DISASSEMBLY**

1. Hold the weapon with one hand and support heel of stock on workbench.
2. Remove two trigger guard screws (2 and 4) from trigger guard (3).
3. Remove the trigger guard (3) from stock (1).



M40-020

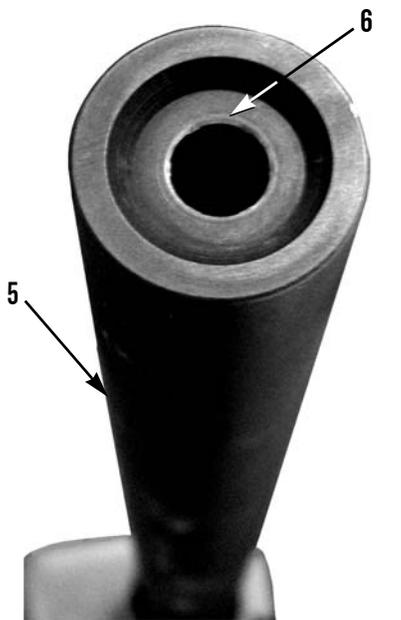
**CAUTION**

**Never rock barrel and receiver to the weapon's front and rear. This may damage the bedding surface and decrease accuracy.**

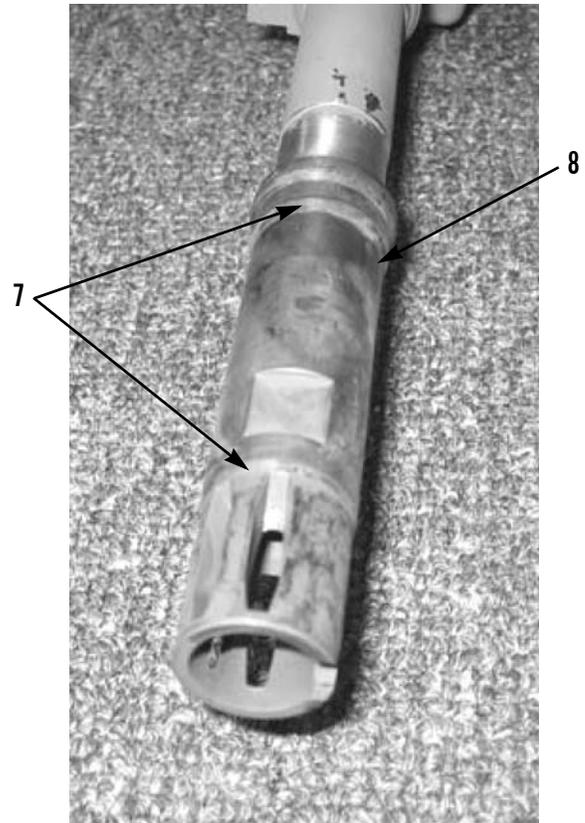
4. Using padded vise jaws to prevent marring the stock, clamp stock in a vise forward of the recoil lug. Open the bolt to the fully open position and grasp the barrel and bolt body. Using thumbs to apply downward pressure on the stock, pull the barrel and receiver straight up. If necessary, rock the barreled action from side to side while lifting.

**INSPECTION**

1. On the stock, check the bedding on top and under trigger guard for cracks, powdering and shrinkage. Pay special attention to the bridge on stock. Check for cracks. Check that all edges are rounded. Using a rag dampened with acetone, clean glass bedding surfaces of the stock of all oil, grease, dirt, and debris. Remove all excess oil from the barreled action where it contacts the glass bedding.
2. (M40A3) Inspect the muzzle end of the barrel (5) for a serviceable crown (6). The lands and grooves should come to a sharp end with no nicks or burrs. If unserviceable, evacuate to a higher level of maintenance. (M40A5) Inspect muzzle break (8) for looseness, damage, and/or cracks. Inspect bearing surfaces (7) for burrs. If unserviceable evacuate to a higher level of maintenance.

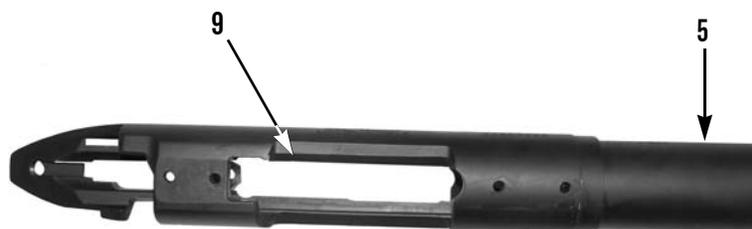


M40-021



M40-086

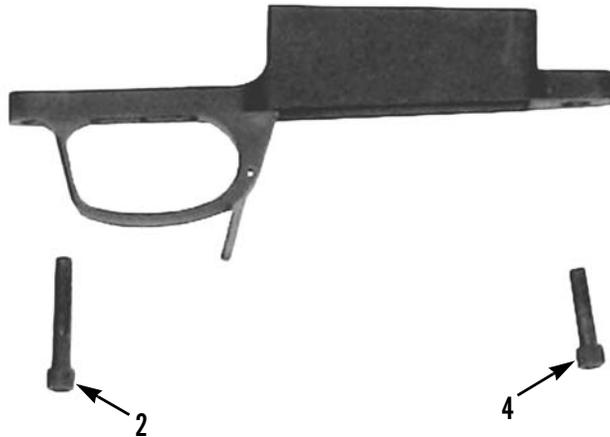
3. Inspect the external surface of the barrel (5) and receiver (9) for burrs and visible cracks. If found, evacuate to a higher level of maintenance.
4. Inspect inside the receiver (9) and chamber area for nicks or burrs that would cause hard extraction or chambering a ruptured case, or break extraction upon firing. If any of these conditions exist, the weapon is unserviceable. Evacuate to a higher level of maintenance.



M40-022

**INSPECTION - CONTINUED**

5. Inspect the trigger guard screws (2 and 4) for wear, unserviceable threads, and correct length. If unserviceable or incorrect length, evacuate to higher level maintenance.



M40-023

**REASSEMBLY**

1. Place the barreled receiver in the stock and press straight down on the receiver over the recoil lug. Ensure barreled receiver is fully seated in stock.

**CAUTION**

- When installing the trigger guard screws, ensure that the short screw goes into the hole in the front portion of the trigger guard.
  - The long screw goes into the rear hole next to the trigger guard bow.
2. Install the forward trigger guard screw (4) first, followed by the rear trigger guard screw (2). Snug both trigger guard screws by hand. Using a torque wrench, tighten to setting specified in the Weapon Record Book. Torque the forward trigger guard screw first, then the rear trigger guard screw.



M40-020A

3. Once the weapon is completely reassembled, perform the *Function Check*. Refer to WP 0020 00.
4. Install suppressor if necessary (TM 05539-OR\_).

**END OF WORK PACKAGE**



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**MUZZLE BREAK MAINTENANCE**

**0017 00**

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**THIS WORK PACKAGE COVERS**

Inspection, Removal, Installation, Timing Wheel Instructions

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**INITIAL SETUP**

**Maintenance Level**

Organizational

**Tools and Special Tools**

E2900/E7900 Tool Kit

Wrench, combination

Torque wrench

**Materials/Parts**

Shim kit

Acetone

Cotton swabs

Thread sealant (Rocksett®)

**Equipment Conditions**

Weapon cleared (WP 0012 00)

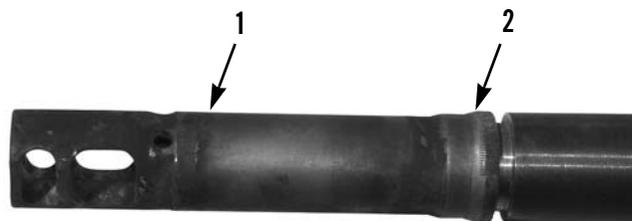
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**INSPECTION**

**NOTE**

**Removal of muzzle break is not necessary for inspection. If muzzle break is removed/replaced, shim kit is required for installation.**

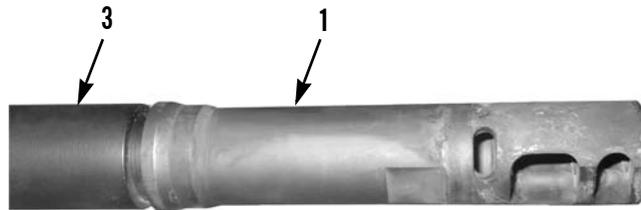
Inspect the muzzle break (1) for looseness, misalignment, and cracks or other damage. Inspect bearing surfaces (2) for wear, damage, or burrs that may affect proper seating of the suppressor.



M40-090

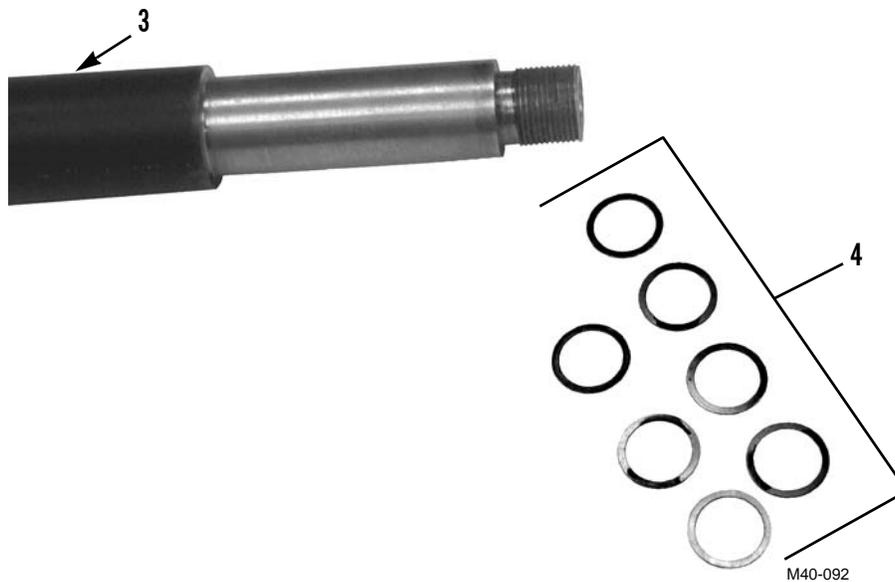
**REMOVAL**

1. Secure the barrel (3) in a vise or fixture.
2. Using the combination wrench, loosen and remove the muzzle break (1) by rotating it counter-clockwise while facing the muzzle of the barrel (3).



M40-091

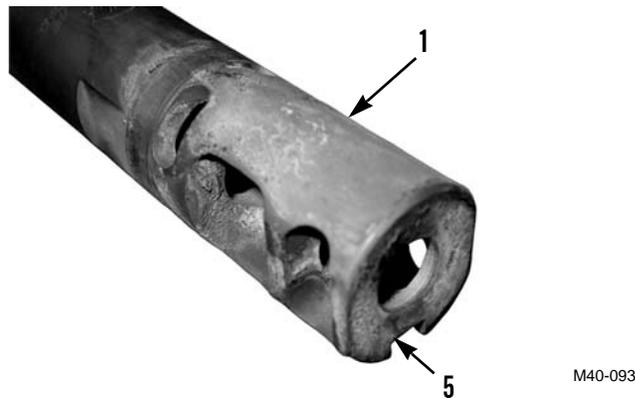
3. Remove and discard any/all shims (4) from the barrel (3).
4. Remove the barrel (3) from the vise or fixture.



M40-092

**INSTALLATION**

1. With the barrel (3) pointing up (vertical), install the shims (4) on the barrel. Ensure the shims are centered on the barrel.
2. Install the muzzle break (1) over the shims and onto the barrel (3) and slowly tighten by hand.
3. Secure the barrel (3) in a vise or fixture.
4. Using the combination wrench and a torque wrench, tighten the muzzle break (1) to 20-23 lb-ft.
5. Check alignment of the index notch (5); it should be positioned at bottom dead center (BDC) after torque. If the index notch is not at BDC, add shims between the barrel (3) and muzzle break (1) as described until alignment is achieved. Consult the shim chart below and the timing wheel on the following page as aids in determining the correct amount of shims needed for proper alignment of the index notch.

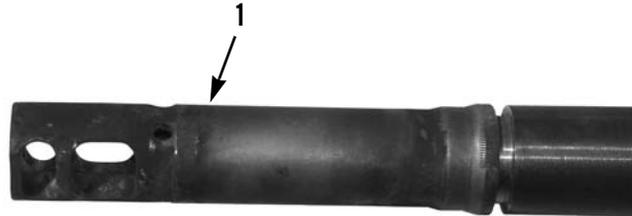


**Table 1. Shim Chart.**

Thickness	Amount
Note: Approximate amount shim will rotate adapter.	
.005 =	1/8 of a turn
.008 =	1/5 of a turn
.010 =	1/4 of a turn
.012 =	1/3 of a turn
.020 =	1/2 of a turn

**INSTALLATION - CONTINUED**

6. Remove muzzle break (1) after proper alignment has been achieved. Use care to not lose shims.



M40-090

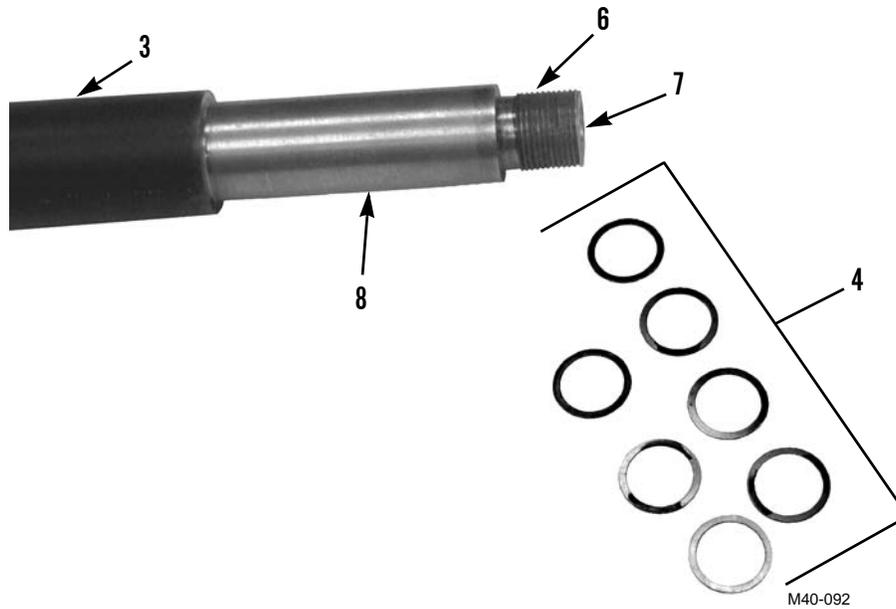
7. Remove the barrel (3) from the vise or fixture.
8. Clean and degrease the threads (6) and contact area (7) of the barrel with acetone.
9. Clean the internal threads of the muzzle break with a cotton swab and acetone.
10. Prefit muzzle break to determine correct shim (4) needed for final installation using timing wheel procedure. See *Timing Wheel Instructions* in this work package.

**NOTE**

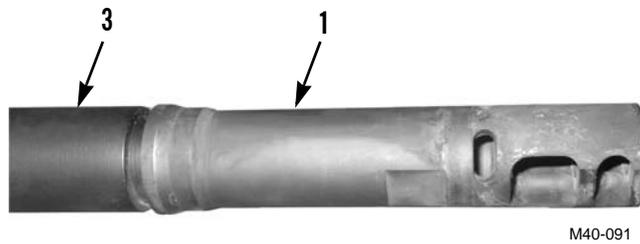
**Do not apply thread sealant between or behind shims.**

11. Apply a thin coat of thread sealant (Rocksett®) to any exposed surface (8) on the barrel (3) that is covered by the muzzle break.
12. Apply a thin coat of thread sealant (Rocksett®) to the threads (6) of the barrel (3).
13. Apply a thin coat of thread sealant (Rocksett®) to the internal portion of the muzzle break.
14. With the barrel (3) pointing up (vertical), install the correct shims (4) on the barrel. Ensure the shims are centered on the barrel and install to muzzle break over the shims onto the barrel.
15. Secure the barrel (3) in a vise or fixture.

INSTALLATION - CONTINUED



16. Using the combination wrench and a torque wrench, tighten the muzzle break (1) onto the barrel (3), to 20-23 lb-ft.



17. Run a dry patch through the bore after assembly to ensure no sealant (Rocksett®) is present in the bore.
18. Allow the sealant (Rocksett®) to cure for 24 hours prior to firing the weapon.

***TIMING WHEEL INSTRUCTIONS***

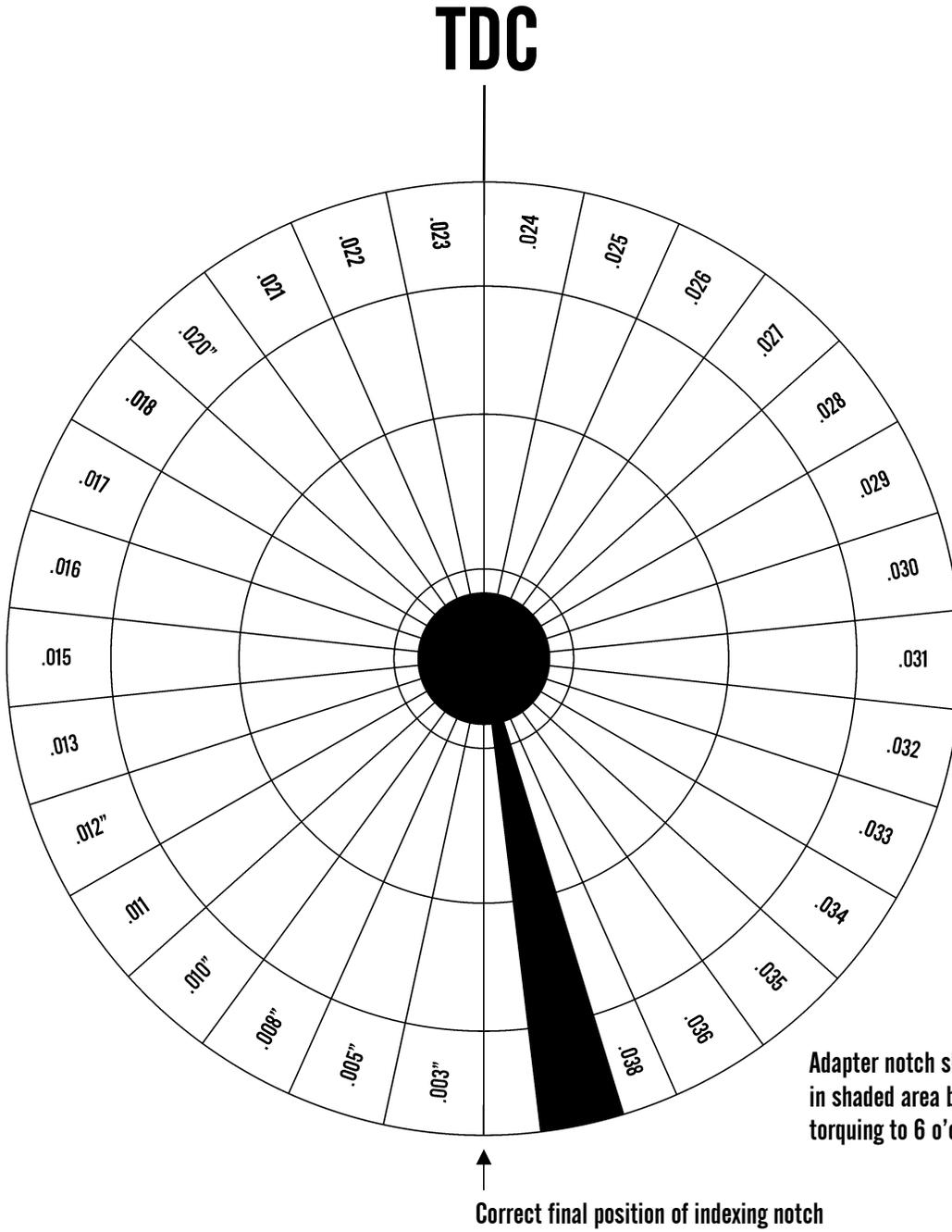
1. Screw adapter onto muzzle until firmly hand tight.
2. Slide timing wheel over adapter with printed side facing toward you and printed TDC pointing straight up (12 o'clock position).
3. With eyes in front of muzzle, note which timing wheel "pie slice" lines up with adapter indexing notch, and note the shim listed on that pie slice. Installing those shims places notch in correct 6 o'clock position when adapter is properly torqued.

**NOTE**

**If adapter notch aligns with gray area of wheel after initial hand-tightening, you may not need shims.**

TIMING WHEEL

FOR 24 THREADS PER INCH  
AND 1 MM METRIC



END OF WORK PACKAGE



**THIS WORK PACKAGE COVERS**

Bipod Assembly: Removal, Inspection, Installation

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**INITIAL SETUP****Maintenance Level**

Organizational

**Equipment Conditions**

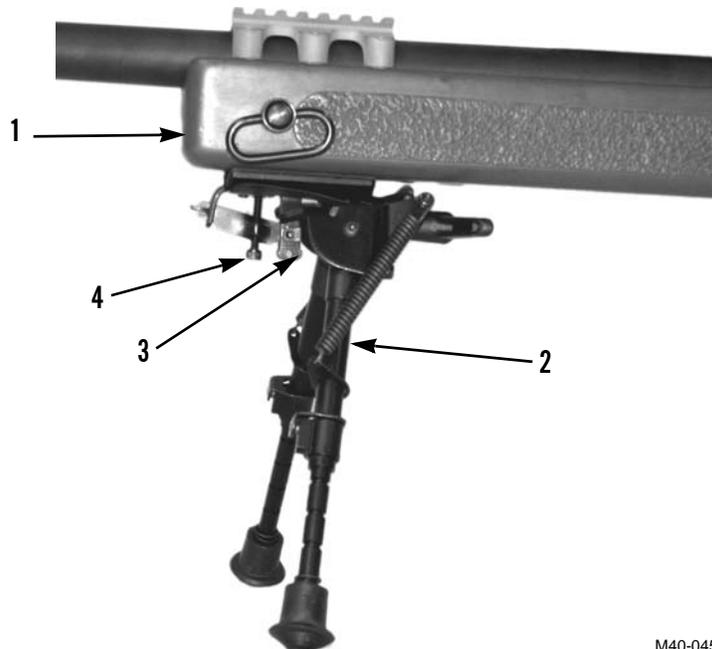
Weapon cleared (WP 0012 00)

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**BIPOD ASSEMBLY REMOVAL****WARNING**

**Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in WP 0012 00. Failure to follow this warning may cause injury or death to personnel.**

Loosen bipod screw (4), pinch bipod mounting clamps together (3), and remove bipod assembly (2) from weapon stock (1).



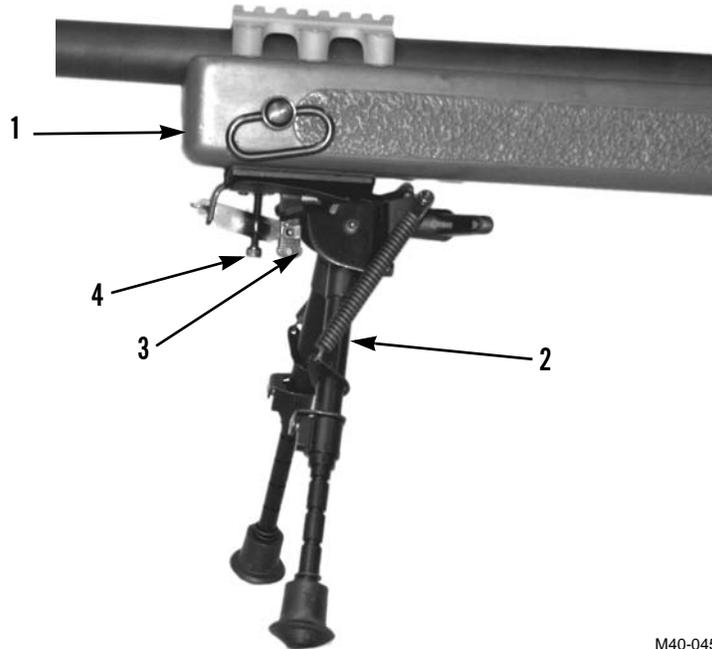
M40-045

**BIPOD ASSEMBLY INSPECTION**

1. Check for proper operation.
2. Check for any damage.
3. Replace if damaged or not operating properly.

**BIPOD ASSEMBLY INSTALLATION**

1. Pinch mounting clamps (3) together, position bipod (2) on weapon stock (1) and release clamps.
2. Tighten bipod screw (4).



M40-045

**END OF WORK PACKAGE**

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**REASSEMBLY OF WEAPON**0019 00

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**THIS WORK PACKAGE COVERS**Reassembling the Weapon, Safety Check

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**INITIAL SETUP****Maintenance Level**

Organizational

**References**

WP 0020 00

**Equipment Conditions**

Weapon cleared (WP 0012 00)

Bolt body assembly removed (WP 0012 00)

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***REASSEMBLING THE WEAPON*****WARNING**

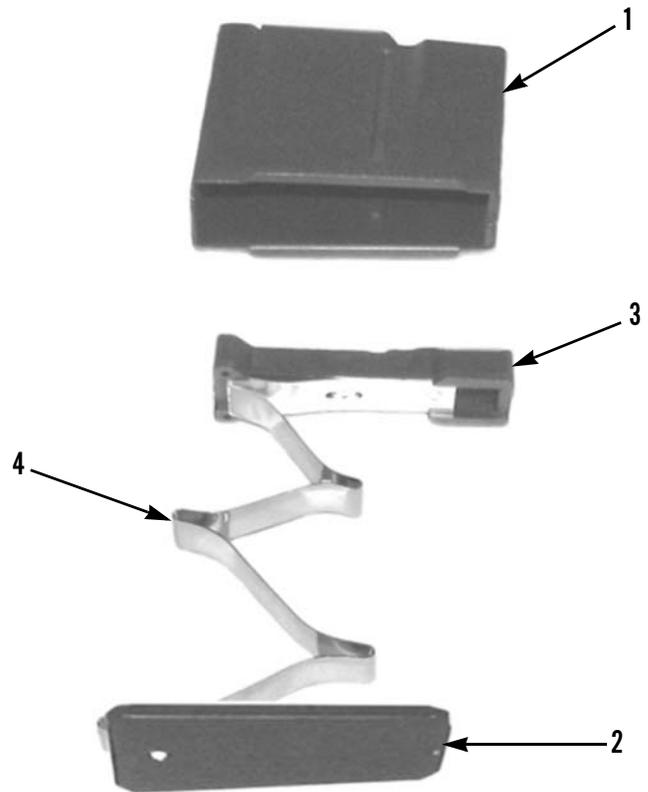
**DO NOT exchange or switch bolt assemblies from one weapon to another. Doing so may cause injury or death to personnel.**

1. **Bolt Body Assembly.**
  - a. Align the locking lugs of the bolt body assembly with the bolt track inside the receiver, and push forward.
  - b. Check the function of the bolt assembly by cycling the bolt in and out of battery a few times.

**REASSEMBLING THE WEAPON - CONTINUED****2. Magazine Assembly.**

- a. Compress spring (4) to identify longest leg.
- b. Slide the longest magazine spring leg underneath the magazine floor plate (2) until it is fully seated. Slide the short leg inside the follower (3) until it is fully seated. To avoid feeding problems, ensure that the short leg of the spring is inside the follower, not the floor plate.
- c. Install follower (3) in magazine assembly (1).
- d. Compress spring (4) with floor plate (2).
- e. Attach floor plate (2) to magazine assembly (1).

3. **Function Check.** See *Function Check* (WP 0020 00) in this manual.



M40-044

**END OF WORK PACKAGE**

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**FUNCTION CHECK**0020 00

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**THIS WORK PACKAGE COVERS**Function Check

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**INITIAL SETUP****Maintenance Level**

Organizational

**Equipment Conditions**

Weapon cleared (WP 0012 00)

**References**WP 0019 00

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**FUNCTION CHECK****WARNING**

**Always assume every weapon is loaded until it is determined through visual and physical inspection it is not. Procedures for clearing/unloading the weapon are outlined in WP 0012 00. Failure to follow this warning may cause injury or death to personnel.**

Whenever the weapon is disassembled beyond normal field stripping, perform a functional check when the weapon is reassembled. This quick check indicates whether or not the weapon has been properly assembled with all of its components. A functional check can also reveal the more obvious malfunctions that occur between interactive components of the weapon. To complete a functional check, perform the following procedures:

1. With the bolt closed on an **EMPTY** chamber, place the weapon on "SAFE".
2. Pull the trigger. The firing pin assembly should not disengage from the sear safety cam of the trigger mechanism.
3. With the weapon remaining on "SAFE", rotate the bolt handle and manipulate the bolt out of battery and up against the bolt stop. The bolt should manipulate in and out of battery while the weapon remains on "SAFE."
4. Close the bolt back into battery. Check to ensure that the weapon remains on "SAFE" and will not fire.
5. Push the safety lever forward to the "FIRE" position. The firing pin assembly should remain engaged with the sear and not fire.
6. Squeeze the trigger. The firing pin assembly should release from the sear. You should hear an audible click.
7. With the safety in the "FIRE" position, manipulate the bolt as in step 3, but vigorously. Bolt should manipulate without the weapon slam firing.

**FUNCTION CHECK - CONTINUED**

8. Load five dummy rounds in magazine assembly.
9. With safety on, insert magazine assembly with dummy rounds into magazine well.
10. Cycle bolt in and out of battery to check feeding, chambering, extracting, and ejecting.

**WARNING**

**The ability of the weapon to fire by manipulation of the bolt in and out of battery without pulling the trigger is known as “slam firing”. Should the weapon slam fire, evacuate to Intermediate Maintenance. Failure to follow this warning may cause injury or death to personnel.**

11. Check for slam fire condition.
12. With safety on, attempt to fire weapon. Weapon should not fire.

**NOTE**

**If trigger is hard (heavy) or very easy (light) to pull, trigger may not be within the weight standards; evacuate weapon to IMA. Only a MOS 2112 is authorized to make this weight adjustment. Failure to follow this warning may cause injury or death to personnel.**

13. With the safety in FIRE position, attempt to fire weapon. Weapon should fire.

**END OF WORK PACKAGE**

**STORAGE PROCEDURES****WARNING**

- **DO NOT store the weapon with live ammunition in either the chamber or magazine.**
  - **Always assume every weapon is loaded until it is determined through visual and physical inspection that it is not. Procedures for clearing/unloading the weapon are outlined in WP 0012 00.**
  - **Failure to follow these warnings may cause injury or death to personnel.**
1. **Stored for Extended Periods.** When the weapon is to be stored for an extended period (greater than 90 days), follow the procedures outlined in MCO P4450.7, *Preparation for Storage*. Ensure the weapon is thoroughly cleaned as outlined in TM 05539-OR\_.
  2. **Storage Procedures.**
    - a. Ensure the chamber and magazine do not contain live ammunition.
    - b. Inspect the bore and chamber and apply a medium coat of CLP.
    - c. Apply a light coat of CLP to all other metal surfaces of the weapon to provide extra lubrication and corrosion protection. Ensure the CLP does not come in contact with the telescope.

**SHIPPING PROCEDURES**

1. **Depot Level Maintenance.** Weapons requiring Depot Maintenance will be shipped to Weapons Training Battalion, Quantico, VA 22134, in accordance with the following procedures and in accordance with MCO P4610.19, *Report of Transportation Discrepancies in Shipment* and MCO 8020.1, *Handling Transportation, Storage, Reclassification and Disposal of Class V (W) Material*.

**WARNING**

**Under NO circumstances should live ammunition be shipped with the weapon, either in the shipping box, magazine, or chamber. Failure to follow this warning may cause injury or death to personnel.**

2. **Shipping Procedures.**
  - a. Ensure no ammunition is present in the weapon by following the clearing procedures found in WP 0012 00.
  - b. Complete NAVMC 1018 tag in accordance with TM 4700-15/1\_ and detail the required maintenance action as thoroughly as possible.
  - c. Clean the weapon by following the procedures outlined in TM 05539-OR\_.
  - d. Place the weapon in its carrying case, with its Supply System Responsibility Items (SSRI) and Stock List (SL-3) and place it in a shipping box. Fill the shipping box with cushioning material. Close the box and seal all seams and joints with tape or caulk.
  - e. Mark the box in accordance with MIL-STD-129, *Military Standard, Marking for Shipment and Storage*.  
Ship through U.S. Registered Mail, Return Receipt Requested. Address the shipment to:  
    - Commanding Officer
    - Weapons Training Battalion
    - Marine Corps Combat Development Center
    - 27251 Garand Road
    - Quantico, VA 22134-5036
    - Attn: Precision Weapons Section
  - f. When repairs are complete, the weapon system will be returned to Marine Corps Logistics Bases Albany, GA or Barstow, CA, to be placed in stock.

**END OF WORK PACKAGE**



**CHAPTER 4**  
**INTERMEDIATE MAINTENANCE**



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**BARRELED RECEIVER****0022 00**

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**THIS WORK PACKAGE COVERS**Inspection

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**INITIAL SETUP****Maintenance Level**

Intermediate

**Tools and Special Tools**

E2900/E7900 Tool Kit

Vise with padded jaws

T30 Torx wrench

**References**

WP 0026 00

**Equipment Conditions**

Weapon cleared (WP 0012 00)

Bolt body assembly removed (WP 0012 00)

Barreled receiver separated from stock  
(WP 0016 00)Suppressor removed (M40A5 only)  
(TM 05539-OR\_)

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**INSPECTION****WARNING**

**Ensure the weapon is cleared before performing these procedures. Failure to follow this warning may cause injury or death to personnel.**

1. Inspect the bedding surface inside the stock for worn or degraded glass from solvents or CLP. If the weapon requires a glass bedding (skim), recreate the glass bedding using the Marine-tex® compound. Use modeling clay or putty and seal all holes. Spray the barreled receiver with Mold Release compound before mating it with the stock. Refer to *Skim Glassing* (WP 0026 00).

**INSPECTION - CONTINUED**

2. Inspect the muzzle end of the barrel (1) for a serviceable crown (2). The lands and grooves should come to a sharp end with no nicks or burrs. If required, re-crown using a 45-degree cut crowning tool.
  - a. Secure barrel (1) in padded vise.
  - b. Mount 45-degree cut crowning tool onto a .308 caliber mandrel.
  - c. Lubricate crowning tool with cutting fluid and fully insert mandrel until the crowning tool touches the muzzle.

**NOTE**

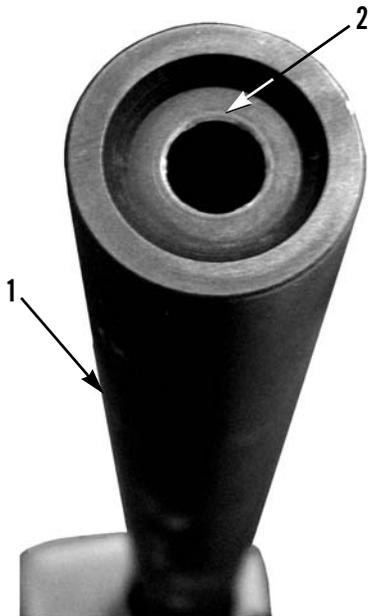
**When crowning muzzle, a 360-degree cut must be accomplished. This is done in 180-degree increments, with each turn of the crowning tool.**

- d. Apply firm pressure with your thumb on back of crowning tool and, with the other free hand, rotate the crowning tool 180 degrees clockwise. Reposition your hand and complete the remaining 180-degree cut; continue until smooth.

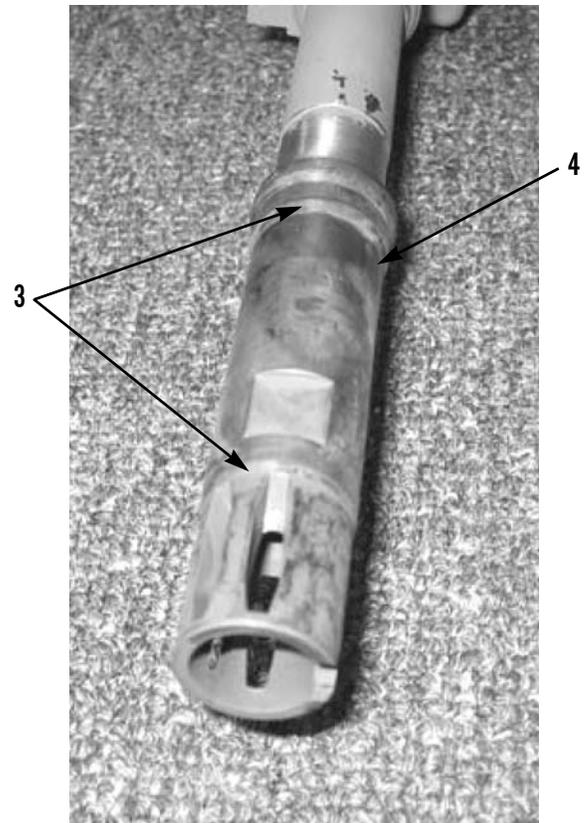
**NOTE**

**If muzzle break is removed, new shim washers must be installed.**

- e. (M40A5) Inspect the muzzle break (4) for looseness, cracks, and/or damage. Inspect bearing surfaces (3) for burrs. Replace muzzle break as necessary.



M40-021



M40-086

**INSPECTION - CONTINUED**

- Inspect barrel and receiver for burrs. Check chamber area for nicks or burrs that would cause hard extraction or chambering. Burrs in chamber area may also cause a ruptured case or a failure to extract. If there are visible cracks in the barrel and receiver, chamber, or muzzle break, request WIR disposition from Material Manager, Albany, GA.

**NOTE**

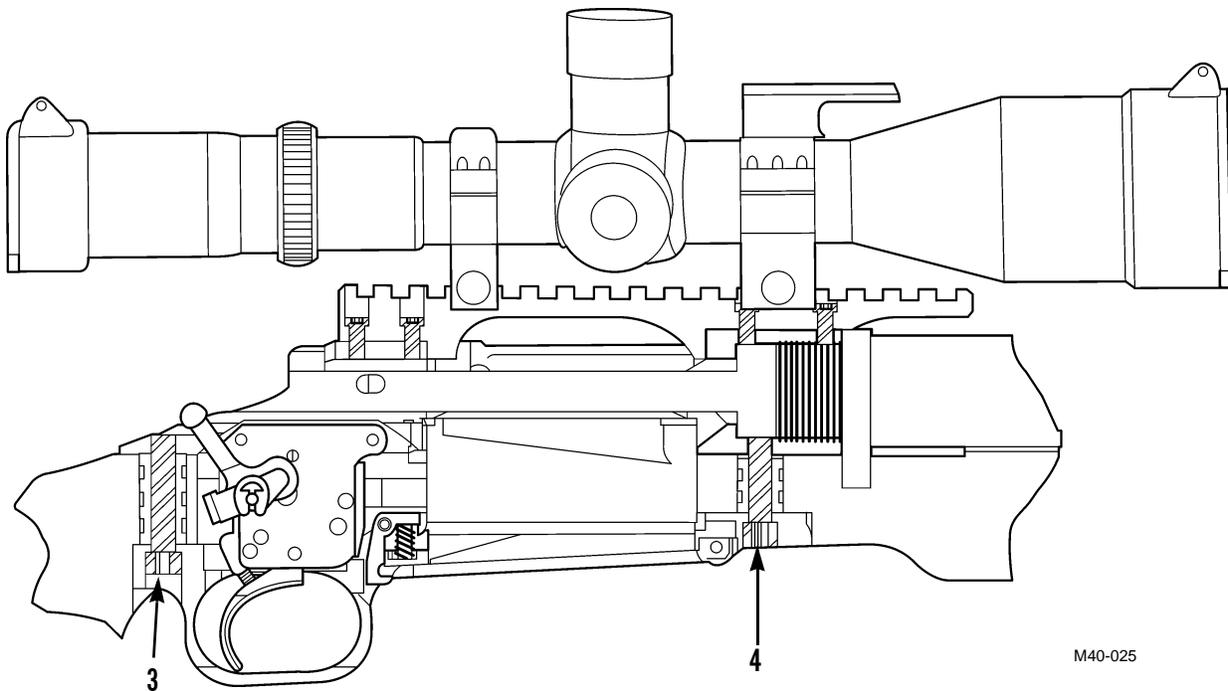
- **Front and rear trigger guard screws are identical when new.**
- **The screws must be modified. See step 6 in this work package.**

- Inspect the trigger guard screws (3 and 4) for wear, unserviceable threads, and correct length. When replacing front trigger guard screw (4) and rear trigger guard screw (3), they must be modified to length.

**NOTE**

- **To ensure proper tension on screws, allow only one thread depth under flush of the inside bottom of the receiver.**
- **Bolt should not hit screws after screws are torqued.**

- Using a grinding wheel on both trigger guard screws (3 and 4), remove metal until the overall length is approximately 1-1/4 inches for the front trigger guard screw (4) and 1-5/8 inches for the rear trigger guard screw (3). If needed, adjust screw length until the screws thread-in flush or recess a maximum of one thread below the inside bottom of the receiver.



M40-025

- With a stone, bevel trigger guard screws to remove all sharp edges.

**END OF WORK PACKAGE**



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**BOLT BODY ASSEMBLY****0023 00**

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**THIS WORK PACKAGE COVERS**Disassembly, Inspection, Reassembly, Headspace

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**INITIAL SETUP****Maintenance Level**

Intermediate

**Tools and Special Tools**

E2900/E7900 Tool Kit  
Bolt disassembly tool  
Headspace gage, 1.630 in.  
Headspace gage, 1.638 in.  
Jeweler's screwdriver (.080)  
Firing pin protrusion gage  
1/16-in. punch  
4-oz hammer

**References**

WP 0020 00  
WP 0021 00

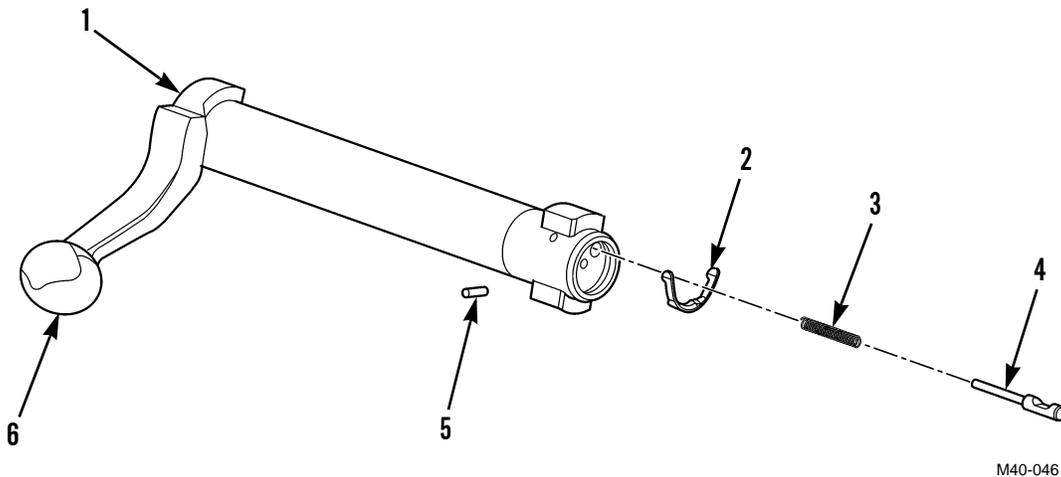
**Equipment Conditions**

Weapon cleared (WP 0012 00)  
Bolt assembly removed (WP 0012 00)  
Firing pin removed from bolt (WP 0013 00)

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**DISASSEMBLY**

1. Once the firing pin is separated from the bolt body, use a 1/16-in. punch and 4-oz hammer to drive out the ejector retaining pin (5) from bolt body assembly (1).
2. Remove the ejector (4) and the ejector spring (3) from bolt body assembly (1).
3. Use a jeweler's screwdriver (.080), pry and lift the extractor (2) out of the recess rim in the bolt body assembly (1).

**INSPECTION**

1. Check that the bolt handle (6) is firmly attached to the bolt body assembly (1) and the solder has no cracks.
2. Inspect the face of the bolt for cracks, chips, or pitting. If unserviceable, request WIR disposition from Material Manager, Albany, GA.
3. Check the ejector (4) for cracks, chips, or burrs and for proper tension by depressing inward; some resistance should be felt against the ejector spring (3) and the ejector should return to its original position. If unserviceable, replace ejector and/or ejector spring.
4. Check the extractor (2) for cracks, chips, or burrs. Check function by depressing inward; some resistance should be felt and the extractor should return to its original position. If unserviceable, replace extractor.

**REASSEMBLY**

1. Install extractor (2) on bolt body assembly (1).
2. Install the ejector spring (3) and the ejector (4) on bolt body assembly (1).
3. Using a punch and hammer, install the ejector retaining pin (5) into the bolt assembly (1).

**CAUTION**

**DO NOT interchange firing pin assembly with another bolt body assembly. This could cause a short or long firing pin protrusion problem.**

4. Reassemble the firing pin assembly into the bolt body assembly. Procedures are outlined in *Bolt Body Assembly Maintenance* (WP 0013 00).





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**SAFETY AND TRIGGER MECHANISM**

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**0024 00****THIS WORK PACKAGE COVERS**

Disassembly, Assembly, Inspection, Staking the Receiver, Replace Unserviceable Trigger, Testing the Trigger Pull

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**INITIAL SETUP****Maintenance Level**

Intermediate

**Tools and Special Tools**

E2900/E7900 Tool Kit  
Jeweler's screwdriver (.080)  
Trigger test fixture  
Trigger test weights  
1/8-in. punch  
1/16-in. hex-head wrench  
4-oz hammer  
8-oz ball peen hammer

**Materials/Parts**

Sealing compound (Loctite 290) (Item 18, WP  
0030 00)

**References**

WP 0020 00

**Equipment Conditions**

Weapon cleared (WP 0012 00)  
Bolt assembly removed (WP 0012 00)  
Barreled receiver separate from stock  
(WP 0016 00)

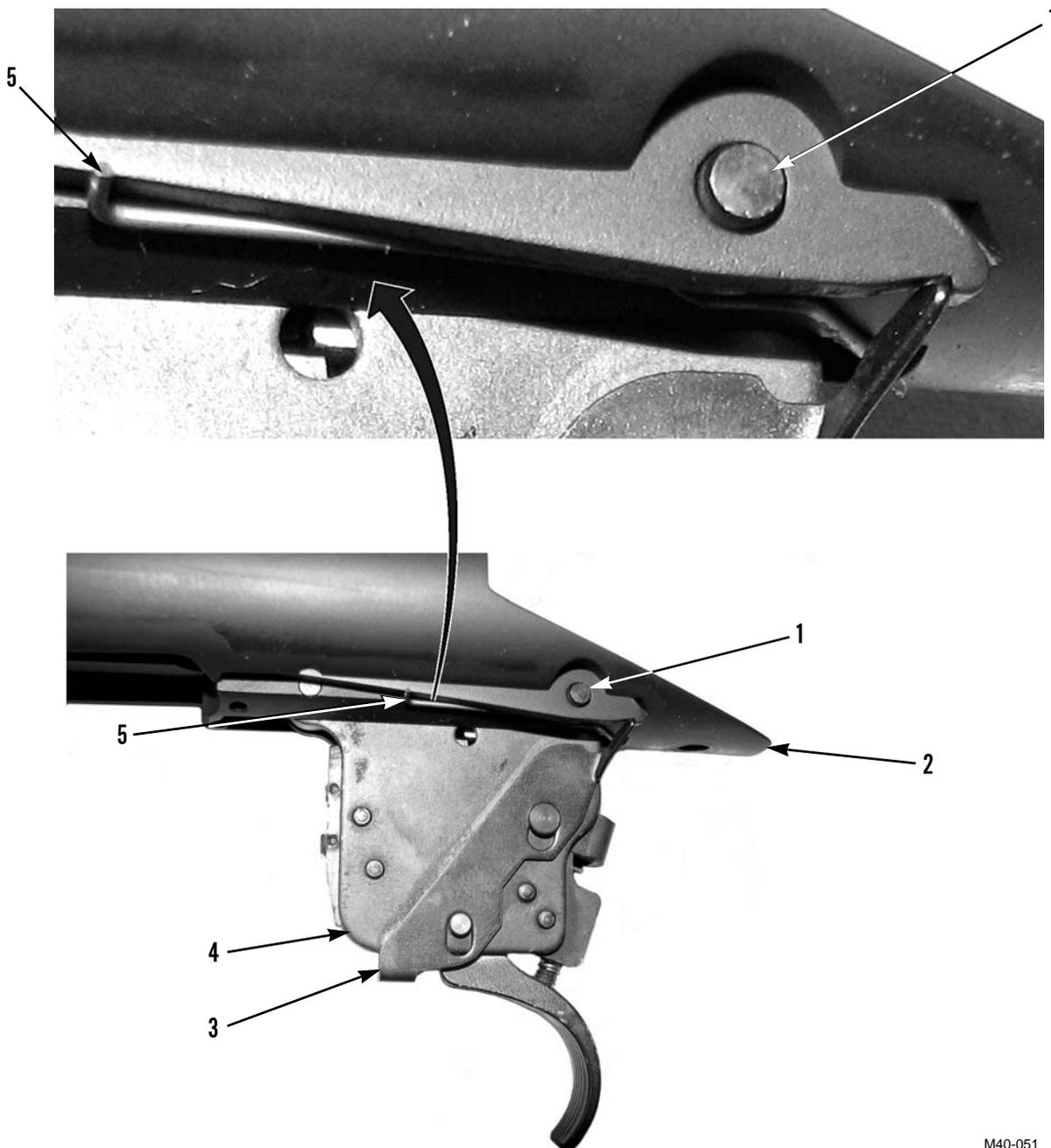
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## DISASSEMBLY

## NOTE

The sear and sear spring are released upon removing the front trigger pin. Take caution when removing the trigger assembly from the receiver.

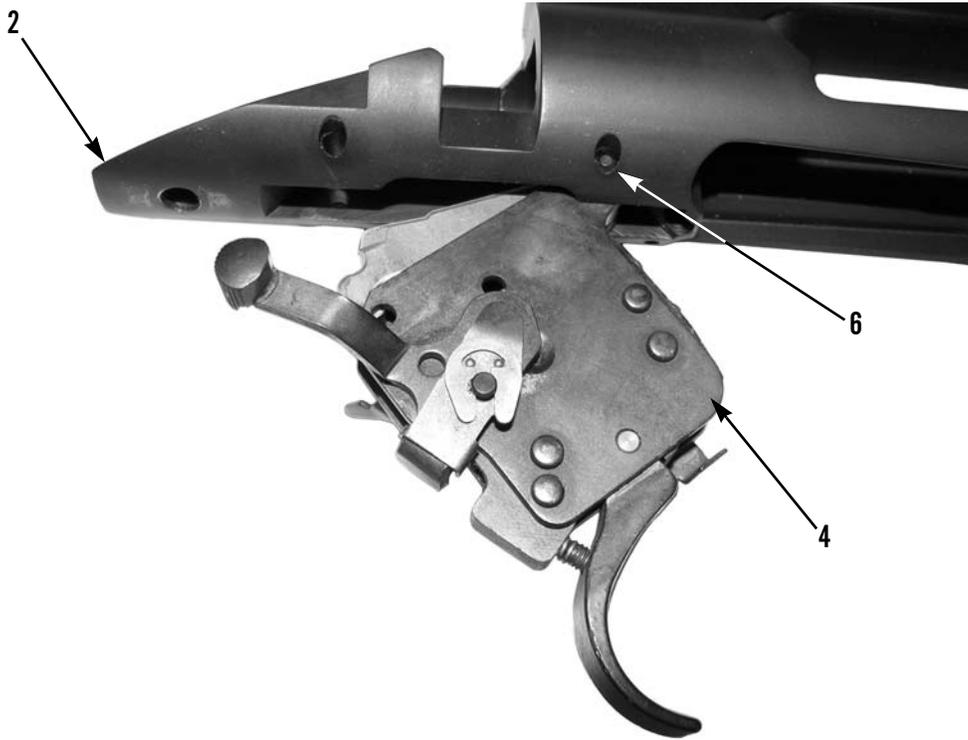
1. From right side of receiver (2), use a 1/8-in. punch and 4-oz hammer to drive out the rear trigger pin (1). Remove bolt stop release (3) and bolt stop spring (5) from trigger housing assembly (4).



M40-051

**DISASSEMBLY - CONTINUED**

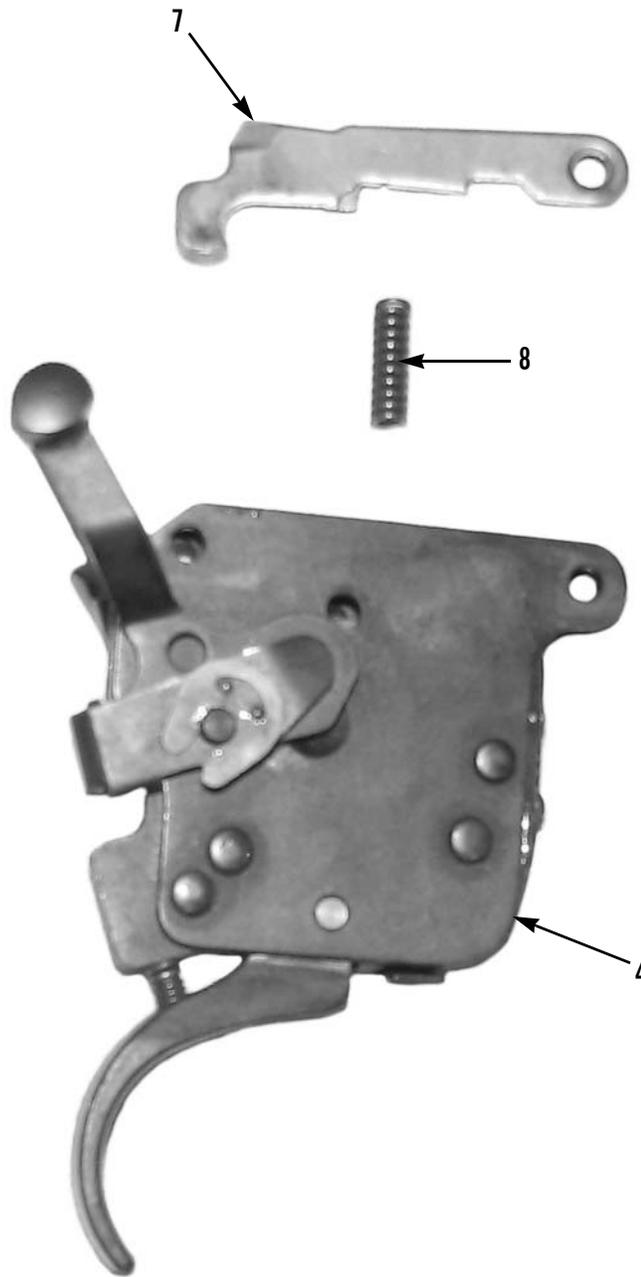
2. Tap out front trigger pin (6) and remove trigger housing assembly (4) from receiver (2).



M40-052

**DISASSEMBLY - CONTINUED**

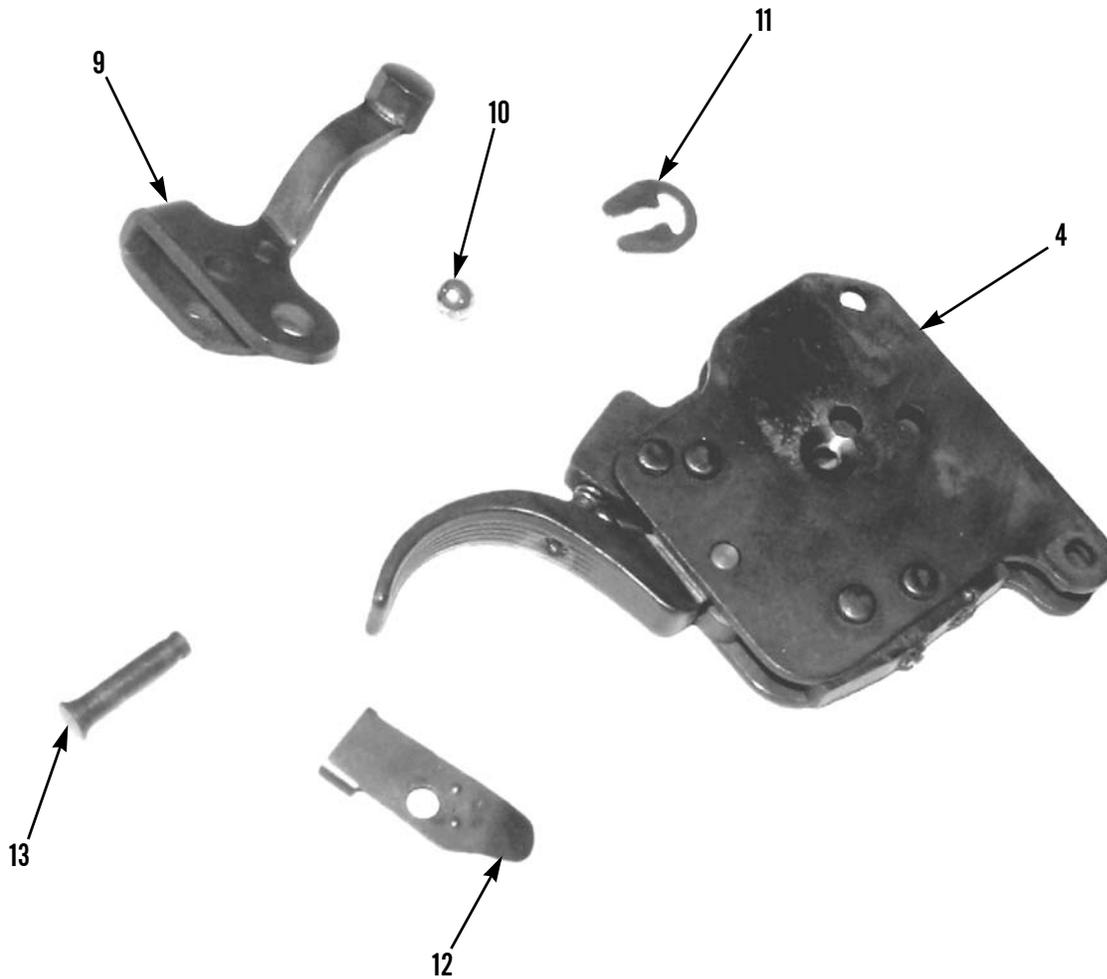
3. Remove sear (7) and sear spring (8) from trigger housing assembly (4).



M40-053

**DISASSEMBLY - CONTINUED**

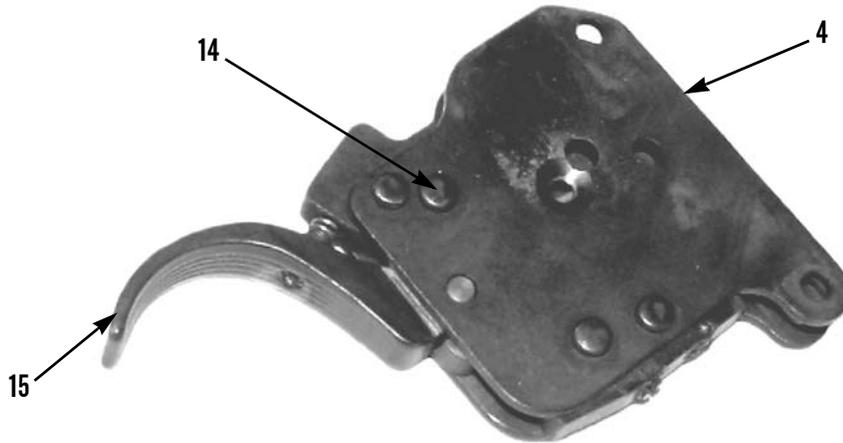
4. Using a jeweler's screwdriver (.080), remove the retainer clip (11), safety spring (12), safety ball (10), and safety pivot pin (13) from trigger housing assembly (4).
5. Slide the safety (9) off of trigger housing assembly (4).



M40-054

**DISASSEMBLY - CONTINUED**

6. Using a 1/8-in. punch and 4-oz hammer, drive out the trigger pin (14) from trigger housing assembly (4).
7. Remove trigger (15) and connector from trigger housing assembly (4).
8. Clean or replace trigger parts as required.

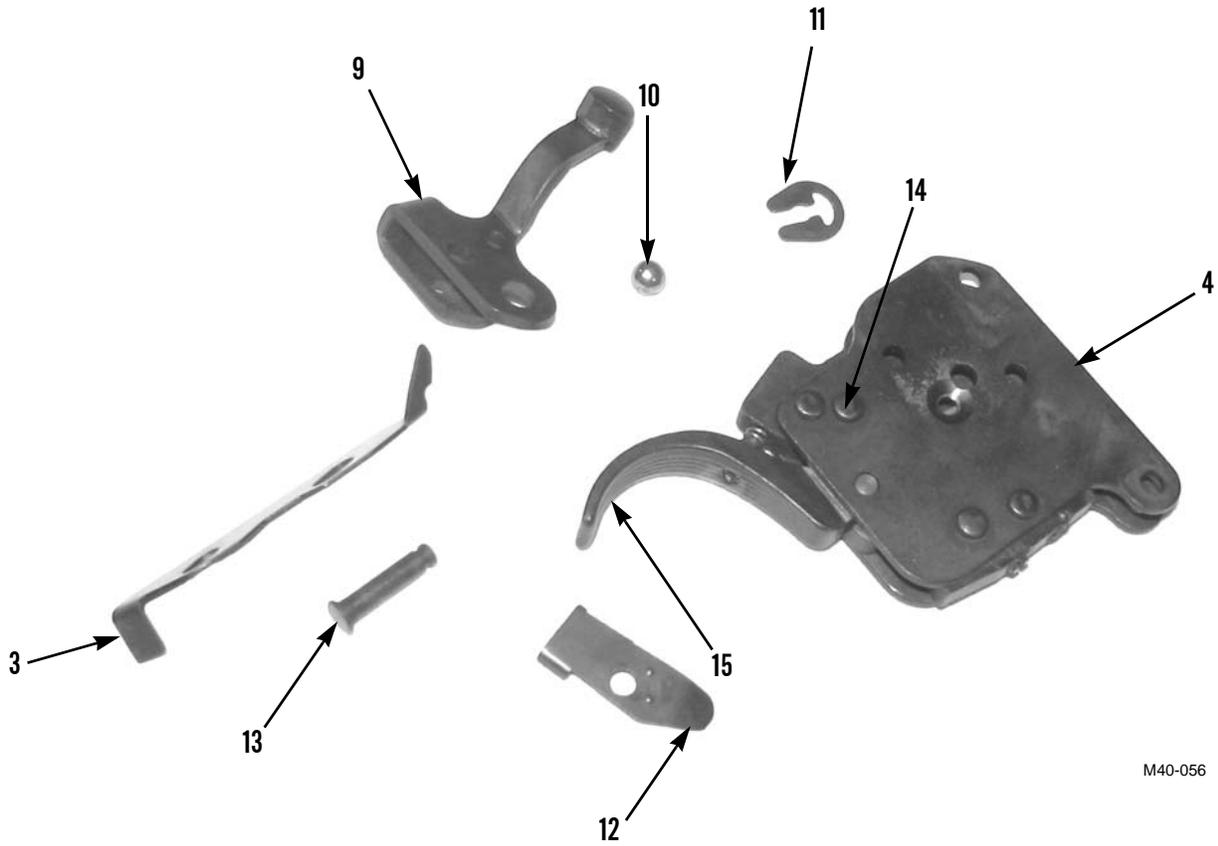


M40-055

**ASSEMBLY**

1. Align trigger (15) and connector in trigger housing assembly (4) and install trigger pin (14) using a 1/8-in. punch and 4-oz hammer.
2. Place bolt stop release (3) on trigger housing assembly (4) and insert safety (9). While maintaining proper alignment, insert safety pivot pin (13) from the left side of trigger assembly through the bolt stop release and safety. Install the safety ball (10) and safety detent spring (12).
3. Install retainer clip (11) over safety pivot pin (13) using a jeweler's screwdriver (.080).

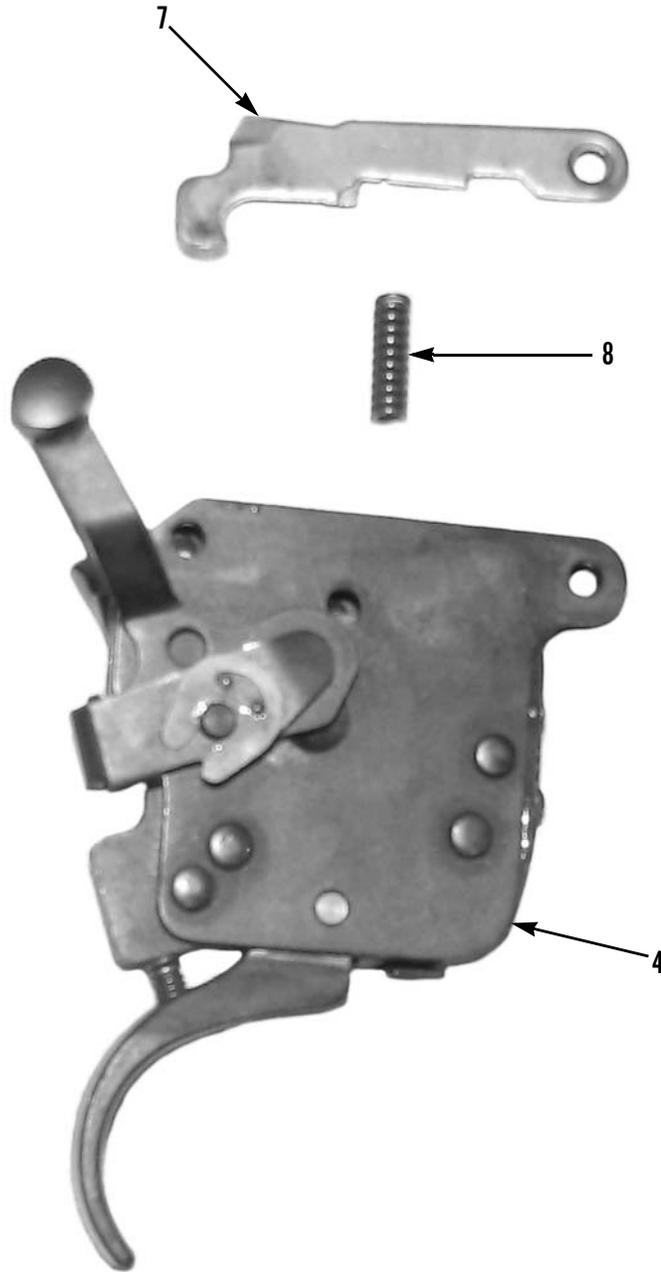
ASSEMBLY - CONTINUED



M40-056

**ASSEMBLY - CONTINUED**

4. Install sear spring (8) and sear (7) into the trigger housing assembly (4).



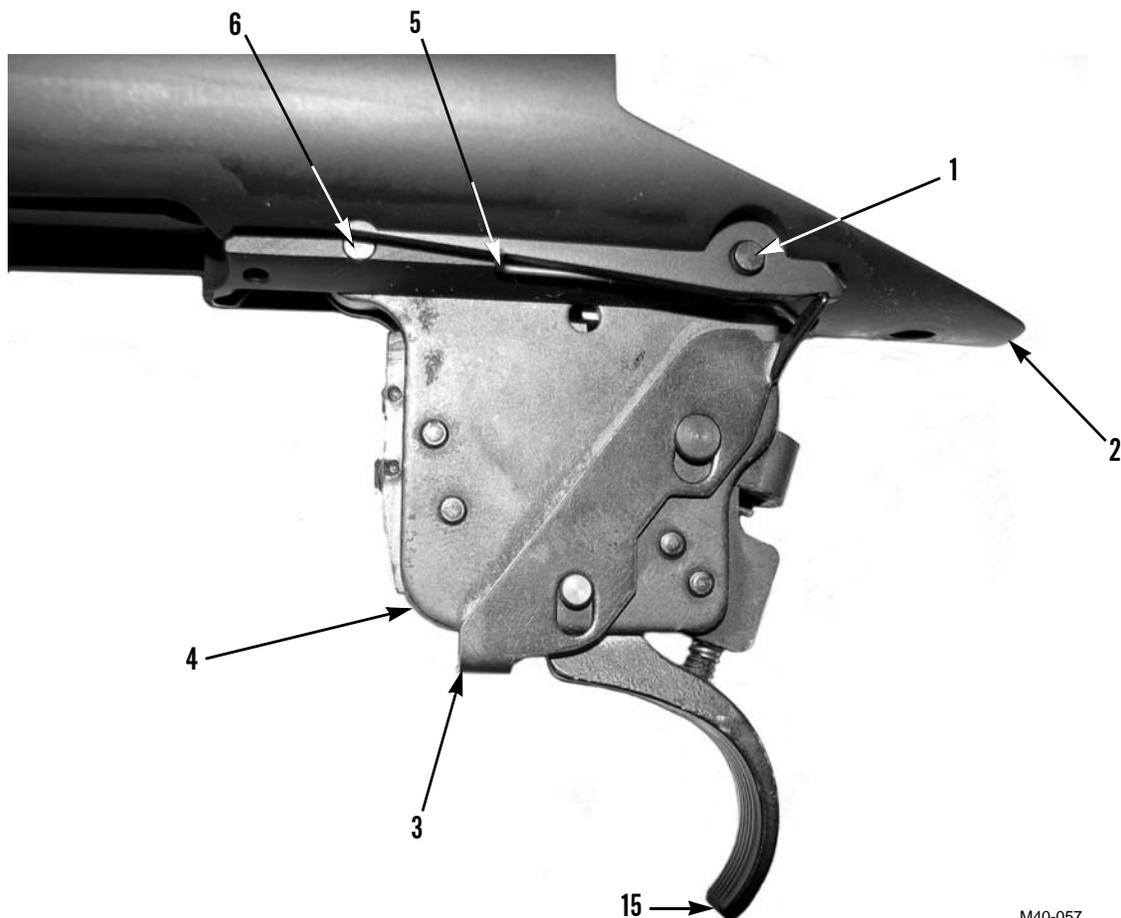
M40-053

**ASSEMBLY - CONTINUED**

5. Using jaw pads, hold barreled receiver in vise.
6. Ensure safety is set in the "SAFE" position. While holding the sear spring and sear together, insert trigger assembly in trigger slot in the bottom of the receiver.

**NOTE**

- **The front trigger pin is shorter than the rear trigger pin.**
  - **Insert tapered ends of trigger pins first.**
7. Using finger pressure, squeeze the trigger (15) together vertically so that the holes in the sear, trigger housing assembly (4), and receiver (2) are aligned. From the left side of receiver, insert the front trigger pin (6) (tapered end first) ensuring it is flush with the edge of the bolt stop slot on the receiver. Insert the rear trigger pin (1) (taper end first), ensuring it is flush with or slightly below the edge of the bolt stop slot on the receiver.
  8. Place bolt stop spring (5) over the rear of the trigger pin (1) with the short leg of the spring captured against the receiver (2) in the trigger housing assembly (4) slot. While holding the front leg of the bolt stop spring out of the way, insert the bolt stop release (3) into the bolt stop slot on the receiver.
  9. Ensure that the hole on the bolt stop release (3) is aligned with rear trigger pin (1) hole. Use a 1/8-in. punch and 4-oz hammer to drive the rear trigger pin through the bolt stop release until it is flush with the outside edge of the bolt stop.



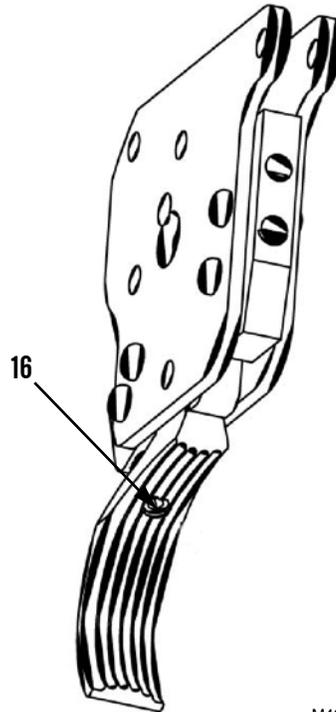
M40-057

**ASSEMBLY - CONTINUED**

10. Check the operation of the bolt stop and bolt stop release by pressing on the bottom of the bolt stop release. The bolt stop release should travel freely along the trigger housing and return to the resting position under spring tension without binding. The bolt stop should also pivot and travel freely without binding or dragging on the receiver or front trigger pin. Ensure there is no dead slack between the bolt stop release and bolt stop (bolt stop should begin moving as soon as the bolt stop release is pressed). If there is any binding or dead slack, adjust as necessary until components operate smoothly.
11. Inspect the trigger pins for looseness. Using a 1/8-in. punch, push on pins with moderate hand pressure. If the trigger pins are loose, the bottom of the receiver must be staked to secure them.

**INSPECTION**

1. Inspect safety and trigger for cleanliness.
2. Check the feel of the trigger pull. The trigger pull should have a clean, crisp brake and the pull weight should be between three and five pounds. Use a 1/16-in. hex-head wrench to adjust the fine-tune adjustment screw (16) to achieve the desired pull weight.



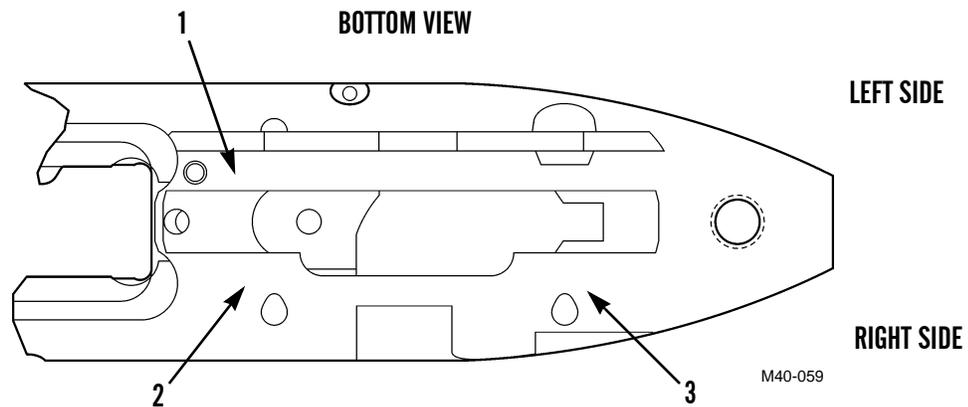
M40-058

3. Check that the connector, bolt stop, bolt stop release, and sear operate freely and without binding. Replace as required.
4. Ensure that all setscrews are present and a small amount of sealing compound is applied to the tops of the screws to prevent them from loosening from vibration.
5. Ensure that both trigger pins are present and not bent.
6. Check the function of the safety and check for excessive play on the safety arm. With the bolt cocked and the safety set in the "SAFE" position, the weapon should not fire. When the safety is moved to the "FIRE" position, the weapon should fire when the trigger is pulled. If required, disassemble the safety mechanism and bend the safety spring to increase tension.
7. Replace parts that are unserviceable.

**STAKING THE RECEIVER****CAUTION**

To prevent damage to the receiver, **DO NOT** stake receiver too close to the edge of the trigger pin hole or too deep. Be careful not to damage trigger assembly while staking.

1. Place weapon upside down in vise with trigger and trigger pins inserted.
2. Using a 1/8-in. center punch and 8-oz ball peen hammer, stake the bottom of the receiver in the three positions.



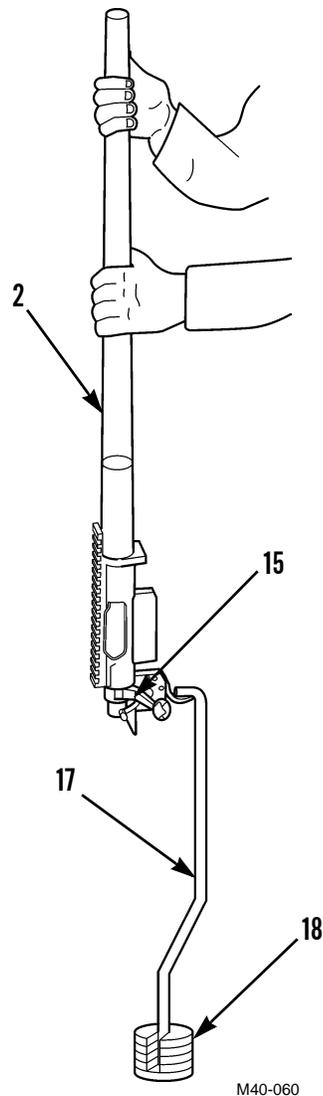
3. The staking should not be any deeper than necessary to tighten the trigger pin in the trigger pin hole.

**REPLACE UNSERVICEABLE TRIGGER**

1. Inspect new trigger assembly.
2. Install on receiver. Refer to procedures outlined in this work package.

**TESTING THE TRIGGER PULL**

1. Place the test fixture (17) on the work bench and add test weights (18) until minimum load of 3.0 lb is reached. Place on deck.
2. With a dummy round in chamber, cycle the bolt and move the safety lever to the "FIRE" position.
3. Hold the weapon or receiver (2) vertically.
4. Hook arm of trigger weight test fixture (17) over trigger (15) and slowly lift the weapon straight up.



5. Fire weapon and recock. Ensure the dummy round is still in the chamber.
6. Increase the weight to 5.0 lb on the test fixture and test again. Trigger should fire.
7. If trigger did not perform as required, adjust until requirement is met. With a 1/16-in. hex-head wrench, adjust trigger using fine tune adjustment screw. Be careful not to remove the fine tune adjustment screw or spring.
8. Perform *Function Check* (WP 0020 00) when required trigger pull is met.

**END OF WORK PACKAGE**

**THIS WORK PACKAGE COVERS**

Disassembly, Inspection, Reassembly

**INITIAL SETUP****Maintenance Level**

Intermediate

**Tools and Special Tools**

E2900/E7900 Tool Kit

**References**

WP 0026 00

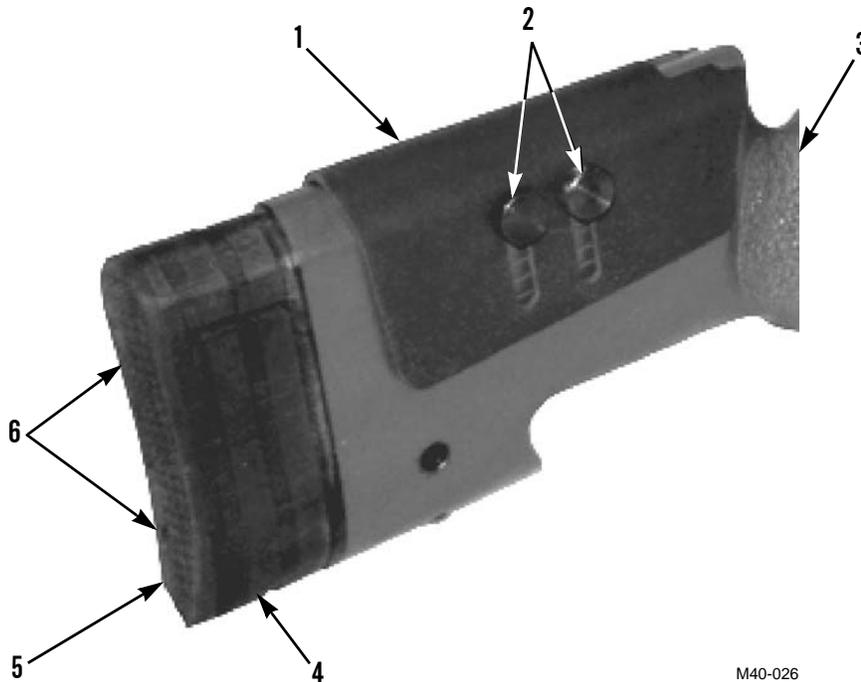
**Equipment Conditions**

Weapon cleared (WP 0012 00)

Bolt body assembly removed (WP 0012 00)

Barreled receiver separated from stock  
(WP 0016 00)**DISASSEMBLY**

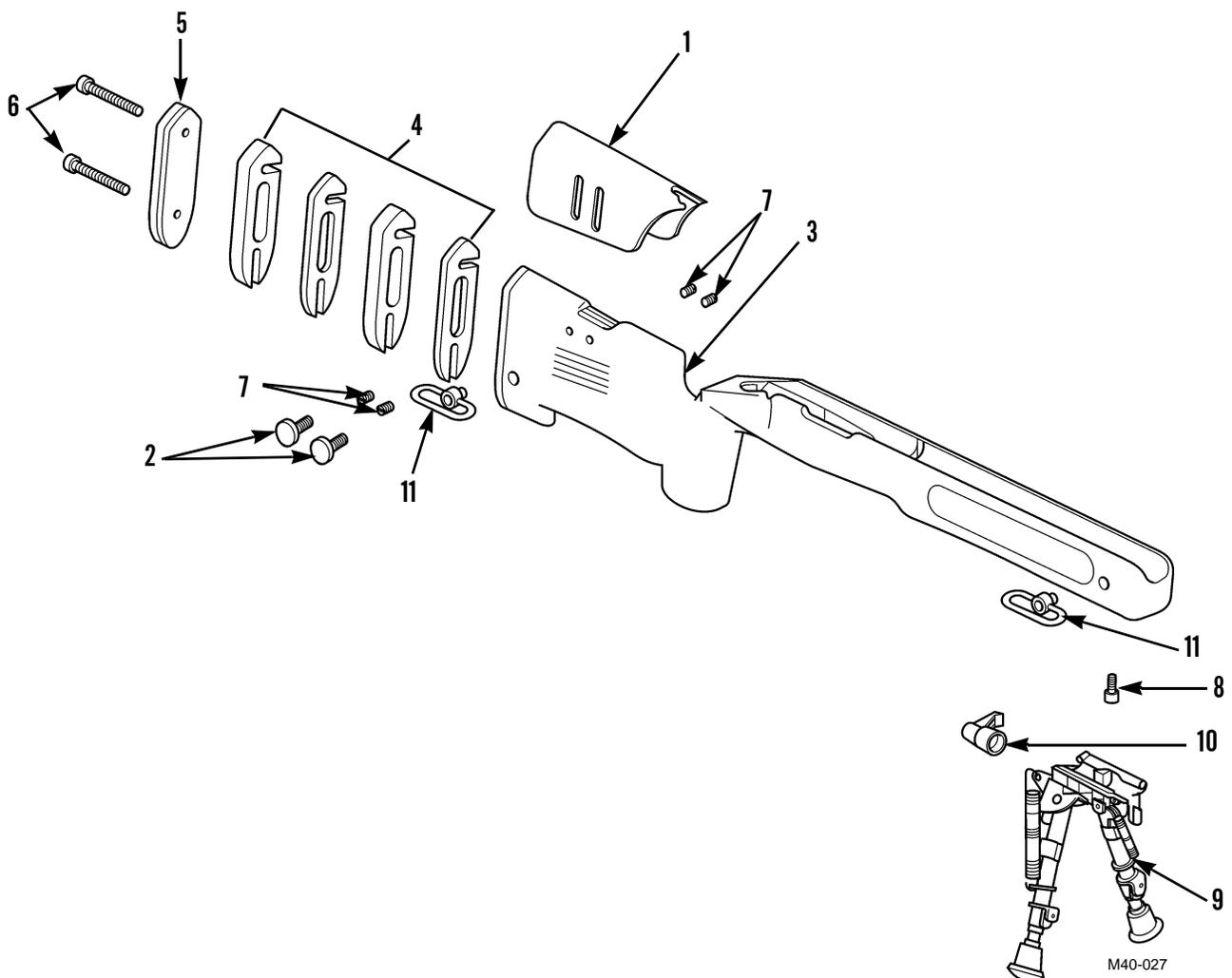
1. Remove sling swivel, if required.
2. Remove cheek piece screws (2) and cheek piece (1) from stock (3).
3. Remove recoil pad screws (6) from stock (3).
4. Remove recoil pad (5) and inserts (4) from stock (3).



M40-026

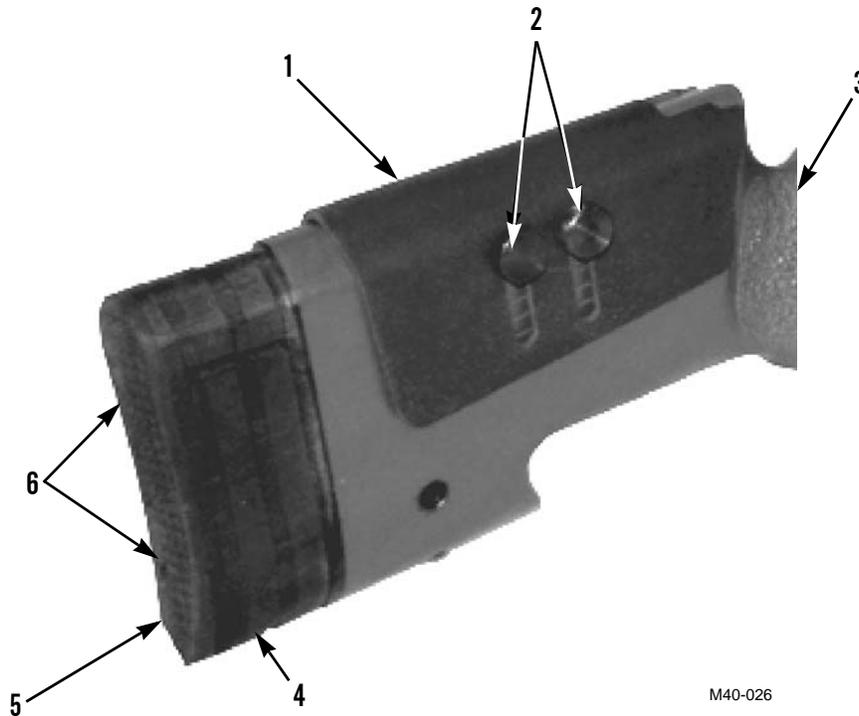
**INSPECTION**

1. Check all parts for excessive wear, burrs, and cracks.
2. Ensure that sling swivels (11) have spring tension.
3. Ensure that the cheek piece (1) and recoil pad screws (6) are not worn or stripped.
4. Ensure the helicoil inserts (7) on both sides of the stock (3) are not stripped or stretched.
5. Ensure that the bipod stud (8) is not loose or damaged.
6. Ensure the cheek piece (1) locks in place when tightened.
7. Ensure that the bipod assembly (9) is serviceable; this includes ensuring that the legs extend and retract, that the bipod assembly pivots, and the pod lock (10) locks in place.
8. Inspect stock (3) for cracks. Cracks in the glass bedding will be routed out and reglassed. Refer to *Skim Glassing* (WP 0026 00). Stocks are under warranty. If cracks cannot be fixed, request WIR disposition from Material Manager, Albany, GA.
9. Replace any unserviceable parts.



**REASSEMBLY**

1. Install inserts (4) and recoil pad (5) on stock (3).
2. Install recoil pad screws (6) in stock (3).
3. Install cheek piece (1) on stock (3) and install cheek piece screws (2).



M40-026

4. Place the barreled receiver in the stock and press straight down on the receiver over the recoil lug. Ensure barreled receiver is fully seated. Refer to procedures outlined in *Removal of Barreled Receiver from Stock* (WP 0016 00).

**NOTE**

**Trigger guard screws are different lengths. Ensure that long screw is installed in the rear and the short screw is installed in the front.**

5. Place trigger guard assembly in stock and install trigger guard screws until hand tight.
6. Using a torque wrench, tighten to the settings specified in the Weapon Record Book.

**END OF WORK PACKAGE**



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**SKIM GLASSING****0026 00**

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**THIS WORK PACKAGE COVERS**

Preparation for Barrel and Receiver, Preparation for Stock, Skim Glassing, Installation of Stock Accessory Rail, Breaking Weapon Out of Glass, Skim Glass Clean Up

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**INITIAL SETUP****Maintenance Level**

Intermediate

**Tools and Special Tools**

E2900/E7900 Tool Kit

Action Puller

Multi-tool

**Materials/Parts**

Acetone

Epoxy

1.5-in. masking tape

**Materials/Parts - Continued**

2-in. masking tape

Marine-tex® catalyst

Marine-tex® putty epoxy

Modeling clay

Mold release compound

Sandpaper (180 grit)

**Equipment Conditions**

Weapon cleared (WP 0012 00)

Barrel receiver removed from stock (WP 0016 00)

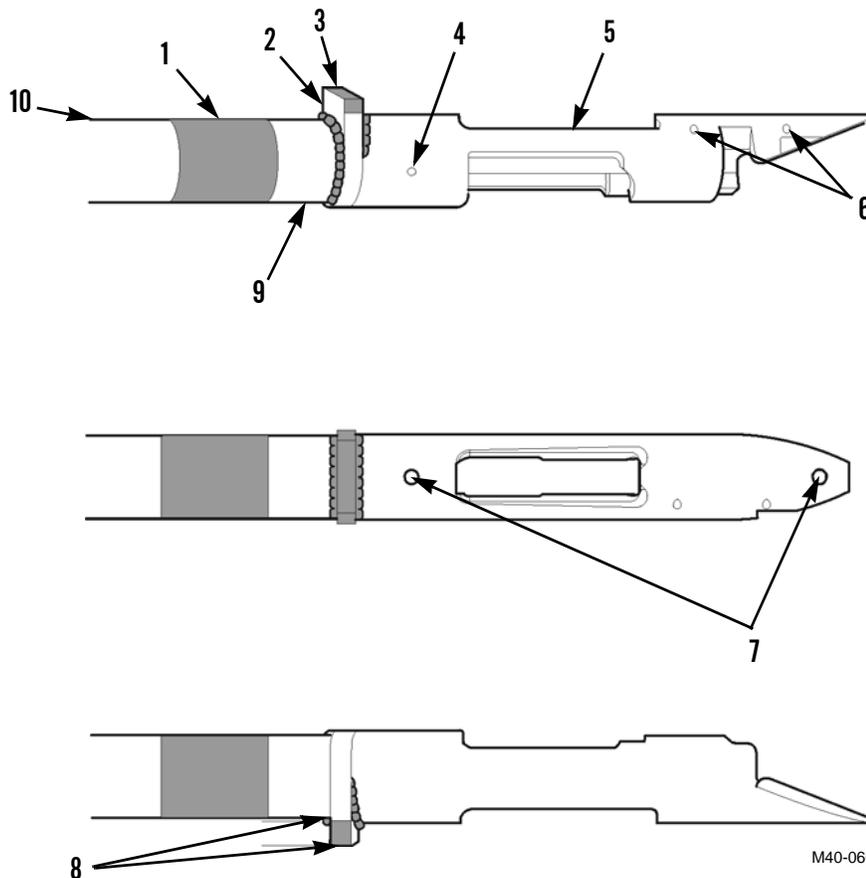
Bolt body assembly removed (WP 0012 00)

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**PREPARATION FOR BARREL AND RECEIVER****NOTE**

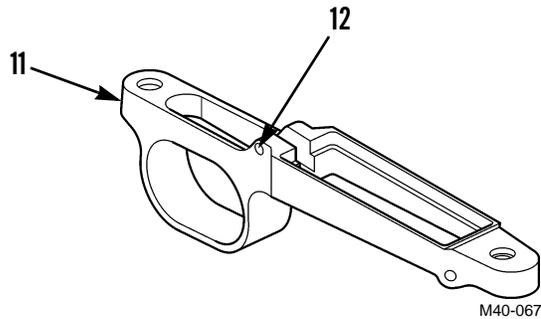
**Curing and drying time, including ambient temperature requirements, should be according to manufacturer's recommendations.**

1. Insert modeling clay inside following cavities on the bottom and side of the receiver (5), gas port hole (4), right side trigger pin holes (6), and trigger guard screw holes (7). Trim clay with a putty knife flush with the receiver. Clean receiver with acetone.
2. Tape the barrel (10) with 2-in. masking tape (1) (3 wraps) and 1.5-in. masking tape (3) on the front of the recoil lug (2) and apply a 1/8 in. clay bevel to each side of the recoil lug.
3. Tape the bottom and sides of the recoil lug (2), wrapping twice with masking tape (1). Trim the overhang of masking tape. The masking tape should come to 3/8-in. (8) on both sides of the recoil lug.



**PREPARATION FOR BARREL AND RECEIVER - CONTINUED**

4. Remove magazine release pin and magazine release from trigger guard assembly (11). Clay the magazine release pin hole (12).



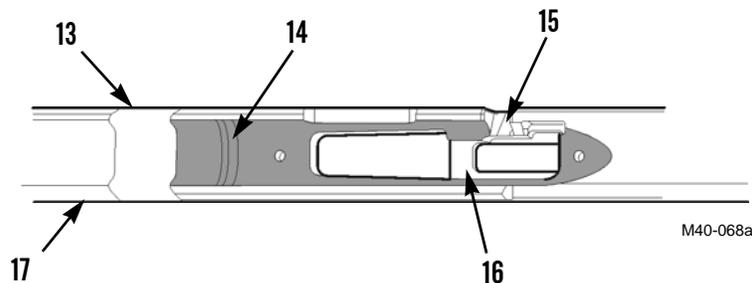
M40-067

5. Lightly grease the trigger guard screws.
6. Mold release the trigger guard, the trigger guard screws, the action and 4 in. of the breech end of the barrel.

**PREPARATION FOR STOCK****CAUTION**

- **DO NOT** remove the guard assembly from the stock. If skim glassing needs to be performed in this area, evacuate weapon to higher maintenance level.
- **DO NOT** overtighten vise. This may damage stock.

1. Place stock (17) in work vise, wrap stock with 2-in. masking tape (13), and sand all exposed areas of the top bedding surface (15) of the stock with 180 grit sandpaper. Ensure all surfaces are roughed-up.
2. Using a 1/8-in. rotary tool bit without end cut, route the corners of the recoil lug mortise (14) position into the stock. Ensure that the bottom of the lug mortise and bridge (16) are roughed-up.

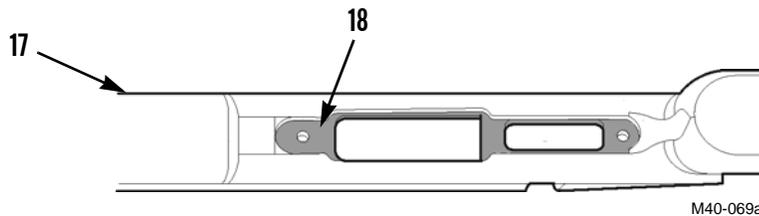


M40-068a

- a. If the recoil lug mortise position on the stock is cracked, continue cutting into the crack until the crack disappears.
- b. Repeat on remaining three corners.

**PREPARATION FOR STOCK - CONTINUED**

3. Inspect the top half of the stock (17) to ensure that all areas have been prepared for skim glassing.
4. Insert three layers of 2-in. masking tape, 1.5 inches in front of the recoil lug's position.
5. Invert stock (17) in the vise. Using a 1/8-in. rotary tool bit, route the bottom bedding surface (18) of the stock very lightly for the trigger guard assembly.

**NOTE**

**Removing excess material will disturb alignment of the bottom components to the stock.**

6. Dry fit barreled action in stock to ensure there is a minimum of 1/16-in. clearance and a maximum of 1/8-in. clearance between the barrel and forward edge of barrel channel. Dry fit the trigger guard to ensure it is flush with the bottom of the stock.
7. Set torque wrench to 60 lb-in.

**NOTE**

**When mixing and working with epoxy, appropriate precautions should be taken in accordance with the manufacture's recommendations.**

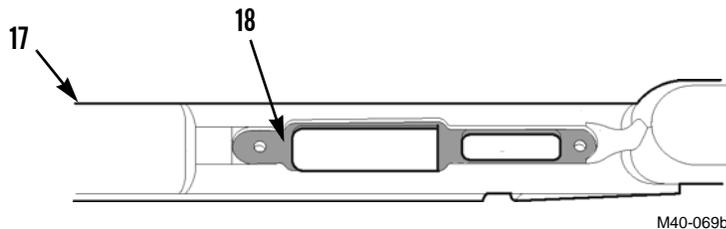
8. Mix epoxy.

**NOTE**

**Ensure torque wrench is set to 60 lb-in. prior to skim glassing.**

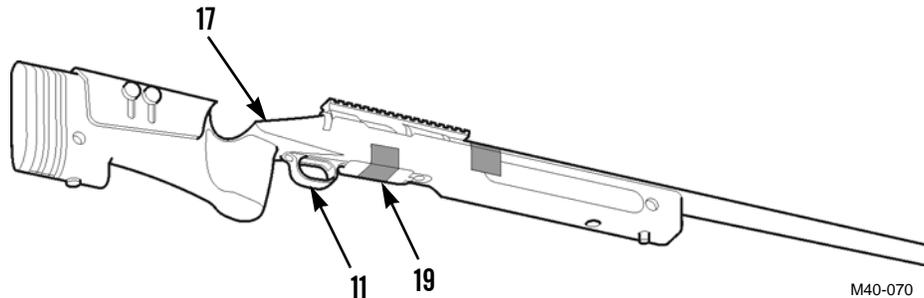
**SKIM GLASSING**

1. Place stock (17) in vise, bottom side up, and with a small putty knife apply a light coat of epoxy/glass to the bottom bedding surface (18) in the stock, and the sides and bottom of the trigger guard assembly.



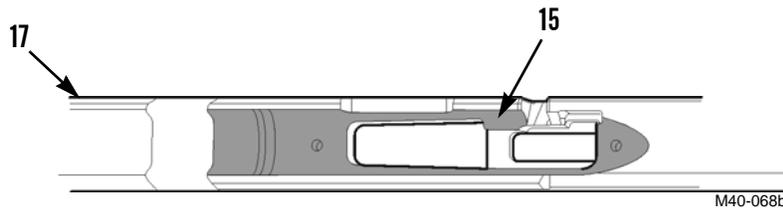
**SKIM GLASSING - CONTINUED**

- Insert the trigger guard (11) inside the stock (17) and secure with masking tape (19).

**NOTE**

- Ensure all areas are filled with epoxy/glass.
- Fill lug mortise with epoxy/glass and pack in corners.

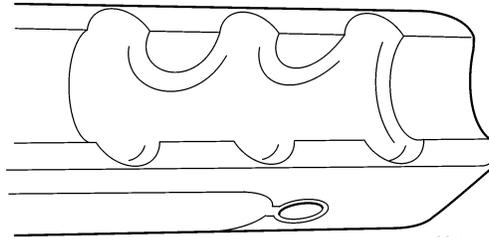
- Invert stock (17) top-side up in vise and apply a light to moderate coat of epoxy/glass into the top bedding surface (15) of the stock.



- Carefully place the barreled action into the stock, ensuring that alignment is maintained between the stock and the action.
- With weapon upright, clean excess glass out of trigger guard screw holes before inserting screws.
- Insert the trigger guard screws, ensuring that the front screw (shortest screw) is tightened first. Slowly tighten both screws until slight pressure is felt.
- Torque the trigger guard screws (front first) to 60 lb-in.
- Pack glass on all edges and clean up excess epoxy/glass from the weapon.
- Set the weapon aside to dry for at least 24 hours. Do not allow it to rest on either the barrel or the trigger guard. Ensure nothing touches the barreled receiver or trigger guard while epoxy/glass dries.

**INSTALLATION OF STOCK ACCESSORY RAIL**

1. Cover the inside bottom of the rail, any shims to be used, and the screws with a light coat of grease or mold-release agent.
2. Mix 5:1 epoxy and catalyst IAW manufacturer's instructions.
3. Fill accessory rail mortise with glass.



M40-087

4. Attach any shims to be used and the top of the rail together.
5. Apply a light coat of Marine-tex® to the bottom side of the rail and any shims used.
6. Insert the rail into the mortise in the stock until either the shims or the rail make contact with the stock.
7. Wrap masking tape around the rail and stock, ensuring the rail remains centered with the stock. Allow epoxy to cure, undisturbed, for 24 hours.
8. When epoxy is hardened, unscrew the top rail from the bottom. Use a chisel to chip away any glass that has bled through the holes in the bottom rail.
9. Clean up any epoxy using a file and sandpaper.
10. Re-install the bipod stud if removed.
11. Ensure there is equal clearance between the top and bottom of the rail and the barrel. A maximum of four shims may be used. If more than four shims are needed, lowering of the barreled action in the stock is needed by skim glassing the weapon to re-center the barrel into the stock.



M40-088

**BREAKING WEAPON OUT OF GLASS**

1. Place weapon upside-down in vise and remove the trigger guard screws and masking tape, securing trigger guard.

**CAUTION**

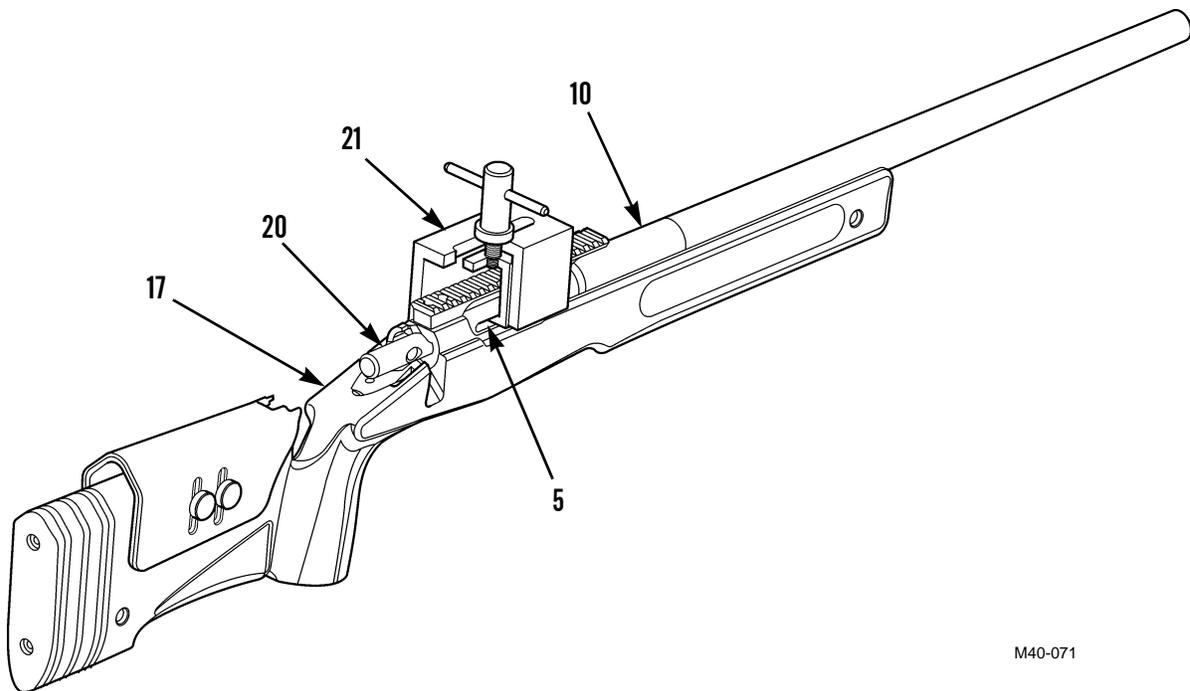
**Be careful not to scar receiver or barrel when chipping away epoxy/glass residue.**

2. Place the weapon upright in a vise and using a rawhide mallet and a wood chisel, chip away any epoxy/glass residue that will impede removal of the action from the stock.
3. Insert mandrel (20) inside receiver (5) and install action puller (21). Carefully remove barreled action from the stock (17) by turning clockwise and supporting the front of the barrel (10), allowing it to come up and out evenly.

**CAUTION**

**If the barreled action is removed unevenly, it will damage the glass bedding.**

4. Lightly tap with rawhide mallet and brass hammer on top of magazine well/trigger guard assembly to release assembly from stock.



M40-071

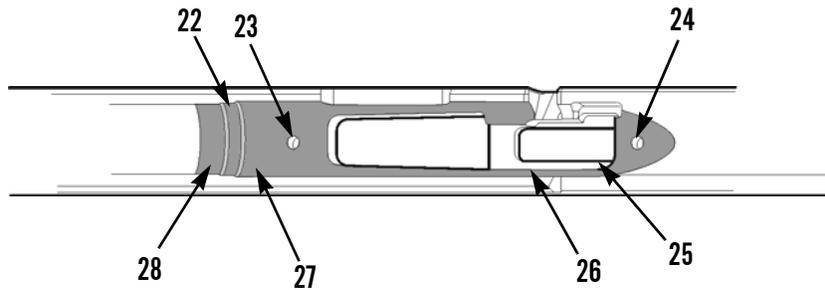
**SKIM GLASS CLEAN UP**

1. Clean the barreled receiver, trigger guard, and the receiver screws of all epoxy, tape, and clay and set them aside.

**NOTE**

**Ensure bolt handle clears stock when re-bedding the stock.**

2. Clean up stock and make all clearance cuts.
  - a. Using a wood chisel, bevel glass area for recoil lug (22), front of barrel pad (28), and both front (23) and rear (24) screw holes. Use a bearing scraper on bottom of stock.
  - b. Clear glass area (25) to prevent bolt release pin from touching glass wall.
  - c. Clear glass area (26) to prevent rear trigger pin from touching glass surface.
  - d. Clear glass area (27) to prevent front trigger pin from touching glass surface.



M40-072

**END OF WORK PACKAGE**

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**TELESCOPE ASSEMBLY AND TELESCOPE RINGS MAINTENANCE**

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**0027 00****THIS WORK PACKAGE COVERS**Inspection, Removal and Disassembly, Reassembly

---

**INITIAL SETUP****Maintenance Level**

Intermediate

**Materials/Parts**

Sealing compound (Loctite 290) (Item 18, WP 0030 00)

**Tools and Special Tools**

Multi-tool

**Equipment Conditions**Weapon cleared (WP 0012 00)

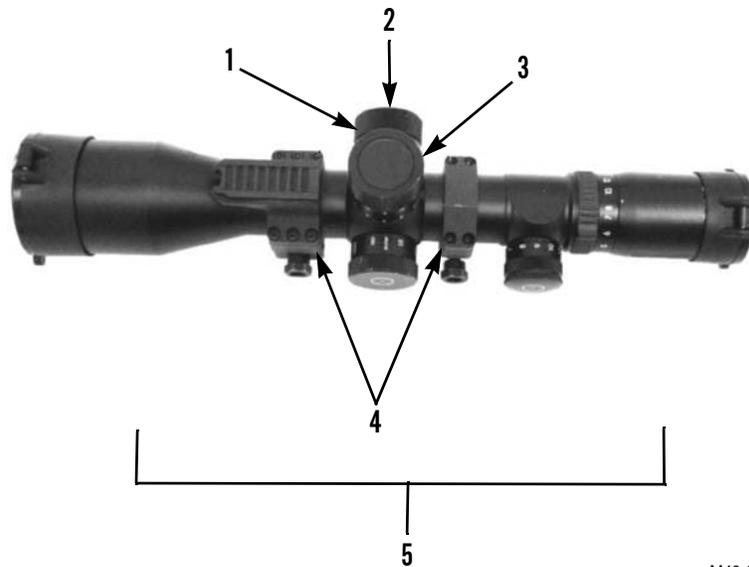
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**INSPECTION****NOTE**

- **The telescope is a warranted item.**
  - **No repair is authorized at the Intermediate Maintenance level.**
1. Inspect for cracks, broken and scratched lenses, moisture inside the telescope, pits or chips that interfere with field of view, damaged reticle, dents in the telescope body, and damaged telescope knobs or turret assemblies.

**INSPECTION - CONTINUED**

2. Inspect and ensure that reticle has all mil dots in place and cross hairs are attached in the proper position. If unserviceable, replace telescope (5).
3. Check that the elevation knob (3) moves freely from 1 through 10 on the scale and is not bent; there should be distinct clicks. Replace unserviceable scopes (5) in accordance with current directives. For scopes that cannot be repaired, Intermediate Maintenance will designate Condition Code "W" and mark for rebuild by the manufacture. Condition Code "H" is not authorized for this scope. Once the replacement scope has been mounted, refer to the procedures outlined in TM 05539-OR\_ for zeroing and final adjustments, and make appropriate entries in the Weapon Record book.
4. Check that the elevation fine-tune adjustment lever moves through to the "V" on both sides of the scale. Adjustment lever should be tight and should move with slight force.
5. Check that the windage knob (2) moves freely through all the numbers in both directions. If unserviceable, replace telescope (5).
6. Check that setscrews (1) are present and serviceable for each knob. Inspect and tighten setscrews as needed. Replace setscrews if needed.
7. Inspect telescope ring bases (4) for damaged or missing pieces. If replacement is required, evacuate the telescope (5) to the IMA.



M40-012

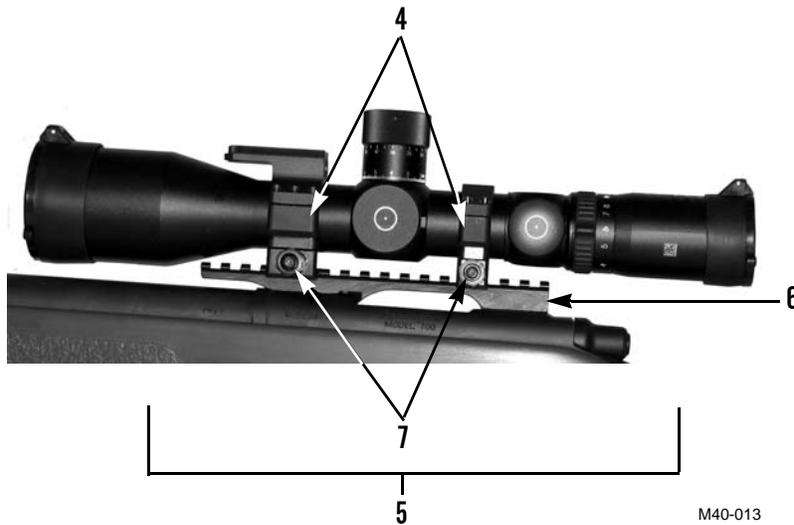
**REMOVAL AND DISASSEMBLY****CAUTION**

- **THERE IS NO DISASSEMBLY AUTHORIZED OF THE TELESCOPE ASSEMBLY.**
- **There are no user replaceable parts or disassembly procedures for parts within the telescope body such as lenses or knobs.**

**NOTE**

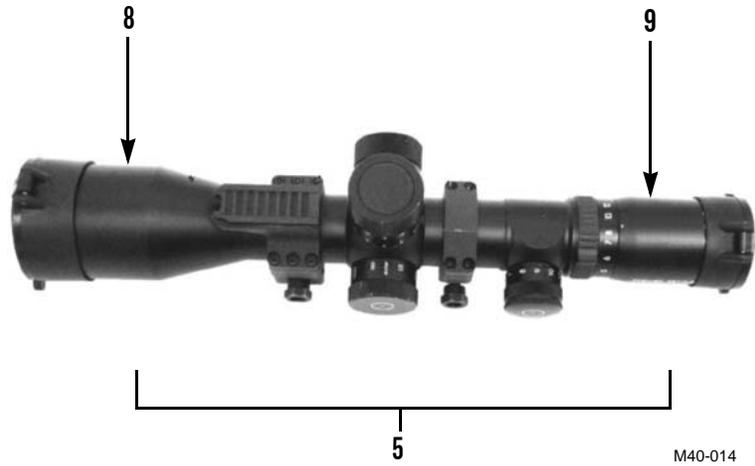
**Before removal of the telescope assembly, note the location of the telescope to the optical platform for zero retention.**

1. Loosen the hex-head nuts (7) on the base of the telescope ring bases (4) and remove the telescope (5) from the optical platform (6).

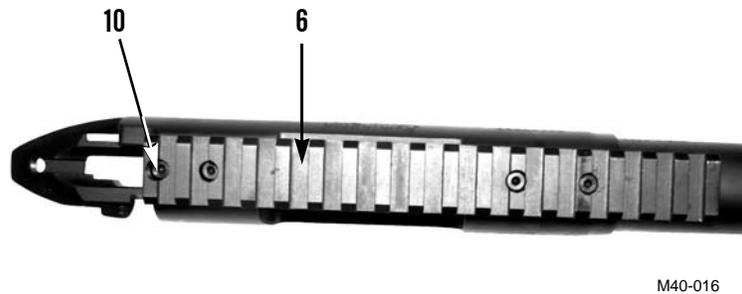


**REMOVAL AND DISASSEMBLY - CONTINUED**

2. After removal of telescope (5) from optical platform, inspect that the objective body (8) and eyepiece lens body (9) are tight.
3. Grasp telescope (5) with one hand on the telescope objective body (8) and one hand on the eyepiece lens body (9), and twist.
4. If the bodies (8 and 9) are loose, the telescope (5) needs to be replaced.

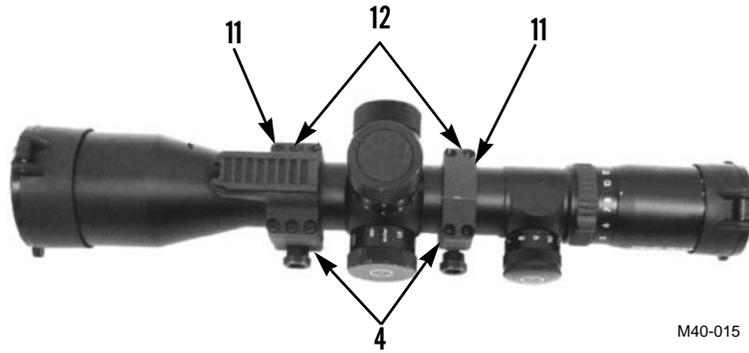


5. Inspect that the optical platform (6) is tight on weapon and that all four optical platform screws (10) are serviceable and are secured in place with Loctite 290.



**REMOVAL AND DISASSEMBLY - CONTINUED**

6. Remove 10 hex-head capscrews (12) and two top cap rings (11) from two telescope ring bases (4).
7. Inspect capscrews (12), top cap rings (11), and ring bases (4) for damage. Replace if damaged.



**REASSEMBLY**

1. Clean mating surface on telescope (5) and telescope ring bases (4).

**NOTE**

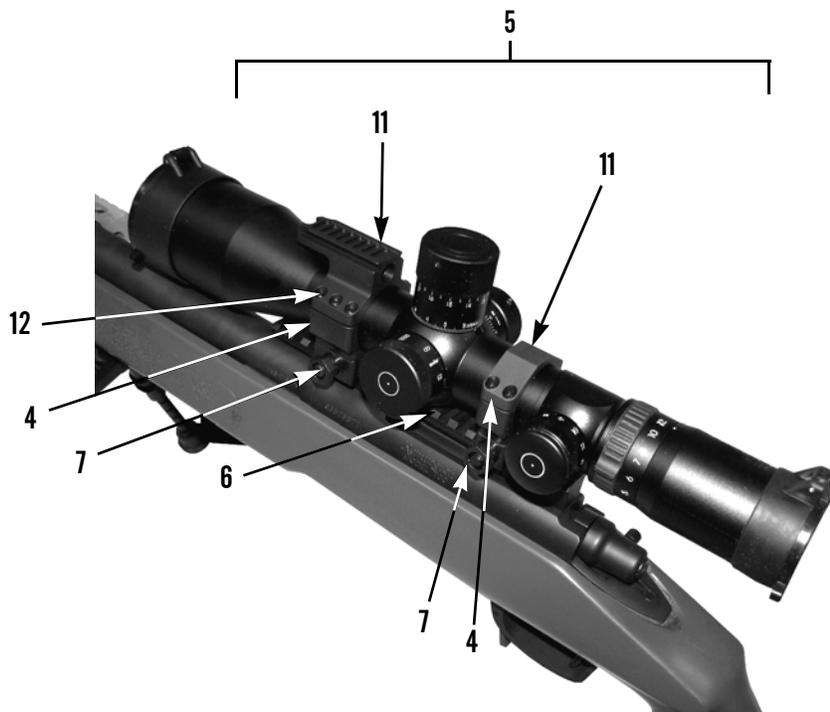
**Be sure to place telescope ring bases on marks made on optical platform to ensure zero retention.**

2. Attach telescope ring bases (4) to optical platform (6), push ring base forward and tighten. Tighten nuts (7) to 65 lb-in.
3. Place the telescope (5) on the telescope ring bases (4).

**CAUTION**

**Ten hex-head capscrews must have a thread length of 0.375 in. (3/8-in.) or damage to scope ring base may occur.**

4. Install two scope ring top caps (11) over telescope (5) and secure to top caps with 10 hex-head capscrews (12).
5. Ensure the telescope is collimate to the weapon.
6. Hand tighten the 10 hex-head capscrews (12), alternating across diagonally. Keep an equal gap between the top cap ring (11) and the telescope base ring (4). Do not over-tighten. The screws need to be torqued to 20 lb-in.



M40-017

**END OF WORK PACKAGE**

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**SUPPRESSOR MAINTENANCE**

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**0028 00**

There is no authorized maintenance for the sound suppressor. For suppressor cleaning procedure refer, to TM 05539-OR\_.

**END OF WORK PACKAGE**



**CHAPTER 5**  
**SUPPORTING INFORMATION**



**REFERENCES**

**0029 00**

**SCOPE**

This work package lists all forms, field manuals, technical manuals, tables, regulations, standards, and miscellaneous publications referenced in this manual.

**MARINE CORPS ORDERS**

Preparation for Storage . . . . . MCO P4450.7  
 Report of Transportation Discrepancies in Shipment . . . . . MCO P4610.19  
 Product Quality Deficiency Report (PDQR). . . . . MCO 4855.10  
 Ground Mishap Report . . . . . MCO 5101.8  
 Handling Transportation, Storage, Reclassification, and Disposal of Class V (W) Material . . . . . MCO 8020.1  
 Class V (W) Malfunctions and Deficiencies. . . . . MCO 8025.1

**FORMS**

Inspection Tag . . . . . NAVMC 1018  
 Weapons Custody Receipt Card . . . . . NAVMC 10520  
 Weapon Record Book, Part II . . . . . NAVMC 10558A  
 Memorandum Receipt for Individual Weapons and Accessories . . . . . NAVMC 10576  
 Recommended Changes to Technical Publications. . . . . NAVMC 10772  
 Product Quality Deficiency Report. . . . . SF Form 368

**TECHNICAL MANUALS**

Pre-fire Inspection, Small Arms Weapons, Ordnance Materiel, and Trigger Pull Measurement  
     Small Arms Weapons . . . . . TI 8005-24/20\_  
 Organizational Corrosion Prevention and Control Procedures for USMC Equipment. . . . . TM 4795-12/1\_  
 Ground Equipment Record Procedures. . . . . TM 4700-15/1\_  
 Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiels and  
     Related Materiels including Chemicals . . . . . TM 9-247\_  
 Military Use of Cleaner, Lubricant, Preservative (CLP) for Weapons and Support Equipment . . . . . TM 9150-15/1\_  
 Operator’s Manual for Sniper Rifle, 7.62 MM, M40A3/M40A5 . . . . . TM 05539-OR\_

**MILITARY STANDARDS**

Military Standard, Marking for Shipment and Storage. . . . . MIL-STD-129

**END OF WORK PACKAGE**



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**EXPENDABLE AND DURABLE ITEMS LIST**

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**0030 00****SCOPE**

This work package lists expendable supplies and materials you may need to operate and maintain the 7.62 mm, M40A3/A5 Sniper Rifle. This listing is for information only and is not authority to requisition the listed items.

**EXPLANATION OF COLUMNS**

1. **Column (1) - Item Number.** This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item [e.g., Use Paper, lens (Item 15, WP 0030 00).]
2. **Column (2) - Maintenance Level.** This column identifies the lowest level of maintenance that requires the listed item.
  - O - Organizational Maintenance
  - F - Field Maintenance
3. **Column (3) - National Stock Number.** This is the NSN assigned to the item which you can use to requisition it.
4. **Column (4) - Description, CAGEC, and Part Number.** This provides the other information you need to identify the item.
5. **Column (5) - Unit of Measure (U/M).** This code shows the physical measurement or count of an item, such as gallon, dozen, gross, pint (PT), each (EA), bottle (BT), package (PG), can (CN), quart size container (QT), book (BK), bale (BE), etc.

Table 1. Expendable and Durable Items List for M40A3/A5 Sniper Rifle.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/M
1	O	6810-00-223-2739	Acetone	QT
2	F	8040-00-142-9193	Adhesive, cyanoacrylatic (superglue)	EA
3	O	6810-00-983-8551	Alcohol, cleaning fluid	QT
4	O	6515-00-303-8250	Applicator, cotton tip	PK
5	O	7920-00-205-0565	Brush, camel hair	EA
6	O	1005-00-494-6602	Brush, cleaning, all purpose	EA
7	F	7510-00-275-2679	Clay, modeling	LB
8	O	P/N 699-000-005	Cleaning compound, powder solvent 4 oz can	OZ
9	O	9150-01-102-1473	Cleaner, lubricant and preservative, (CLP) 1/2 oz bottle	OZ
10	O	P/ N 934-010-010	Lubricating oil, weapons (LAW)	OZ
11	F	8030-00N03-1802	Marine-tex®, putty epoxy	LB
12	F	8010-00-N0680-44	Marine-tex®, catalyst	
13	F	8030-01-064-4951	Mold release compound	CN
14	O	6810-00-264-6715	Molybdenum disulfide	CN
15	O	6640-00-663-0832	Paper, lens 50-sheet pack	BK
16	O	5350-00-721-8117	Sandpaper 180-grit	PK
17	F	8030-00-408-1137	Sealing compound (nail polish)	TU
18	F	8030-00-081-2341	Sealing compound (Loctite 290)	BX
19	F	1005-01-566-6841	Thread sealant (Rocksett®)	EA

END OF WORK PACKAGE

**SCOPE**

This work package lists all common tools and supplements, and special tools/fixtures needed to maintain the 7.62 mm, M40A3/A5 Sniper Rifle.

**EXPLANATION OF COLUMNS IN THE TOOL IDENTIFICATION LIST**

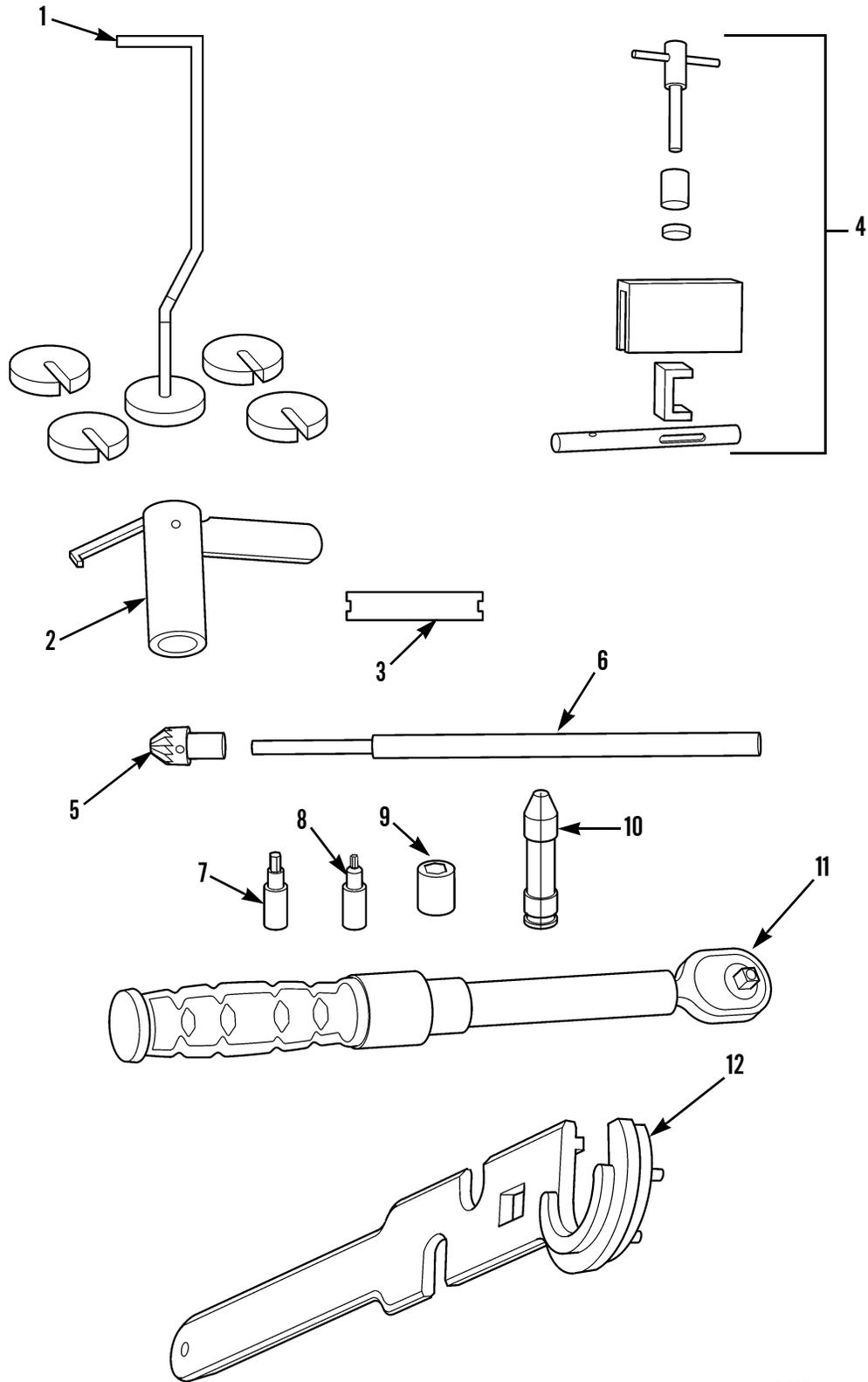
1. **Column (1) - Item Number.** This column indicates the number of the illustration that shows the item.
2. **Column (2) - Item Name.** This column lists the item by noun nomenclature and other descriptive features (e.g., Handle, driver).
3. **Column (3) - National Stock Number.** This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.
4. **Column (4) - Part Number/CAGEC.** Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.
5. **Column (5) - Unit of Measure (U/M).** Indicates how the item is issued for the National Stock Number shown in Columns (2), such as each (EA) or kit (KT).
6. **Column (6) - Quantity Recommended (Qty Rec'm).** Qty Rec'm indicates the quantity recommended.

## TOOL IDENTIFICATION LIST (INCLUDES SPECIAL TOOLS) - CONTINUED

0031 00

Table 1. Organizational and Intermediate Maintenance Special Tools and Equipment.

(1)	(2)	(3)	(4)	(5)	(6)
ITEM NUMBER	ITEM NAME	NATIONAL STOCK NUMBER	PART NUMBER/ CAGEC	U/M	QTY REC'M
1	Test fixture, trigger pull	4933-00-647-3696	7274758/19204	EA	1
2	Tool, bolt disassembly	Local MFG	5H988	EA	1
3	Gage, firing pin protrusion	5120-00-345-6122	19204	EA	1
4	Tool, action puller assembly	Local MFG	5H988	EA	1
5	Tool, crowning	Local MFG			
6	Crowning tool mandrel, .30 caliber	Local MFG		EA	1
7	T15 Torx bit with 1/4-in. drive socket	5120-01-428-8651	TTX15E		
8	T30 Torx bit with 1/4 in. drive socket	5120-01-428-8701	TTX30E	EA	1
9	1/2-in. drive, 1/4-in. socket	5120-01-335-0941	TM16		
10	Gage, headspace				
11	Wrench, torque, 30 lb-in. to 150 lb-in.	5120-00-542-4489	81348	EA	1
12	Wrench, combination	5120-01-505-1677	1299757/19200	EA	1
13	Rounds, dummy, 7.62 mm (not shown)		669-308-020	EA	5
14	Screwdriver, jeweler's (.080) (not shown)	5120-00-180-0729	81348	EA	1



END OF WORK PACKAGE

M40-037



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**MANUFACTURED ITEMS ILLUSTRATIONS**

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**0032 00**

**THIS WORK PACKAGE COVERS**

Manufactured Items

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**INITIAL SETUP**

**Maintenance Level**

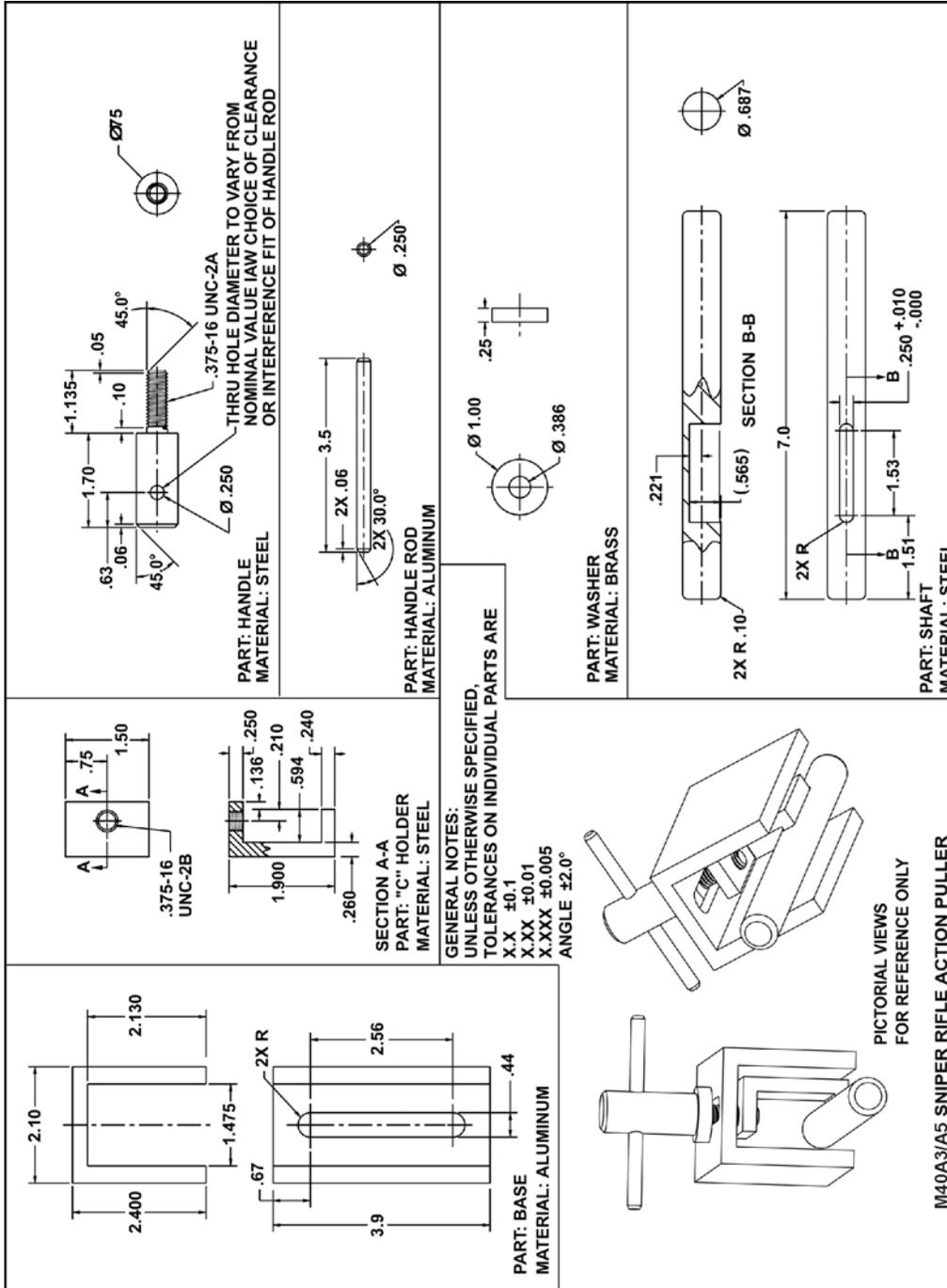
Intermediate

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**SCOPE**

This work package includes complete instructions for making items authorized to be manufactured or fabricated at the Intermediate Maintenance level.

MANUFACTURED ITEMS



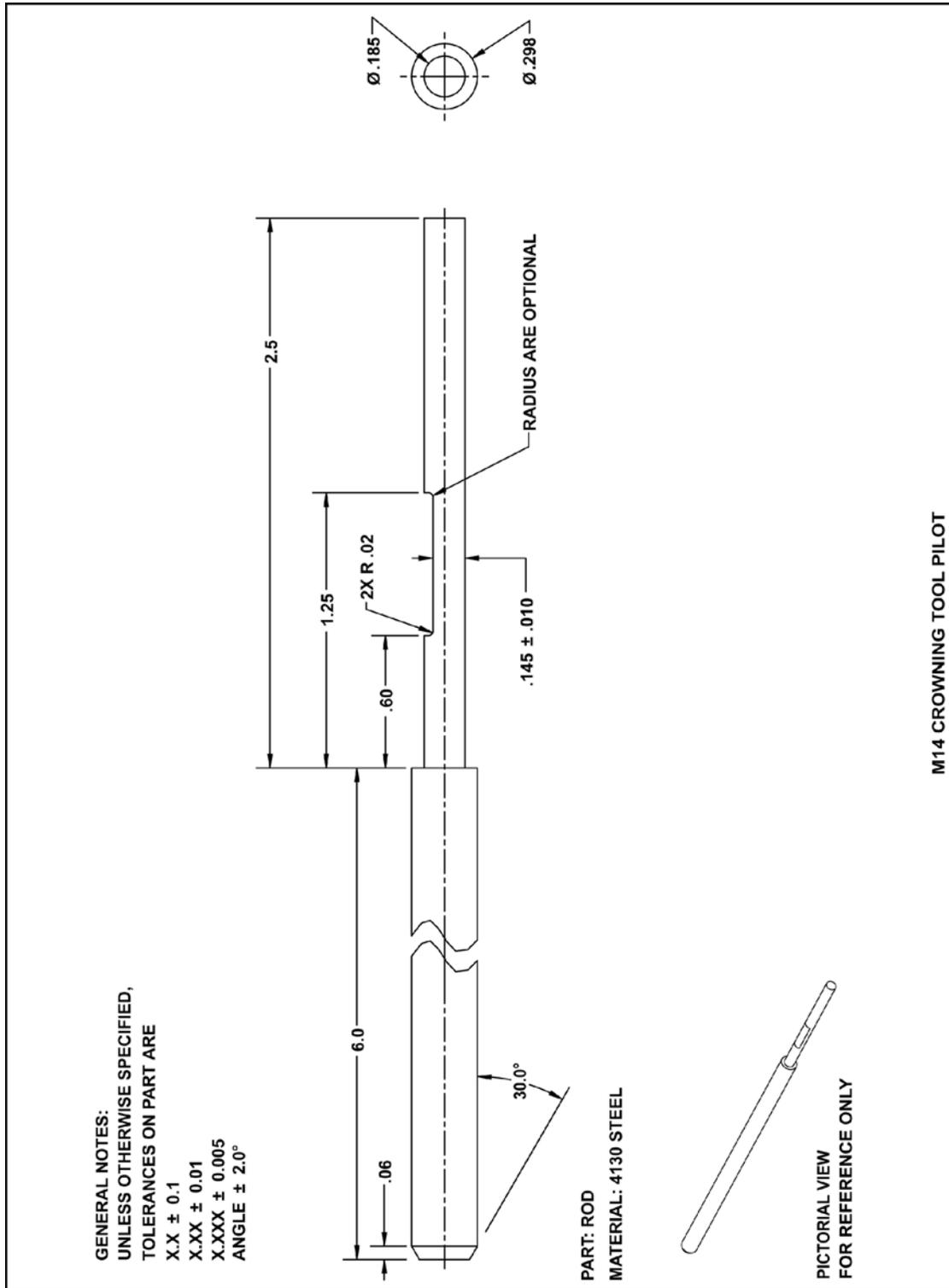
M40-062

MANUFACTURED ITEMS - CONTINUED

<p>PART: HANDLE MATERIAL: STEEL</p> <p>PART: PIN MATERIAL: STEEL P/N: MS16562-219</p> <p>MODIFY PIN TO DIMENSION SHOWN</p>	<p>PART: BODY MATERIAL: ALUMINUM</p> <p>GENERAL NOTES: UNLESS OTHERWISE SPECIFIED, TOLERANCES ON INDIVIDUAL PARTS ARE X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.005 ANGLE ± 2.0°</p> <p>SECTION A-A</p>
<p>PART: PIN MATERIAL: STEEL P/N: MS16562-226</p>	<p>PICTORIAL VIEWS FOR REFERENCE ONLY</p> <p>REMINGTON 700 BOLT DISASSEMBLY TOOL</p>
<p>PART: ARM MATERIAL: STEEL</p>	

M40-063

MANUFACTURED ITEMS - CONTINUED



M40-064

QUALITY ASSURANCE CHECKLIST

<b>M40A3/A5 SNIPER RIFLE QC CHECKLIST</b>		
<b>SECTION ONE</b>		
<b>1. Perform Safety Check</b>		
<b>QC</b>	<b>QA</b>	
		A. Remove magazine.
		B. Inspect chamber for ammunition.
		C. Function test the safety. There will be distinct clicks, positive catch, and no "mushiness".
<b>2. Inspect Muzzle Break (If Applicable)</b>		
<b>QC</b>	<b>QA</b>	
		A. No cracks.
		B. Centered.
		C. No burrs within splines.
		D. Refinished (blued or parked).
		E. Barrel crown clean, uniform, smooth. Crown cut at 45 degrees.
<b>3. Sling Swivels and Bipod</b>		
<b>QC</b>	<b>QA</b>	
		A. Check for proper installation of sling swivels.
		B. Ensure bipod has been installed.
<b>4. Apparent Misalignment</b>		
<b>QC</b>	<b>QA</b>	
		A. Check fit of magazine with bolt closed.
		B. Magazine must not bind on stock or receiver.
<b>5. Receiver to Stock Fit</b>		
<b>QC</b>	<b>QA</b>	
		A. With rifle upside down, lightly tap top of buttstock on padded surface.
		B. Complete serial number is written in barrel channel.

QUALITY ASSURANCE CHECKLIST - CONTINUED

<b>M40A3/A5 SNIPER RIFLE QC CHECKLIST</b>		
<b>6. Stock</b>		
<b>QC</b>	<b>QA</b>	
		A. Check for cracks around screw holes, sling swivel areas, and all welds.
		B. Check buttstock and pads to ensure serviceability.
		C. Ensure adjustable cheek piece goes up and down.
<b>7. Barrel and Receiver Group</b>		
<b>QC</b>	<b>QA</b>	
		A. Quickly cycle bolt in and out of battery three (3) times to simulate firing and ensure proper function.
		B. Check bolt; it should not pull out of the disassembly notch on firing.
		C. Inspect optical platform welds for cracks.
		D. Barrel will be free of carbon and rust.
		E. Bolt guide will not be loose and ensure the barrel is knurled.
		F. Barrel will have month, year, and PWS-P stamped near breech.
		G. Receiver will be free of cracks and rust.
		H. Rifle will be refinished and have a new appearance.
<b>8. Bolt</b>		
<b>QC</b>	<b>QA</b>	
		A. Bottom of extractor will not protrude past bottom of bolt.
		B. Firing pin will be chromed with a smooth round top and no chips or cracks.
		C. Face of bolt will not be chipped or cracked.
		D. Inspect the lugs and rest of bolt body for cracks.
		E. Bolt will be scribed with the entire serial number on underside.
<b>9. Headspace and Breechbore</b>		
<b>QC</b>	<b>QA</b>	
		A. Bolt will close on a 1.630 headspace gage.
		B. Take breechbore reading. Minimum breechbore reading will be zero. Maximum reading will be eight (8).

QUALITY ASSURANCE CHECKLIST - CONTINUED

<b>M40A3/A5 SNIPER RIFLE QC CHECKLIST</b>		
<b>10. Scope</b>		
<b>QC</b>	<b>QA</b>	
		A. Check elevation for serviceability.
		B. Check windage for serviceability.
		C. Inspect objective and eyepiece lenses for scratches, pits, or chips that interfere with the field of view.
		D. Ensure reticle has all mil dots in place and that reticle is not loose from its post.
		E. Check the scope; ensure it's not bent, damaged or punctured.
		F. Check the eyepiece focus ring and verify it is not cracked or unserviceable.
		G. Check the eyepiece focus ring, ensure tight and serviceable.
		H. Shake scope to detect loose glass.
		I. Check for moisture (fogging).
		J. Check eyepiece assembly for looseness from scope body.
		K. Check objective assembly for looseness from scope body.
		L. Scope serial number is noted in Weapon Record Book.
<b>11. Trigger Weight</b>		
<b>QC</b>	<b>QA</b>	
		A. Perform safety function test. Refer to WP 0019 00.
		B. Minimum trigger weight is 3 lb. Maximum weight is 5 lb.
<b>12. Final Check</b>		
<b>QC</b>	<b>QA</b>	
		A. Inspect for proper lubrication.
		B. Inspect Weapon Record Book for required and completed entries.

**SECTION TWO**

**Quality Control Inspectors' Verification**

Rifle Serial Number \_\_\_\_\_

QC Rank and Name (Last, First, Middle)

QA Rank and Name (Last, First, Middle)

\_\_\_\_\_  
QC Inspector's Signature

\_\_\_\_\_  
QA Inspector's Signature

\_\_\_\_\_  
Inspection Date

\_\_\_\_\_  
Inspection Date

\_\_\_\_\_

\_\_\_\_\_

**SECTION THREE**

**Proof and Function Verification**

Rifle Serial Number \_\_\_\_\_

Date Proofed and Functioned \_\_\_\_\_

QC Rank and Name (Last, First, Middle)

QA Rank and Name (Last, First, Middle)

\_\_\_\_\_  
QC Inspector's Signature

\_\_\_\_\_  
QA Inspector's Signature

**Rifle Test Verification**

Date Tested \_\_\_\_\_

QC Rank and Name (Last, First, Middle)

QA Rank and Name (Last, First, Middle)

\_\_\_\_\_  
QC Inspector's Signature

\_\_\_\_\_  
QA Inspector's Signature

\_\_\_\_\_  
Group Size

- a. PWS stands for Precision Weapons Section.
- b. P stands for proof fired.
- c. MO/YR stands for month and year of proof fire.

**END OF WORK PACKAGE**



**SCOPE**

This Repair Parts List (RPL) authorizes spares, repair parts, and other special support equipment required for performance of Organizational and Intermediate Maintenance of the 7.62 mm, M40A3/A5 Sniper Rifle. It authorizes the requisitioning, issue and disposition of spares, repair parts indicated by the Source, Maintenance, and Recoverability (SMR) codes.

**EXPLANATION OF COLUMNS**

1. **Item No. (Column 1).** The item number indicates the number used to identify items called out in an illustration.
2. **SMR Code (Column 2).** The SMR code is a 5-position code containing supply/requisition information, maintenance level authorization criteria, and disposition instructions as shown in the following manner:

SOURCE CODE	MAINTENANCE CODE		RECOVERABILITY CODE
XX 1st two positions How to obtain an item.	X 3rd position Who can install, replace or use the item.	X 4th position Who can perform repair* on the item.	X 5th position Who determines disposition action on an unserviceable item.

**NOTE**

**\* Complete repair: maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the repair function in a user environment in order to restore serviceability to a failed item.**

**EXPLANATION OF COLUMNS - CONTINUED**

- a. **Source Code.** The source code indicates how to obtain an item needed for maintenance, repair, or overhaul of equipment and is entered in the first and second positions of the SMR code as follows:

SOURCE CODE	ECHELON	APPLICATION/EXPLANATION
PA		<p>Stocked items: Use the applicable National Stock Number (NSN) to requisition items with these source codes. These items are authorized to the level indicated by the code entered in the 3rd position of the SMR code.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>Items Coded PC Are Subject to Deterioration.</b></p>
PB		
PC		
PD		
PE		
PF		
PG		
KD		Items with these codes are not to be requested/requisitioned individually. These items are part of a kit authorized to the maintenance level indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied for.
KF		
KB		
MO	Org	Items with these codes are not to be requisitioned individually. They must be made from bulk material identified by part number in the description column. No bulk material items are applicable for this weapon.
MF	3rd	
MH	4th	
ML	MH	
MD	Depot	
AO	Org	Items with these codes are not to be requested/requisitioned individually. The parts that make the assembled items must be requisitioned, fabricated, or assembled at the level of maintenance indicated by source code. If the 3rd position code of the SMR code authorizes the item to be replaced, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
AF	3rd	
AH	4th	
AD	Depot	
XA		Do not requisition an XA-coded item. Order its next higher assembly. (Also refer to the NOTE below).
XB		If an XB item is not available from salvage, order it using the CAGE and part number given.
XC		XC Installation drawing, diagram, instruction sheet, and field service drawing identified by the manufacturer's part number.
XD		XD Items not stocked. Order an XD-coded item through normal supply channels using the CAGE and part number given.

**NOTE**

**Cannibalizing or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those coded XA.**

**EXPLANATION OF COLUMNS - CONTINUED**

b. **Maintenance Code.** The maintenance code indicates the levels of maintenance authorized to use and repair support items and is entered in the third and fourth positions of the SMR code as follows:

- (1) The maintenance code entered in the third position indicates the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code indicates one of the following maintenance levels:

MAINTENANCE CODE	APPLICATION/EXPLANATION
C	Crew or operator maintenance done within unit maintenance.
O	Organizational level can remove, replace, and use the item.
F	Third echelon can remove, replace, and use the item.
H	Fourth echelon can remove, replace, and use the item.
L	Specialized repair activity can remove, replace, and use the item.
D	Depot level can remove, replace, and use the item.

- (2) The maintenance code entered in the fourth position indicates whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e., perform all authorized repair functions). The maintenance code indicates one of the following maintenance levels:

**NOTE**

**Some limited repair may be done on the item at a lower level of maintenance, if authorized by the SMR codes.**

MAINTENANCE CODE	APPLICATION/EXPLANATION
O	Organizational level is the lowest level that can completely repair the item.
F	Intermediate third echelon is the lowest level that can completely repair the item.
H	Intermediate fourth echelon is the lowest level that can completely repair the item.
L	Specialized repair activity (designated the specialized repair activity) is the lowest level that can completely repair the item.
D	Depot level is the lowest level that can completely repair the item.
Z	Non-repairable. No repair is authorized.
B	No repair authorized. No parts or special tools are authorized for maintenance of a B-coded item. However, the item may be reconditioned by adjusting or lubricating at the user level.

**EXPLANATION OF COLUMNS - CONTINUED**

- c. **Recoverability Code.** The recoverability code indicates the disposition action on unserviceable items and is entered in the fifth position of the SMR code as follows:

RECOVERABILITY CODE	APPLICATION/EXPLANATION
Z	Non-repairable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
O	Repairable item. When uneconomically repairable, condemn and dispose of at the Organizational level.
F	Repairable item. When uneconomically repairable, condemn and dispose of at the third echelon level.
H	Repairable item. When uneconomically repairable, condemn and dispose of at the fourth echelon level.
D	Repairable item. When uneconomically repairable, condemn and dispose of at the Depot level.
L	Repairable item. Condemnation and disposal not authorized below specialized repair activity.
A	Item requires special handling or condemnation procedures for specific reason (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

- 3. **NSN (Column 3).** The national stock number for the item is listed in this column.
- 4. **CAGE (Column 4).** The Commercial and Government Entity Code is a 5-digit code used to identify the manufacturer, distributor, or government activity that supplies the item.
- 5. **Part Number (Column 5).** Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or government activity) that controls the design and characteristics of the items by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

**NOTE**

**When a NSN is used to requisition an item, the item received may be a different part number from the part ordered.**

- 6. **Item Identification (Column 6).** This column includes the following information:
  - a. Federal item name and, when required, a minimum description identifying the items.
  - b. The statement END OF FIGURE appears just below the last item description in Columns 6 and 7 for a given figure in WP 0033 00.
- 7. **QTY (Column 7).** The quantity (QTY) column indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, sub-functional group, or an assembly. The letter V appearing in this column in lieu of a quantity, indicates the quantity is variable and the quantity may vary from application to application.

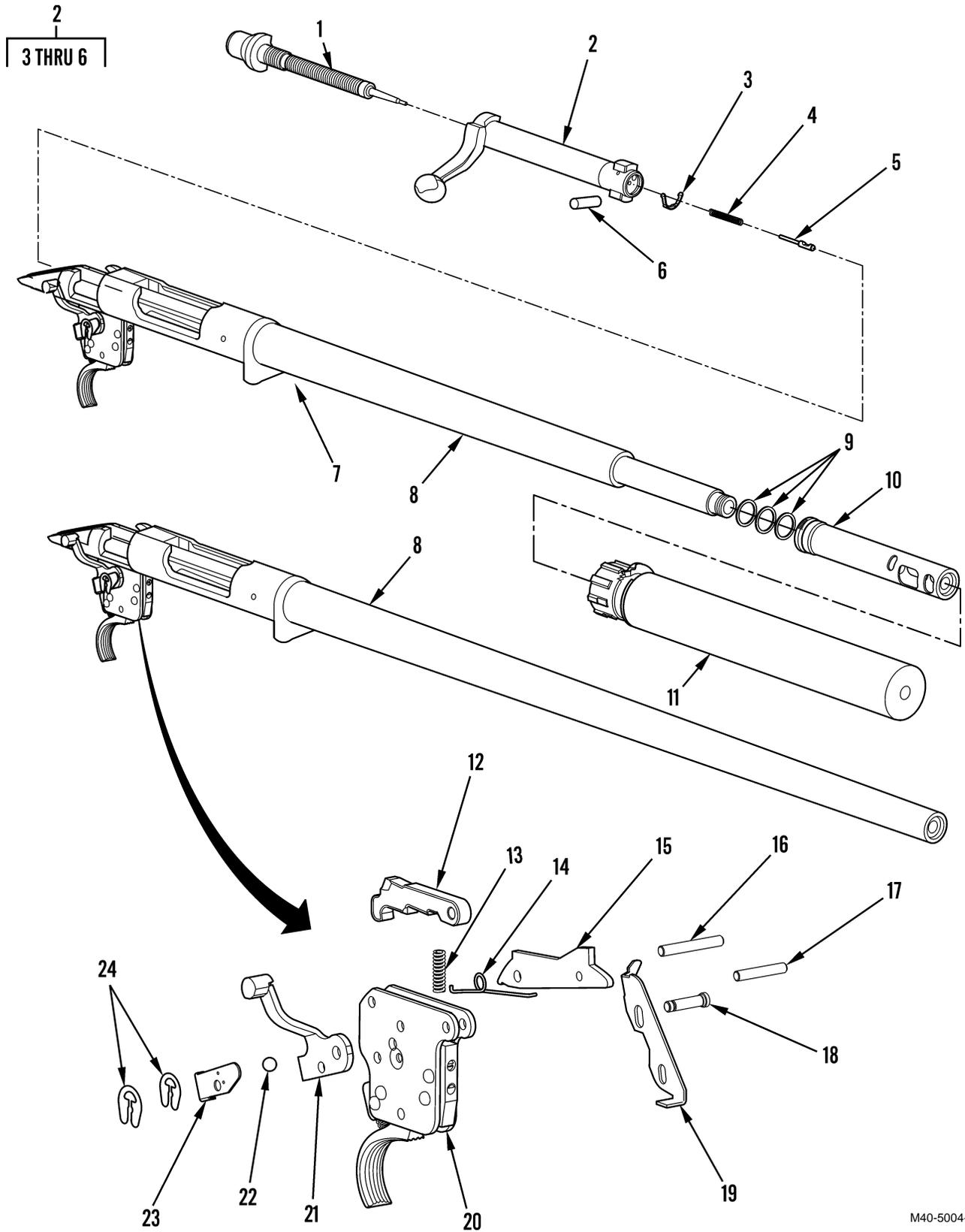
***HOW TO LOCATE REPAIR PARTS***

1. Unknown National Stock Number (NSN) or Part Number.
  - a. Identify the item from the illustration and note the item number.
  - b. Look in the Repair Parts List (RPL) for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.
2. Known NSN or Part Number.
  - a. Using the NSN or part number, locate the item in the RPL. Note the pertinent information.
  - b. Verify the identity of the item.

**END OF WORK PACKAGE**







M40-5004-1

Figure 1. Bolt, Barrel, and Receiver with Trigger Assembly, Muzzle Brake, and Suppressor

TM 05539-IN

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USEABLE ON CODES (UOC)	(7) QTY
FIG. 1 BOLT, BARREL, AND RECEIVER WITH TRIGGER ASSEMBLY, MUZZLE BRAKE, AND SUPPRESSOR						
1	PAOFZ	1005-00-999-8821	50446	22041	PIN, FIRING ASSEMBLY . . . . .	1
2	PAFFF		3A703	16861	BODY, BOLT ASSEMBLY . . . . .	1
3	PAFZZ	1005-00-999-8818	50446	93712	. EXTRACTOR, CARTRIDGE . . . . .	1
4	PAOZZ	5360-00-999-8817	50446	17019	. SPRING, EJECTOR . . . . .	1
5	PAOZZ	1005-00-999-8815	50446	17017	. EJECTOR, CARTRIDGE . . . . .	1
6	PAOZZ	1005-00-999-8816	50446	94555	. PIN, EJECTOR . . . . .	1
7	MDDDD		3GUL2	99004A1102	LUG, RECOIL . . . . .	1
8	XADDD		3GUL2	N/A	BARREL AND RECEIVER ASSY.M40A3 (NOT A PROCURABLE ITEM) . . . . .	1
8	XADDD		3GUL2	N/A	BARREL AND RECEIVER ASSY.M40A5 (NOT A PROCURABLE ITEM) . . . . .	1
9	PAFZZ	5365-01-566-6499	0BJZ8	70121-1	SHIM SET . . . . .	1
10	PAFZZ	1005-01-565-6165	0BJZ8	MB762SSAL/ RE	BRAKE, MUZZLE M40A5 . . . . .	1
11	PAOZF	1005-01-565-6164	0BJZ8	FA762SS-BK	SUPPRESSOR, FLASH M40A5 . . . . .	1
12	XAFZZ		3A703	19461	CAM, SEAR-SAFETY . . . . .	1
13	PAFZZ	5360-00-887-5798	50446	17047	SPRING, HELICAL COMP . . . . .	1
14	PAFZZ	5360-00-999-8812	50446	15224	SPRING, BOLT STOP . . . . .	1
15	PAFZZ	1005-00-999-8809	50446	17013	STOP, BOLT . . . . .	1
16	PAFZZ	5315-01-511-8332	3A703	24475	PIN, LOCK . . . . .	1
17	PAFZZ	1005-00-022-9777	50446	24476	PIN, SEAR . . . . .	1
18	PAFZZ	1005-01-511-8329	3A703	96028	PIN, SAFETY, SNIPER RIFLE . . . . .	1
19	PAFZZ	1005-01-530-0452	3A703	15478	BOLT STOP RELEASE . . . . .	1
20	PAFZZ	1005-01-511-8314	3A703	96024	TRIGGER ASSEMBLY . . . . .	1
21	PAFZZ	1005-01-518-3766	3A703	F92297	SAFETY, SMALL ARMS . . . . .	1
22	PAFZZ	1005-01-511-8319	3A703	23225	BALL, SAFETY, SNIPER . . . . .	1
23	PAFZZ	1005-01-518-3772	3A703	15368	BRACKET, MOUNTING . . . . .	1
24	PAFZZ	5310-00-887-5797	50446	17044	WASHER, SAFETY, SNAP . . . . .	1

END OF FIGURE

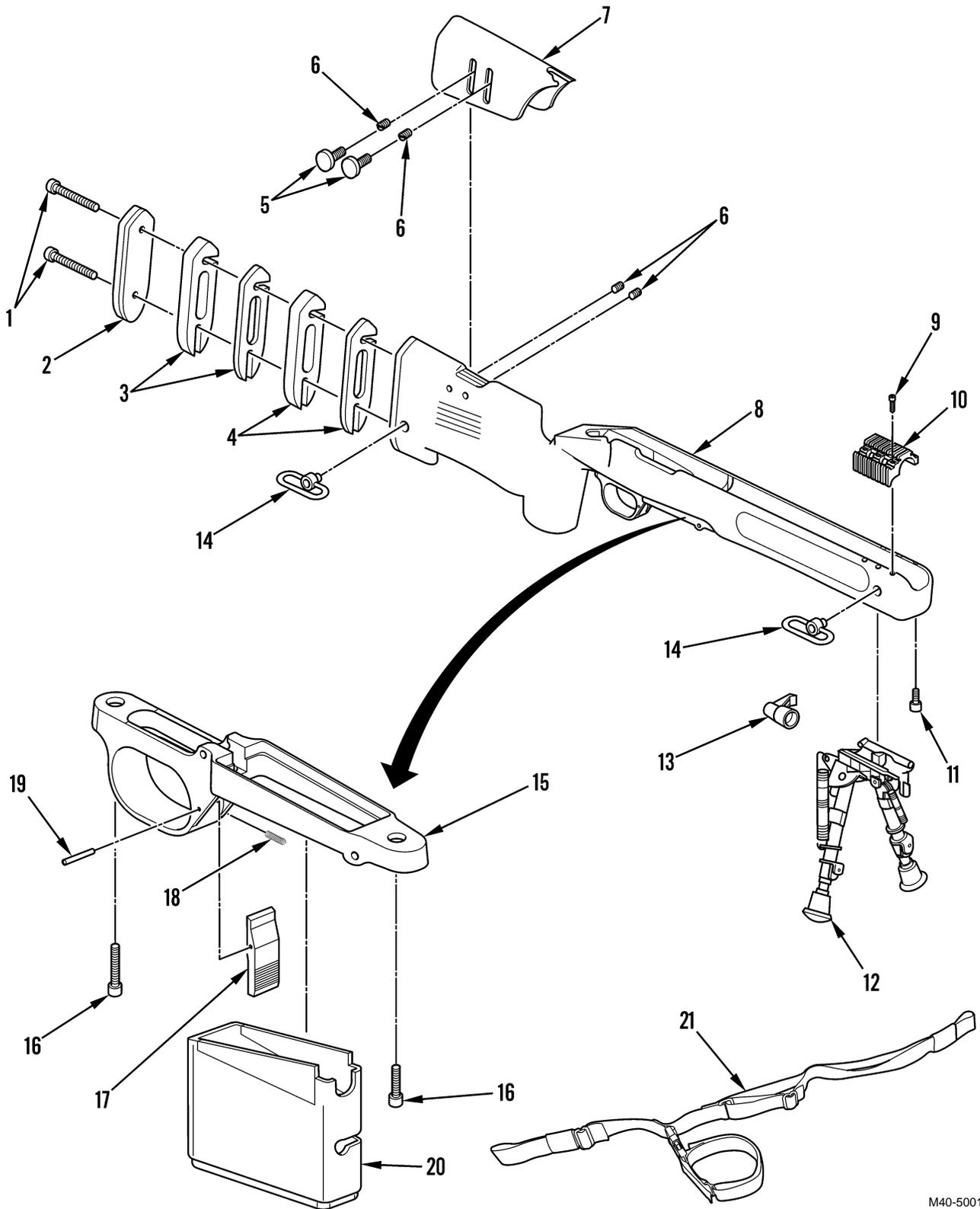


Figure 2. Stock, Bipod, Trigger Guard, Magazine, and Sling

TM 05539-IN

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USEABLE ON CODES (UOC)	(7) QTY
FIG. 2 STOCK, BIPOD, TRIGGER GUARD, MAGAZINE, AND SLING						
1	PAOZZ		0A4K4	SPA SYS SCR	SCREW,RECOIL PAD.....	2
2	PAOZZ	1005-01-511-8420	0LB99	SPA-SYS	PAD,RECOIL.....	1
3	PAOZZ	5365-01-511-8431	0LB99	SPA-50	SPACER,RECOIL PAD 1/2 INCH.....	2
4	PAOZZ	5365-01-511-8424	0LB99	SPA-25	SPACER,PLATE 1/4 INCH.....	2
5	PAOZZ	5305-01-511-8438	0LB99	C/P KNOB	SCREW,CHEEK,SNIPER.....	2
6	PAFZZ	5325-00-587-3306	96906	MS124775	INSERT,SCREW HEAD CRES HELICAL COIL FINE THREAD, 2 1/2" DIAMETER NOMINAL LENGTH	4
7	PAOZZ	1005-01-511-8433	0LB99	SAD C/P	SUPPORT,CHEEK,SNIPER.....	1
8	XADDD		0A4K4	A-4	STOCK ASSEMBLY MODEL A4.....	1
9	PAOZZ		L4041	A-004/M40/ 04	SCREW.....	6
10	PAOZZ		L4041	A-004/M40/ 01	MOUNT, TOP.....	1
11	PAFZZ	5307-01-472-3395	1365	98003Q2003	STUD,BIPOD.....	1
12	PAOZZ	1005-01-511-7758	57215	S-BRM	BIPOD,RIFLE WITH LEG NOTCHES AND SWIVEL.....	1
13	PAOZZ	1005-01-511-9944	ITE83	875	POD-LOC,BIPOD,SNIPER.....	1
14	PAOZZ	1005-01-511-8448	7R212	CC-35-SS	SWIVEL,SLING.....	1
15	PAFZZ	1005-01-557-3088	0WXH8	306-82-01	GUARD,TRIGGER.....	1
16	PAFZZ	5305-01-511-8323	4J007	60655206	SCREW,CAP,HEXAGON H.....	2
17	PAFZZ	1005-01-557-3090	0WXH8	306-82--2	LEVER,MAGAZINE RELEASE.....	1
18	PAFZZ	1005-01-551-2742	0WXH8	306-82-5	SPRING,RELEASING LEVER.....	1
19	PAFZZ	5315-00-821-1225	80205	MS16555- 329	PIN,STRAIGHT,HEADLESS.....	1
20	PAFZZ	1005-01-557-3101	0WXH8	3901	MAGAZINE.....	1
21	PAFZZ	1005-01-567-4936	19204	TISQCM2-7	SLING, CUFF.....	1

END OF FIGURE

3  
4 THRU 7

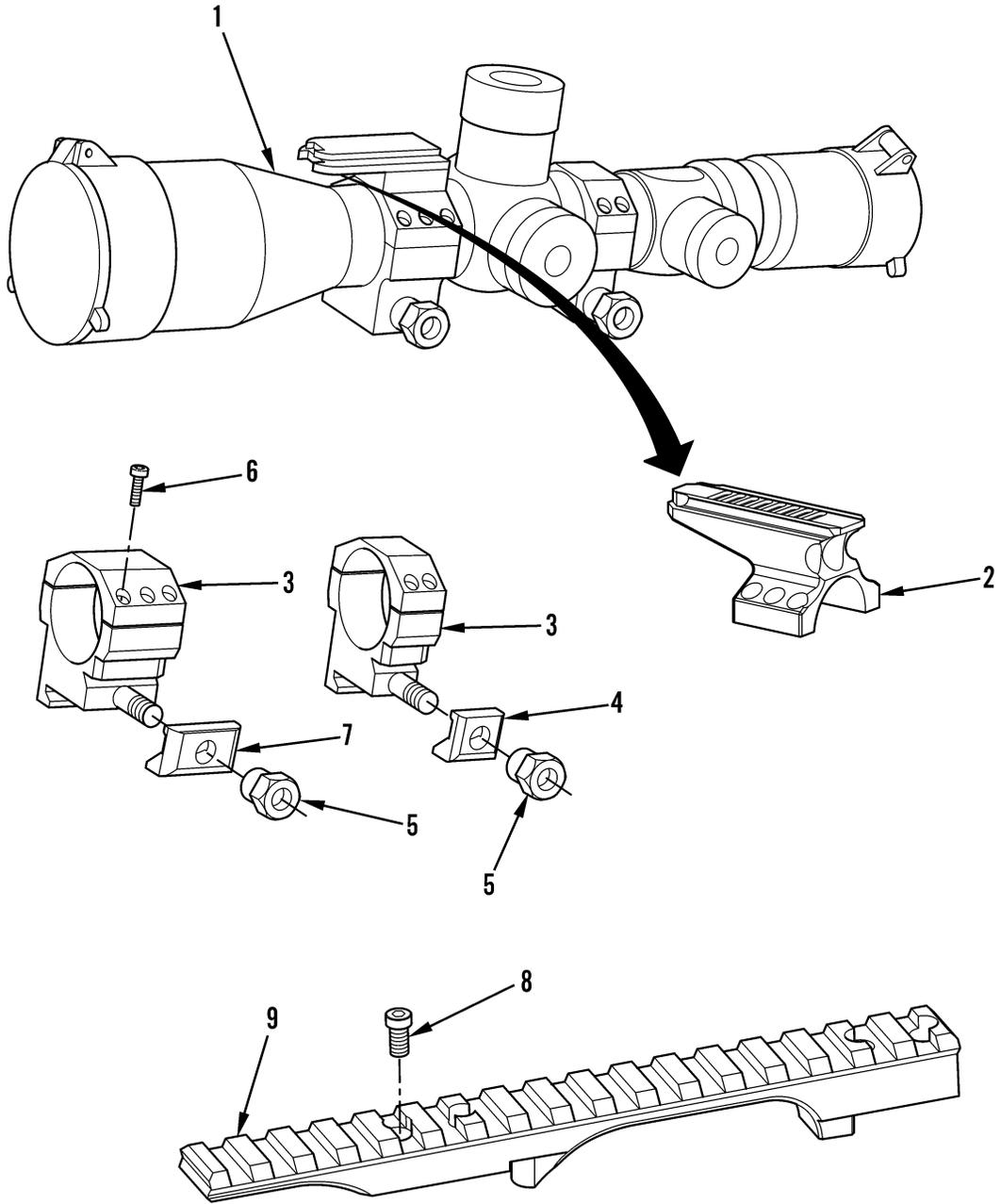


Figure 3. Telescope with Optical Platform and Ring Mount

**TM 05539-IN**

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USEABLE ON CODES (UOC)	(7) QTY
FIG. 3 TELESCOPE WITH OPTICAL PLATFORM AND RING MOUNT						
1	PAFZZ	1240-01-533-1854	090F8	PRM8541	TELESCOPE, ARTICULAT . . . . .	1
2	PAFZZ	5340-01-512-0081	01365	990004A153	BRACKET, SNIPER RIFLE . . . . .	1
				0		
3	PAFZZ	5365-01-511-9954	0WXH8	306-24	SCOPE RING, SNIPER RIFLE . . . . .	1
4	PAOZZ	5340-01-511-9812	0WXH8	306-05-4	.CLAMP, FOOT, REAR RING . . . . .	1
5	PAOZZ	5310-01-511-9822	0WXH8	306-05-9	.NUT, CROSS BOLT . . . . .	2
6	PAFZZ	5305-01-511-9829	0WXH8	306-05-08	.CAP SCREW RING ASSEMBLY . . . . .	10
7	PAOZZ	5340-01-511-9842	0WXH8	306-05-5	.CLAMP, FOOT, FRONT RING . . . . .	1
8	PAFZZ	5305-01-511-9802	1JQC4	OP-700SA- SC	SCREW, SIGHT, SNIPER OPTICAL . . . . . PLATFORM MOUNTING	4
9	PAFZZ	1005-01-511-8443	1JQC4	OP-700SA- 30	PLATFORM, OPTIC, SNIPER . . . . .	1

END OF FIGURE

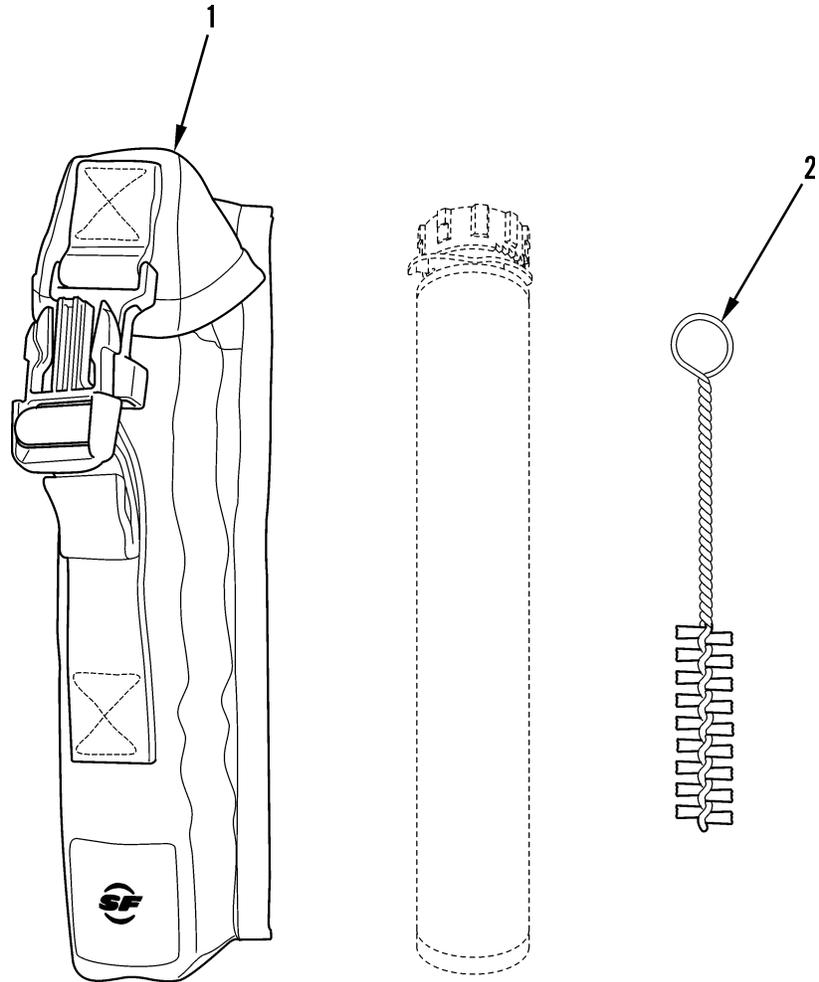


Figure 4. Suppressor Case and Cleaning Brush

**TM 05539-IN**

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USEABLE ON CODES (UOC)	(7) QTY
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FIG. 4 SUPPRESSOR CASE AND  
CLEANING BRUSH

1	PAOZZ	8465-01-566-6807	OBJZ8	70014-1	CARRYING CASE, SUPPRESSOR.....	1
2	PAOZZ	1005-01-566-6422	OBJZ8	70-03-015	BRUSH, CLEANING.....	1

END OF FIGURE

**TM 05539-IN**

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**TM 05539-IN**

CROSS-REFERENCE INDEXES  
NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
1005-00-022-9777	1	15	1005-01-511-8433	2	7
5325-00-587-3306	2	6	5305-01-511-8438	2	5
5315-00-821-1225	2	19	1005-01-511-8443	3	9
5310-00-887-5797	1	22	1005-01-511-8448	2	14
5360-00-887-5798	1	11	5305-01-511-9802	3	8
1005-00-999-8809	1	13	5340-01-511-9812	3	4
5360-00-999-8812	1	12	5310-01-511-9822	3	5
1005-00-999-8815	1	5	5305-01-511-9829	3	6
1005-00-999-8816	1	6	5340-01-511-9842	3	7
5360-00-999-8817	1	4	1005-01-511-9944	2	13
1005-00-999-8818	1	3	5365-01-511-9954	3	3
1005-00-999-8821	1	1	5340-01-512-0081	3	2
5307-01-472-3395	2	11	1005-01-518-3766	1	19
1005-01-511-7758	2	12	1005-01-518-3772	1	21
1005-01-511-8314	1	18	1005-01-530-0452	1	17
1005-01-511-8319	1	20	1240-01-533-1854	3	1
5305-01-511-8323	2	16	1005-01-551-2742	2	18
1005-01-511-8329	1	16	1005-01-557-3088	2	15
5315-01-511-8332	1	14	1005-01-557-3090	2	17
1005-01-511-8420	2	2	1005-01-557-3101	2	20
5365-01-511-8424	2	4	1005-01-566-6422	4	2
5365-01-511-8431	2	3	5365-01-566-6499	1	9
1005-01-567-4936	2	21	8465-01-566-6807	4	1

**TM 05539-IN**

## CROSS-REFERENCE INDEXES

## PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
50446	15224	5360-00-999-8812	1	12
3A703	15368	1005-01-518-3772	1	21
3A703	15478	1005-01-530-0452	1	17
3A703	16861		1	2
50446	17013	1005-00-999-8809	1	13
50446	17017	1005-00-999-8815	1	5
50446	17019	5360-00-999-8817	1	4
50446	17044	5310-00-887-5797	1	22
50446	17047	5360-00-887-5798	1	11
3A703	19461		1	10
50446	22041	1005-00-999-8821	1	1
3A703	23225	1005-01-511-8319	1	20
3A703	24475	5315-01-511-8332	1	14
50446	24476	1005-00-022-9777	1	15
0WXH8	306-05-08	5305-01-511-9829	3	6
0WXH8	306-05-4	5340-01-511-9812	3	4
0WXH8	306-05-5	5340-01-511-9842	3	7
0WXH8	306-05-9	5310-01-511-9822	3	5
0WXH8	306-24	5365-01-511-9954	3	3
0WXH8	306-82-01	1005-01-557-3088	2	15
0WXH8	306-82--2	1005-01-557-3090	2	17
0WXH8	306-82-5	1005-01-551-2742	2	18
0WXH8	3901	1005-01-557-3101	2	20
4J007	60655206	5305-01-511-8323	2	16
OBJZ8	70014-1	8465-01-566-6807	4	1
OBJZ8	70121-1	5365-01-566-6499	1	9
OBJZ8	70-03-015	1005-01-566-6422	4	2
ITE83	875	1005-01-511-9944	2	13
50446	93712	1005-00-999-8818	1	3
50446	94555	1005-00-999-8816	1	6
3A703	96024	1005-01-511-8314	1	18
3A703	96028	1005-01-511-8329	1	16
1365	98003Q2003	5307-01-472-3395	2	11
01365	990004A1530	5340-01-512-0081	3	2
3GUL2	99004A1102		1	7
L4041	A-004/M40/01		2	10
L4041	A-004/M40/04		2	9
0A4K4	A-4		2	8
0LB99	C/P KNOB	5305-01-511-8438	2	5
7R212	CC-35-SS	1005-01-511-8448	2	14
3A703	F92297	1005-01-518-3766	1	19
OBJZ8	FA762SS-8K	1005-01-565-6164	1	11
OBJZ8	MB762SSAL/RE	1005-01-565-6165	1	10
96906	MS124775	5325-00-587-3306	2	6
19204	TISQCM2-7	1005-01-567-4639	2	21

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**TM 05539-IN**

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80205	MS16555-329	5315-00-821-1225	2	19
1JQC4	OP-700SA-30	1005-01-511-8443	3	9
1JQC4	OP-700SA-SC	5305-01-511-9802	3	8
090F8	PRM8541	1240-01-533-1854	3	1
0LB99	SAD C/P	1005-01-511-8433	2	7
57215	S-BRM	1005-01-511-7758	2	12
0A4K4	SPA SYS SCR		2	1
0LB99	SPA-25	5365-01-511-8424	2	4
0LB99	SPA-50	5365-01-511-8431	2	3
0LB99	SPA-SYS	1005-01-511-8420	2	2
3GUL2	TBD-BAR		1	8
3GUL2	TBD-BAR 2		1	8
OBJZ8	TBD-SLING		2	21



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References .....	0029 00-1
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## THE METRIC SYSTEM AND EQUIVALENTS

<p><b>Linear Measure</b></p> <p>1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches          1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches          1 Kilometer = 1000 Meters = 0.621 Miles</p> <p><b>Weights</b></p> <p>1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces          1 Kilogram = 1000 Grams = 2.2 Pounds          1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons</p> <p><b>Liquid Measure</b></p> <p>1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces          1 Liter = 1000 Milliliters = 33.82 Fluid Ounces</p>	<p><b>Square Measure</b></p> <p>1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches          1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet          1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles</p> <p><b>Cubic Measure</b></p> <p>1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches          1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet</p> <p><b>Temperature</b></p> <p><math>5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}</math>          212° Fahrenheit is equivalent to 100° Celsius          90° Fahrenheit is equivalent to 32.2° Celsius          32° Fahrenheit is equivalent to 0° Celsius  <math>9/5 \text{ C}^{\circ} + 32 = \text{F}^{\circ}</math></p>
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## APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

To Change	To	Multiply By
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

