ARMY *TM 9-1010-221-23&P
AIR FORCE TO 11W3-9-4-2
MARINE CORPS TM 07700A-23&P/2
NAVY SW 370-AE-MMI-010

TECHNICAL MANUAL

FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FOR

LAUNCHER, GRENADE, 40MM, M203, W/E
NSN 1010-00-179-6447 (EIC 4QB)
LAUNCHER, GRENADE, 40MM, M203A1, W/E
NSN 1010-01-434-9028 (EIC 4QH)
LAUNCHER, GRENADE, 40MM, M203A2, W/E
NSN 1010-01-495-8511 (EIC 4QJ)

*TM 9-1010-221-23&P dated 30 November 2012 supersedes TM 9-1010-221-23&P dated 12 January 1993, including all changes.

HEADQUARTERS, DEPARTMENTS OF THE ARMY, AIR FORCE AND NAVY AND HEADQUARTERS, MARINE CORPS
30 NOVEMBER 2012

PCN 184 07700 200

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 comply may result in personnel injury or death. Also included are explanations of safety and hazardous materials icons used within the technical manual.

FIRST AID

Army personnel, refer to FM 4-25.11 for First Aid information.

Air Force personnel, refer to AFMAN 44-163(I)

Marine Corps personnel, refer to MCRP 3-02G

Navy personnel, refer to NTRP 4-02.1.1

EXPLANATION OF SAFETY WARNING ICONS

EYE PROTECTION - Arrows bouncing off face shield show that particles flying through the air will harm face.

WEAPON FIRE - Accidental discharge of a weapon could cause serious injury or death.

EXPLOSION - Rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition, or high pressure.

GENERAL SAFETY WARNING DESCRIPTION

WARNING

Be sure to clear weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death.

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTION - Continued

WARNING

The old firing pin, Part Number 8448327 must be replaced by new firing pin Part Number 12002970. Failure to comply may result in damage to equipment and/or personnel injury or death.

EXPLANATION OF HAZARDOUS MATERIALS ICONS

CHEMICAL - Drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.

EYE PROTECTION - Person with goggles shows that the material will injure the eyes.

FIRE - Flame shows that a material may ignite and cause burns.

VAPOR - Human figure in a cloud shows that material vapors present a danger to life or health.

HAZARDOUS MATERIALS DESCRIPTION

WARNING

CLEANER, LUBRICANT, AND PRESERVATIVE (CLP)

Wear eye protection to avoid injury to the eye when cleaning your weapon and/or its parts. Failure to comply may result in personnel injury.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTION - Continued

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

- Solvent cleaning compound MIL-PRF-680 may be irritating to the eyes and skin. Wear protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

- Use solvent cleaning compound MIL-PRF-680 in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract. May cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: DO NOT induce vomiting. Seek immediate medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

- MIL-PRF-680 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

- Cloths or rags saturated with solvent cleaning compound must be disposed of in accordance with authorized facility procedures. Failure to comply may result in personnel death or injury. Seek medical attention in event of injury.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supersedes TM 9-1010-221-23&P dated 12 January 1993. Zero in the 'Change No.' column indicates an original page or work package.

Date of issue for the original manual is:

Original 30 November 2012

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 36 AND TOTAL NUMBER OF WORK PACKAGES IN THIS MANUAL IS 42 CONSISTING OF THE FOLLOWING:

Page/WP No.	Change No.	Page/WP No.	Change No.
Front Cover (2 pages)	0	WP 0020 (2 pages)	0
Warning Summary (4 pages)	0	WP 0021 (2 pages)	0
i-xvi (16 pages)	0	Chapter 5 title page	0
Chapter 1 title page	0	WP 0022 (8 pages)	0
WP 0001 (4 pages)	0	WP 0023 (4 pages)	0
WP 0002 (4 pages)	0	WP 0024 (4 pages)	0
WP 0003 (2 pages)	0	WP 0025 (2 pages)	0
Chapter 2 title page	0	WP 0026 (4 pages)	0
WP 0004 (2 pages)	0	WP 0027 (2 pages)	0
WP 0005 (10 pages)	0	WP 0028 (4 pages)	0
Chapter 3 title page	0	WP 0029 (4 pages)	0
WP 0006 (2 pages)	0	WP 0030 (4 pages)	0
WP 0007 (6 pages)	0	WP 0031 (4 pages)	0
Chapter 4 title page	0	WP 0032 (4 pages)	0
WP 0008 (2 pages)	0	WP 0033 (2 pages)	0
WP 0009 (2 pages)	0	WP 0034 (2 pages)	0
WP 0010 (44 pages)	0	WP 0035 (2 pages)	0
WP 0011 (16 pages)	0	WP 0036 (2 pages)	0
WP 0012 (8 pages)	0	WP 0037 (2 pages)	0
WP 0013 (4 pages)	0	Chapter 6 title page	0
WP 0014 (8 pages)	0	WP 0038 (4 pages)	0
WP 0015 (24 pages)	0	WP 0039 (4 pages)	0
WP 0016 (6 pages)	0	WP 0040 (4 pages)	0
WP 0017 (4 pages)	0	WP 0041 (4 pages)	0
WP 0018 (2 pages)	0	WP 0042 (2 pages)	0
WP 0019 (4 pages)	0	INDEX-1 – INDEX-2	0
	0	Inside back cover	0
	0	Back cover	0
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HEADQUARTERS, DEPARTMENTS OF THE ARMY,
AIR FORCE, AND NAVY AND HEADQUARTERS, MARINE CORPS
WASHINGTON, DC, 30 NOVEMBER 2012

TECHNICAL MANUAL
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FOR
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LAUNCHER, GRENADE, 40MM, M203A2, W/E
NSN 1010-01-495-8511 (EIC 4QJ)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Reports, as applicable by the requiring service, should be submitted as follows:

(A) Army - The preferred method is to submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet on the TACOM Unique Logistics Support Applications (TULSA) Web site. The Internet address is https://tulsa.tacom.army.mil. The DA Form 2028 is located under the TULSA Applications on the left-hand navigation bar. Fill out the form and click submit. Using this form on the TULSA Web site will enable us to respond more quickly to your comments and to better manage the DA Form 2028 program. You may also mail, e-mail, or fax your comments or DA Form 2028 directly to the U.S. Army TACOM Life Cycle Management Command. The postal mail address is U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP/TECH PUBS, MS 727, 6501 E. 11 Mile Road, Warren, MI 48397-5000. The email address is tacomlcmc.daform2028@us.army.mil. The fax number is DSN 786-1856 or Commercial (586) 282-1856.

(F) Air Force - For users without access to JCALS, submit AFTO Form 22 directly to WR/ALC/GRVEB, Robins AFB, GA. Send in your recommended changes via electronic mail. Our e-mail address is robins.ce.afto22@robins.af.mil.

(MC) Marine Corps - Submit notice of discrepancies or suggested changes on a NAVMC 10772. The NAVMC may be submitted using either of the following:
a The preferred method of submittal is using https://portal.logcom.usmc.mil/sites/pubs/default.aspx. Problems or questions regarding the NAVMC 10772 program should be reported by calling DSN 567-7628 or DSN 567-5017 (Commercial number is (229) 639-7628 or (229) 639-5017.)
b. The alternate method of submittal does not require a Common Access Card (CAC) to access the form. Click on http://navalforms.daps.dla.mil/web/public/forms, select the “Keyword Search” button, enter “10772” in the Search Criteria Box. Under “type” click on download page button. Click on PDF icon. Enter user data in the appropriate fields. Must have user’s contact information block filled with Unit address and telephone number. Click on the “Envelope” icon in the tool bar. Select “Send Copy,” click on “OK.” When the PDF document is created, an Outlook Email screen will open with the .PDF as an attachment. On the TO: line type SMB.LOG.Tech.Pubs.fct@usmc.mil. In the body of the email, type any additional information you wish to provide. Click “SEND.”
c. A reply will be furnished to you.

(N) Navy - Submit notice of discrepancies or suggested changes to Commander, Naval Surface Warfare Center, Crane Division, Code 2041, Crane, IN 47522-5020.

*TM 9-1010-221-23&P, dated 30 November 2012 supersedes TM 9-1010-221-23&P dated 12 January 1993, including all changes.

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HOW TO USE THIS MANUAL

SCOPE

This manual provides you with the information you will need to maintain the M203 Series Grenade Launchers.

Read this manual carefully before performing required maintenance. This manual will be referred to for Inspection/Maintenance and Repair procedures. The information in this manual applies to M16 Series Rifles and M4 Series Carbines. However, the M16A1 Rifle is illustrated in this technical manual.

1. All references in this manual are to Work Packages (WP) only. Reference to maintenance procedures is to the page where the respective initial setup appears.
2. Illustrations for the maintenance procedures show only those parts affected by the operation being performed.
3. Whenever the male gender is mentioned in the manual (e.g. crewman, repairman), it also pertains to females.
4. When a procedure is common between the M203, M203A1, and M203A2 grenade launchers, ONLY the M203 configuration will be depicted. If a procedure is not common to all three weapons, the procedure will be incorporated.

MANUAL CONTENT

The front matter in this manual consists of Warning Summary, Title Block page, and Table of Contents.

The information contained in this manual is presented in 7 chapters. Each chapter is divided into Work Packages (WP) that provide operating procedures, maintenance procedures, troubleshooting procedures and other information for specific systems or components. Each WP starts on a right-hand page. Page numbers consist of the WP number followed by a dash and another number. For example, "0001-9" means WP 0001, page 9.

The end of this manual contains an alphabetical index, DA Form 2028, and metric conversion chart.

FRONT MATTER

The Warning Summary starts on the first right-hand page immediately after the cover and should be read before performing any maintenance on the M203 Grenade Launcher.

The Title Block page includes the reporting of errors and recommending improvements statement.

The Table of Contents lists the chapters, figures, tables, and WPs in this manual.

CHAPTERS

Chapter 1 provides General Information, Equipment Description and Data, and Theory of Operation.

Chapter 2 provides Field Troubleshooting Master Index.

Chapter 3 provides Field Troubleshooting Procedures.

Chapter 4 provides Preventive Maintenance Checks and Services (PMCS).

Chapter 5 provides Field Maintenance Instructions.

Chapter 6 provides Repair Parts and Special Tools List (RPSTL) Parts Information .

HOW TO USE THIS MANUAL - Continued

CHAPTERS - Continued

Chapter 7 provides Supporting Information, including the titles of documents and publications referenced in this manual (References), Maintenance Allocation Chart (MAC) Introduction, MAC, Expendable and Durable Items List, and Tool Identification List.

ALPHABETICAL INDEX

An index is located after the last WP in this manual and provides an alphabetical listing of WPs contained in this manual.

DA FORM 2028

DA Form 2028 is used to report errors and to recommend improvements for the tasks in this manual.

METRIC CONVERSION CHART

The metric conversion chart converts U.S. standard measurements to metric equivalents. Measurements in this manual are provided in both U.S. standard and metric units.

WARNINGS, CAUTIONS, AND NOTES

You must read and understand this manual **BEFORE** performing maintenance on the M203 grenade launcher.

Throughout this manual you will see WARNING, CAUTION, and NOTE headings. There are good reasons for every one of the following headings:

WARNING: A warning is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in death or injury. Warnings must be strictly observed.

CAUTION: A caution is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in damage to, or destruction of, equipment or mission effectiveness. Cautions must be strictly observed.

NOTE: A note highlights an essential operating or maintenance procedure, condition, or statement.

Warnings and cautions appear immediately preceding the step to which they pertain. It is important to read and thoroughly understand the warnings and/or cautions before beginning maintenance. Notes may precede or follow the steps to which they pertain, depending on what makes the most sense.

INITIAL SETUP

Before starting a task, you must obtain all the tools, supplies, and personnel listed in the initial setup. Be sure to read the task before performing the maintenance. If any other tasks are referenced, you must go to the Initial Setup page for each of those tasks to find out what tools, supplies, and personnel will be needed.

1. **Tools and Special Tools** — For standard and special tools, see WP 0035, WP 0040, and WP 0042. Army and Marine Corps users are to use the Tools Set, Gage Set, and/or Tool Kit listed in the initial setup.
2. **Test Equipment** — For test equipment, see WP 0042.
3. **Materials/Parts** — Lists expendable materials and 100 percent replaceable parts. Each material or part is followed by a reference.
4. **References** — Lists other publications containing necessary information.

HOW TO USE THIS MANUAL - Continued

INITIAL SETUP - Continued

5. **Equipment Condition** — Lists conditions to be met before starting the procedure. The reference on the left of the condition is a work package reference to instructions for setting up the condition.

INDEXING

Five indexing procedures are used in this manual to help you locate information quickly:
- Table of Contents.
- Troubleshooting Index in WP 0004.
- National Stock Number (NSN) Index after the RPSTL in WP 0036.
- Part Number (P/N) Index after the NSN Index in WP 0037.
- Alphabetical Index at the back of this manual.

MAINTENANCE PROCEDURES

There are two maintenance chapters:

Army, Air Force, Navy, and Marine personnel use chapter four for Preventive Maintenance Checks and Services (PCMS).

Army, Air Force, Navy, and Marine personnel use chapter five for field maintenance procedures.

Air Force personnel: Only Air Force Specialty Code 3POXB Combat Arms Training and Maintenance (CATM) specialists, technicians, and gunsmiths are authorized to perform maintenance procedures contained in this manual.

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

Instructions on how to use the RPSTL can be found in WP 0022.

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION

FIELD MAINTENANCE
GENERAL INFORMATION

SCOPE

Type Of Manual

Field Maintenance, including the Repair Parts and Special Tools List (RPSTL).

Model Number and Equipment Name

M203, 40MM Grenade Launcher W/E, is attached to the M16 Series Rifles and the M203A1, 40MM Grenade Launcher, is attached to the M4 Series Carbines. M203A2, 40MM Grenade Launcher W/E, is attached to the M16A4 Rifles, and to the M4/M4A1 Carbines. Refer to TM 9-1005-249-23&P for M16 and M16A1 Rifle instructions. Refer to TM 9-1005-319-23&P for M16A2 and M4/M4A1 Carbine instructions.

Purpose of Equipment

Provides 40 mm grenade fire power to ground forces equipped with M16 Series Rifles and M4 Series Carbines.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual; or AR 700-138, Army Logistics Readiness and Sustainability.
Maintenance forms and records used by the Marine Corps personnel are prescribed by TM 4700-15/1.
Maintenance forms and records used by Air Force personnel are prescribed in AFI 21-101 and the applicable TO 00-20 Series Technical Orders.
Navy users should refer to their service peculiar directives to determine applicable maintenance forms and records to be used.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your M203/M203A1/M203A2 Grenade Launcher needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance.

All non-Aviation/Missile EIRs and PQDRs must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The PDREP site is: https://www.pdrep.csd.disa.mil/.

For Marine Corps users: Quality deficiency reports (QDR) shall be submitted on SF 368 in accordance with MCO 4855.10. A reply will be furnished to you.

If you do not have Internet access, you may submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 using email, regular mail, or fax using the addresses/fax numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

For Navy users: Submit notice of discrepancies or suggested changes to Commander, Naval Surface Warfare Center, Crane Division, Code 2041, Crane, IN 47522-5020.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.

Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from the processes will appear as cracking, softening, swelling, and/or breaking.

SF 368, Product Quality Deficiency Report (PQDR) should be submitted to the address specified in PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

Army users submit PQDR (SF 368) to:
ATTN: AMSTA-AR-QAW-C
TACOM-ARDEC
6501 E. 11 Mile Rd.
Warren, MI 48397-5000

Air Force users submit PQDR in accordance with TO 00-35D-54, Technical Manual, USAF, Materiel Deficiency Reporting and Investigating System to:
WR-ALC/LKCB
Robins AFB, GA 31098-1640

Marine Corps users submit SF 368 in accordance with MCO 4855.10 (PQDR) to:
Commander
Marine Corps Logistics Bases
Code 808
Albany, GA 31704-5000

Navy users submit PQDR to:
Commander, Code 4801, Bldg 2521
NAVSURF WARCENDIV, 300 Hwy 361
Crane, IN 47522-5001

HAZARDOUS WASTE DISPOSAL INFORMATION

When servicing this weapon, performing maintenance, or disposing of materials such as:
cleaning fluids, dry cleaning solvents, lubricants, waste thread locking compounds, and waste CARC mixtures (or items, such as cleaning rags, contaminated with these substances) consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance. If further information is needed, please contact The Army Environmental Hotline at 1-800-872-3845 / OCONUS: 410-436-1244 or online at https://aec.army.mil/usaec/contactus.html. Accidental or intentional introduction of contaminants into the environment violates military, state, and federal regulations. Failure to comply may adversely affect the public or environment.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-244-7.

PREPARATION FOR STORAGE OR SHIPMENT

Air Force users refer to Special Package Instruction (SPI) 00-856-6885.

PREPARATION FOR STORAGE OR SHIPMENT - Continued

Marine Corps users refer to MCO P4450.7.

LIST OF ABBREVIATIONS/ACRONYMS

CAGEC	Commercial and Government Entity Code
CATM	Combat Arms Training and Maintenance
CLP	Cleaner, Lubricant, and Preservative
cm	centimeter/centimeters
CPC	Corrosion Prevention and Control
EIR	Equipment Improvement Recommendation
in.	inch/inches
LAW	Cleaner, Lubricant and Preservative
LSA	Cleaner, Lubricant and Preservative
MAC	Maintenance Allocation Chart
MC	Marine Corps
MM	Millimeter(s)
mm	Millimeter(s)
MTOE	Modified Table of Organization and Equipment
MWO	Maintenance Work Order
NSN	National Stock Number
PMCS	Preventive Maintenance Checks and Services
PQDR	Product Quality Deficiency Report
RBC	Rifle Bore Cleaner
ROD	Report of Discrepancy
RPSTL	Repair Parts And Special Tools List
SD	Solvent Cleaning Compound
SF	Standard Form
SFL	Solid Film Lubricant
SPI	Special Package Instructions
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
U/M	Unit of Measure
UOC	Usable On Code
WP	Work Package

QUALITY OF MATERIAL

Material used for replacement, repair, or modification must meet the requirements of this TM 9-1010-221-23&P. If quality of material requirements are not stated in this TM 9-1010-221-23&P, the material must meet the requirements of the drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment.

SAFETY, CARE, AND HANDLING

STORAGE OF GRENADE LAUNCHER M203

NOTE

Keep objects off stored sights and cushion sights between layers.

a. M12 Rack. Built for the M16 Series Rifle and the M203 grenade launcher. Store the launcher in the M12 rack with the sight in the 300 through 400 meter position so that when you close the locking bar of the rack, the bar misses the sight. The sight has to be above the 300 meter position to avoid damage from the bar of the rack. For the correct way of storing the launcher in the M12 rack, see the illustration below.

b. Modified M11 Rack. Stores most M203 grenade launchers with the sight set in the 175 through 200 meter setting. See the illustration below. Check the rack to see which setting is best. The 175 meter setting is good for some launchers; others need up to 200 meters. Because of the different positions of the bars, the sight on your launcher may not clear the bar at all. In this case, remove the sight and store it separately in the arms room.

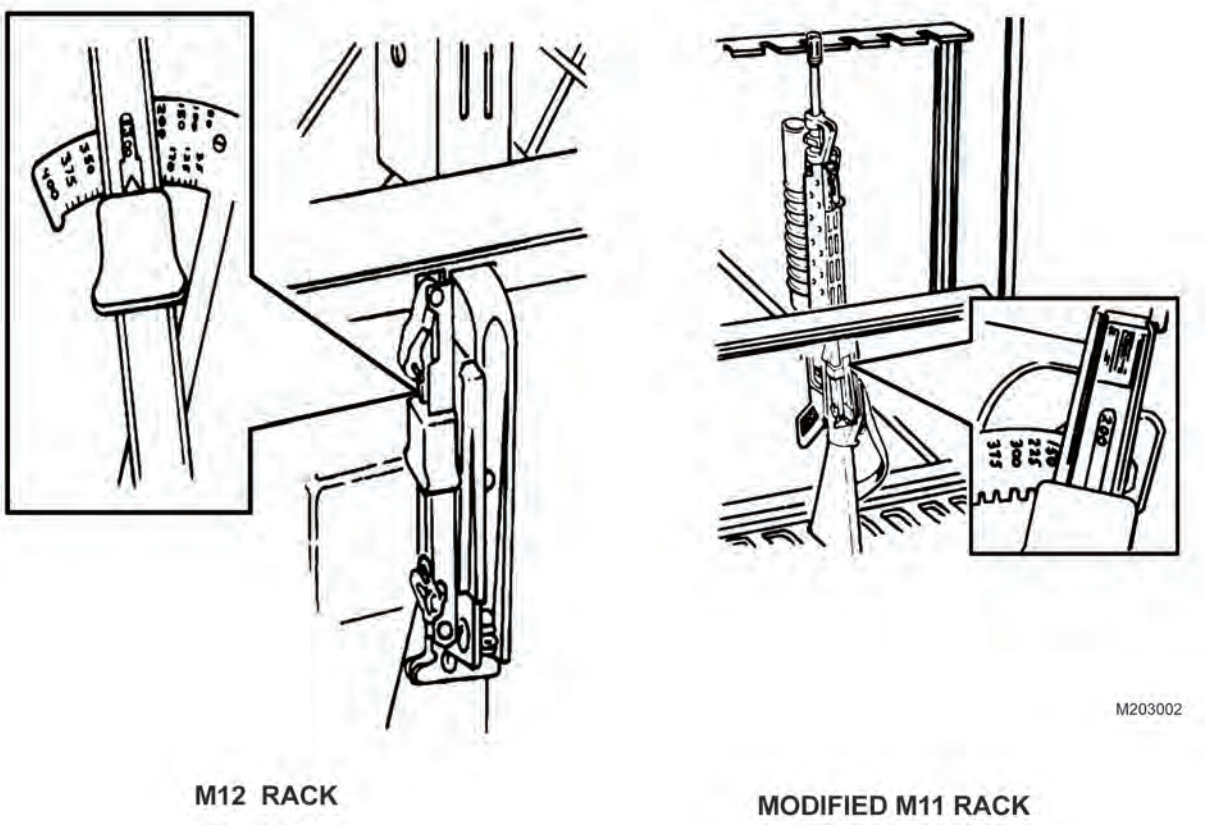


Figure 1. M12 Rack and M11 Modified Rack.

END OF WORK PACKAGE

FIELD MAINTENANCE
EQUIPMENT DESCRIPTION AND DATA

GENERAL

This Work Package (WP) covers equipment description and data for field maintenance. Refer to TM 9-1010-221-10, operator's manual, for lower level equipment description and data.

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

1. The grenade launcher is a breech-loading, pump-action, single-shot, manually-operated weapon.

2. It can fire a variety of 40 mm ammunition.

3. The secondary sear (WP 0030, Figure 8, Item 14) prevents accidental firing if the trigger is held down during cocking and loading operations. When the trigger is forward, the firing pin is held to the rear by the sear portion of the trigger, not the sear.

4. Two separate aiming systems are available to the operator.
    a. The folding leaf sight assembly on top of the hand guard assembly is for short-range firing.
    b. The quadrant sight assembly is mounted on the carrying handle of the M16 Series Rifles, the M4 Series Carbines, and is used for long-range firing.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

1. **LEAF SIGHT ASSEMBLY.** The folding leaf sight assembly, located on top of the hand guard assembly or upper rail, provides range selection from 50 to 250 meters in 50 meter increments.

2. **HAND GUARD ASSEMBLY.** The molded plastic hand guard assembly fits over the barrel of the M16 Series Rifle/M4 Carbine.

3. **QUADRANT SIGHT ASSEMBLY.** The quadrant sight assembly is attached to the carrying handle of the M16 Series Rifles and M4 Series Carbines. It provides range selection from 50 to 400 meters in 25 meter increments.

4. **RECEIVER ASSEMBLY.** The aluminum frame mounts to the underside of the M16 Series Rifles and M4 Series Carbines. The receiver assembly houses a firing mechanism and an ejection system, and supports the barrel assembly.

5. **BARREL ASSEMBLY.** The barrel assembly consists of a specially treated aluminum barrel and a plastic handgrip assembly. The 12 in. long barrel with six narrow lands is chambered for special 40 mm grenade launcher ammunition. The barrel assembly slides forward and backward under the receiver assembly in sliding tracks.

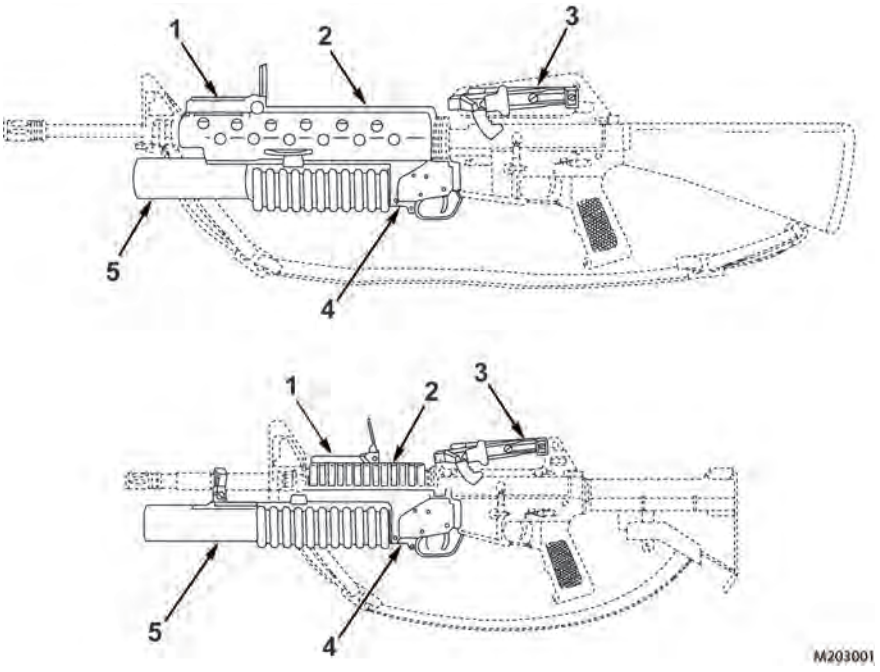


Figure 1. Location and Description of Major Components.

DIFFERENCE BETWEEN MODELS

The M203 attaches to the M16 Series Rifles and the M203A1 attaches to the M4 Series Carbines.

The M203A2 attaches to M16A4 Rifles and M4/M4A1 Carbines, not equipped with rail systems.

There are remaining old-style receivers which require the old-style trigger pin. All configurations require the new firing pin.

DIFFERENCE BETWEEN MODELS - Continued

There is a new front mounting bracket for the M203A1. The new mounting bracket assembly has a bracket clamp assembly and the tang has been removed.

There is a quick release bracket used to attach the M203A2. The quick release bracket is used as a semi-permanent installation to the M203A2.

EQUIPMENT DATA

Table 1. Equipment Data.

	U.S. CUSTOMARY	METRIC
Barrel length	12 inches	30.5 centimeters
Weight	3 pounds	1.4 kilograms
Rifling data: Length of rifling	10 inches	25.4 centimeters
Number of lands	6	

END OF WORK PACKAGE

FIELD MAINTENANCE
THEORY OF OPERATION

PRINCIPLES OF OPERATION

The M203 grenade launcher is lightweight and compact and must be attached to M16 Series Rifles. The M203A1 grenade launcher is lightweight and compact and must be attached to M4 Series Carbines.

1. Open the launcher, insert a round, and close the launcher.
2. Place on SAFE.
3. Place the launcher to your shoulder. Keep muzzle pointed at target and move the safety from the SAFE to the FIRE position.
4. Align the front and rear of the quadrant sight assembly with the target and squeeze the trigger.
5. Squeezing the trigger releases the firing pin and allows it to impact the primer on the round.
6. The primer ignites the propellant in the round.
7. Gas from the burning propellant pushes the projectile along the barrel of the launcher.
8. The rifling in the barrel causes the projectile to rotate, which provides stability during flight to the target.

END OF WORK PACKAGE

CHAPTER 2

TROUBLESHOOTING PROCEDURES

FIELD MAINTENANCE
FIELD MAINTENANCE TROUBLESHOOTING INDEX

GENERAL

1. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the 40 mm grenade launcher M203/M203A1/M203A2. Each malfunction for the individual part or assembly is followed by a list of tests or inspections which will help you to determine the corrective actions to take. Perform the tests/inspections and corrective actions in the order listed.
2. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, see individual repair sections for maintenance instructions on each major component.

TROUBLESHOOTING PROCEDURES

Refer to troubleshooting table for malfunctions, tests, and corrective actions. The symptom index is provided for a quick reference of the malfunctions covered in the table.

SYMPTOM INDEX

Malfunction/Symptom **Troubleshooting Procedure**

FIELD MAINTENANCE TROUBLESHOOTING PROCEDURES FOR M203/M203A1/M203A2 GRENADE LAUNCHER

END OF WORK PACKAGE

FIELD MAINTENANCE
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

Materials/Parts
- Cleaner, Lubricant, and Preservative (CLP) (WP 0041, Table 1, Item 8)
- Rifle Bore Cleaning Compound (RBC) (WP 0041, Table 1, Item 12)

References
- TM 9-1010-221-10

References (cont.)
- WP 0015
- WP 0016

TROUBLESHOOTING PROCEDURE

WARNING

Be sure to clear weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death.

SYMPTOM

Failure to fire.

MALFUNCTION

Dirt in firing pin recess (Figure 1, Item 1).

CORRECTIVE ACTION

Clean firing pin recess with Cleaner, Lubricant, and Preservative (CLP) or Rifle Bore Cleaning Compound (RBC).

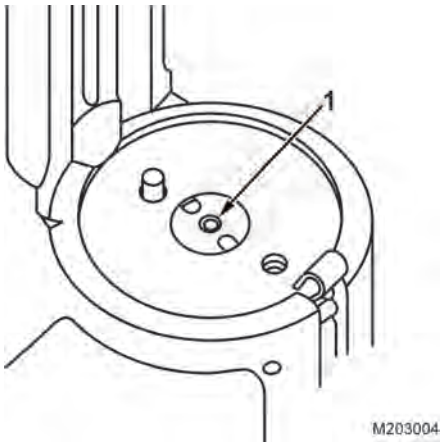


Figure 1. Firing Pin Recess.

MALFUNCTION

Dirt in cartridge locator slot (Figure 2, Item 1).

CORRECTIVE ACTION

Clean cartridge locator slot with CLP or RBC.

CORRECTIVE ACTION - Continued

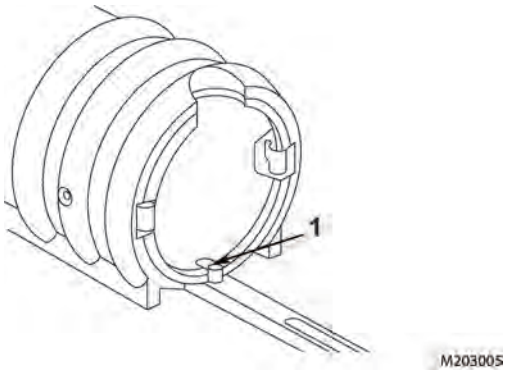


Figure 2. Cartridge Locator Slot.

MALFUNCTION

Water or oil in firing pin recess (Figure 3, Item 2).

CORRECTIVE ACTION

NOTE

Barrel must be closed to function the firing mechanism.

Point muzzle up and hand-function barrel and firing mechanism (Figure 3, Item 1).

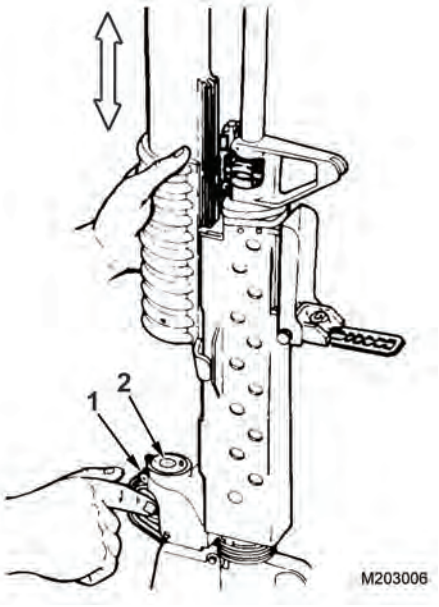


Figure 3. Water or Oil in Firing Recess.

MALFUNCTION

Broken or improperly assembled parts of firing mechanism (Figure 4, Item 1).

CORRECTIVE ACTION

Notify maintenance supervisor if firing mechanism is broken or improperly assembled.

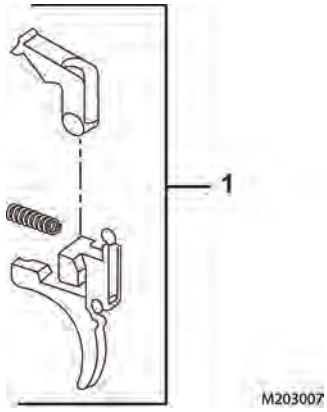


Figure 4. Firing Mechanism.

MALFUNCTION

Defective cartridge locator spring (Figure 5, Item 1).

CORRECTIVE ACTION

1. Use cleaning rod section to push cartridge locator toward muzzle, and then release.
2. Cartridge locator must move forward and back under spring pressure.
3. If cartridge locator does not function, notify maintenance supervisor.

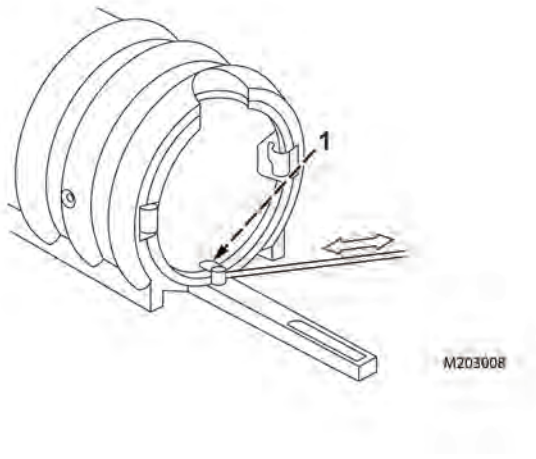


Figure 5. Cartridge Locator Spring.

MALFUNCTION

Broken firing pin.

CORRECTIVE ACTION

Replace broken firing pin (WP 0015).

MALFUNCTION

Weak or broken compression helical spring.

CORRECTIVE ACTION

Replace weak or broken compression helical spring (WP 0015).

MALFUNCTION

Burred firing pin or trigger notch.

CORRECTIVE ACTION

Remove burrs on firing pin or trigger notch.

SYMPTOM

Failure to cock.

MALFUNCTION

Improper installation of follower guide assembly.

CORRECTIVE ACTION

Reassemble (WP 0015).

MALFUNCTION

Worn or broken sear.

CORRECTIVE ACTION

Replace worn or broken sear (WP 0015).

MALFUNCTION

Cocking lever is incorrectly assembled.

CORRECTIVE ACTION

Reassemble cocking lever (WP 0015).

MALFUNCTION

Broken or bent spring pin.

CORRECTIVE ACTION

Replace broken or bent spring pin (WP 0015).

MALFUNCTION

Improper assembly of follower guide assembly.

CORRECTIVE ACTION

Reinstall follower guide assembly (WP 0015).

SYMPTOM

Failure to close or latch.

MALFUNCTION

Improper installation of follower guide assembly.

CORRECTIVE ACTION

Reassemble (WP 0015).

MALFUNCTION

Worn barrel extension or barrel assembly.

CORRECTIVE ACTION

Replace worn barrel extension (WP 0015).

SYMPTOM

Failure to extract.

MALFUNCTION

Broken or missing cartridge extractor (Figure 6, Item 1), spring pin (Figure 6, Item 3), or spring (Figure 6, Item 2).

CORRECTIVE ACTION

If cartridge extractor, spring pin, or spring is broken or missing, notify maintenance supervisor.

CORRECTIVE ACTION - Continued

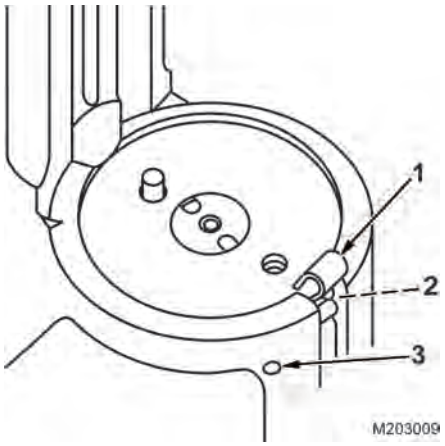


Figure 6. Cartridge Extractor.

MALFUNCTION

Residue buildup in barrel chamber area.

CORRECTIVE ACTION

Clean and lubricate barrel and chamber area.

MALFUNCTION

Broken cartridge extractor or compression helical spring.

CORRECTIVE ACTION

Replace broken cartridge extractor or compression helical spring (WP 0015).

SYMPTOM

Failure to lock.

MALFUNCTION

Dirty follower guide assembly or receiver cavity.

CORRECTIVE ACTION

1. Remove back plate and follower guide assembly (WP 0015).
2. Clean and lubricate back plate and follower guide assembly (WP 0015).
3. Clean and lubricate trigger housing (WP 0015).

SYMPTOM

Failure of safety.

MALFUNCTION

Worn coil compression helical spring.

CORRECTIVE ACTION

Replace worn coil compression helical spring (WP 0015).

MALFUNCTION

Broken grenade launcher safety.

CORRECTIVE ACTION

Replace broken grenade launcher safety (WP 0015).

MALFUNCTION

Broken or missing spring pin.

CORRECTIVE ACTION

Replace broken or missing spring pin (WP 0015).

SYMPTOM

Failure of the leaf sight assembly to remain at selected range.

MALFUNCTION

Loose machine screw (Figure 7, Item 2) on front folding leaf sight (Figure 7, Item 1).

CORRECTIVE ACTION

Tighten machine screw.

CORRECTIVE ACTION - Continued

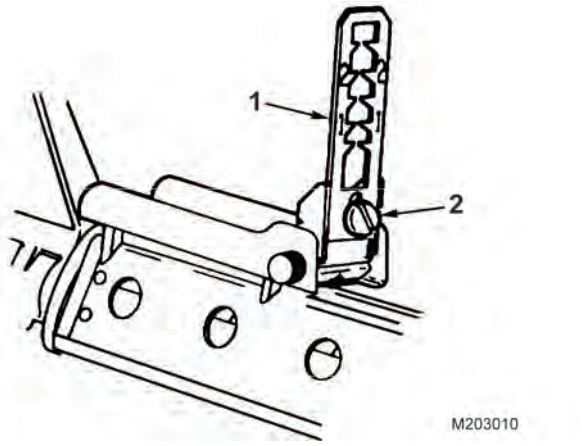


Figure 7. Folding Leaf Sight.

MALFUNCTION

Loose machine screws (Figure 8, Item 1) on sight leaf base (Figure 8, Item 2).

CORRECTIVE ACTION

Tighten machine screws.

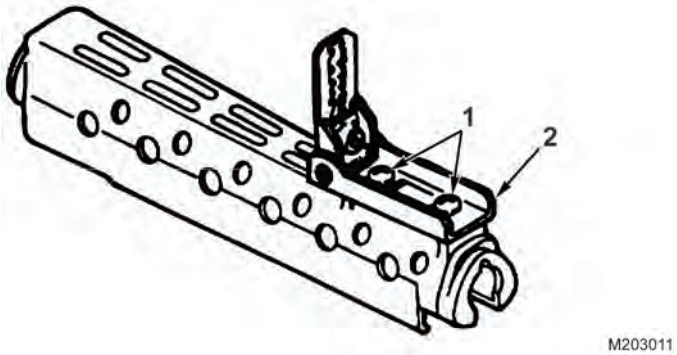


Figure 8. Leaf Sight Base.

SYMPTOM

Failure of quadrant sight assembly to stay in selected position.

MALFUNCTION

Quadrant sight assembly has damaged, missing, or dirty parts.

CORRECTIVE ACTION

Repair (WP 0016).

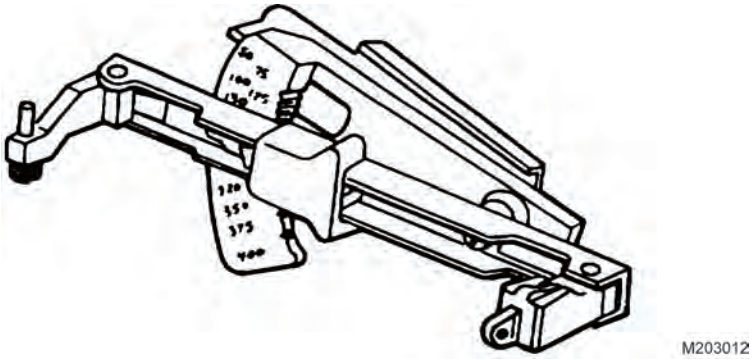


Figure 9. Quadrant Sight Assembly.

SYMPTOM

Failure to eject.

MALFUNCTION

Worn, broken, or missing cartridge ejector, spring, or retainer.

CORRECTIVE ACTION

Replace worn, broken, or missing parts (WP 0015).

END OF WORK PACKAGE

CHAPTER 3

FIELD PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

FIELD MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

This Work Package (WP) contains the procedures and instructions necessary to perform field Preventive Maintenance Checks and Services (PMCS). These services are to be performed by field maintenance personnel with the assistance of the operator where practical

The PMCS procedures are contained in the table in WP 0007. They are arranged in logical sequence requiring a minimum amount of time and motion on the part of the persons performing them and are arranged so that there will be a minimum interference between persons performing checks simultaneously on the same end item.

WARNING

Clear the weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death.

NOTE

- All active Army M203/M203A1/M203A2 grenade launchers must be inspected and gauged at least once annually for safety.
- All Army Reserve and National Guard M203/M203A1/M203A2 grenade launchers must be inspected and gauged at least once every two years, after the initial inspection/ gauging procedures have been accomplished. The initial gauging procedures for Active Army, Army Reserve, and Army National Guard are required one year from receipt of weapons. This two-year interval may be maintained unless PMCS or other physical evidence indicates that an individual unit's M203/M203A1/M203A2 grenade launchers require inspection at a more frequent interval. If it is determined that a yearly inspection is necessary for an individual unit, only that unit will be affected. This will not affect other units in regard to the interval of inspection.

EXPLANATION OF COLUMNS

ITEM NO. column. This column specifies the logical order of performance. Numbers in this column are for reference. When completing DA Form 2404 Equipment Inspection and Maintenance Worksheet, include the item number for the check/service indicating a fault.

INTERVAL column. This column gives the designated interval when each check is to be performed.

EXPLANATION OF COLUMNS - Continued

ITEM TO BE CHECKED OR SERVICED column. This column lists the items to be checked or serviced.

PROCEDURE column. This column contains a brief description of the procedure by which the check is to be performed. It contains all the information required to accomplish the checks and services.

EQUIPMENT NOT READY/AVAILABLE IF column. This column lists information which tells you what faults will keep your equipment from being capable of performing its primary mission. If check and service procedures show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

LUBRICATION INSTRUCTIONS

Wherever the term "Cleaner, Lubricant, and Preservative (CLP)" or the words "Lubricant," "Lube," or "LAW" are cited in this TM, it is to be interpreted to mean CLP, LSA, or LAW can be utilized as applicable. The following constraints must be adhered to:

1. Under all but the coldest arctic conditions, LSA (WP 0041, Table 1, Item 23) or CLP (WP 0041, Table 1, Item 8) are the lubricants to use on your weapon. Either may be used at -10°F (-23°C) and above. However, do not use both on the same weapon at the same time.
2. LAW (WP 0041, Table 1, Item 22) is the lubricant to use during cold arctic conditions, +10°F (12°C) and below.
3. Any of the lubricants may be used from -10°F (-23°C) to +10°F (12°C).

NOTE

Do not mix lubricants on the same weapon.

4. The weapon must be thoroughly cleaned during change from one lubricant to another. Solvent Cleaning Compound (SD)(WP 0041, Table 1, Item 15) is recommended for cleaning during change from one lubricant to another.
5. Rifle Bore Cleaning Compound (RBC)(WP 0041, Table 1, Item 12) may be used to remove carbon buildup in the bore and other portions of the weapon.

NOTE

Used, waste, and/or spilled lubricants as well as items contaminated by lubricants (such as cleaning rags) must be disposed of properly. See Hazardous Waste Disposal Information on page 0001-2 for more information.

CORROSION PREVENTION AND CONTROL (CPC)

Refer to WP 0001 for information on Corrosion Prevention and Control (CPC).

END OF WORK PACKAGE

FIELD MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Materials/Parts
Solvent Cleaning Compound
(WP 0041, Table 1, Item 15)
Solid Film Lubricant (SFL)
(WP 0041, Table 1, Item 21)

References (cont.)
WP 0010
WP 0012
WP 0015
WP 0016

References
WP 0001

Table 1. Preventive Maintenance Checks and Services for 40MM Grenade Launcher, M203/M203A1/ M203A2.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Quarterly	Grenade launcher with or without M16 Series Rifles or M4 Series Carbines	**WARNING**  Be sure to clear weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death. a. Check weapon for cleanliness, sufficient lubrication, and proper assembly.	Weapon not properly assembled.
			WARNING  The old firing pin, Part Number 8448327 must be replaced by new firing pin Part Number 12002970. Failure to comply may result in damage to equipment and/or personnel injury or death. b. Check for any missing or damaged parts, and for old style firing pin, Part Number (P/N) 8448327. Whenever the old pin is identified, notify maintenance supervisor. Perform lubrication procedures (WP 0015).	Parts missing, damaged, or old-style firing pin is installed.

Table 1. Preventive Maintenance Checks and Services for 40MM Grenade Launcher, M203/M203A1/ M203A2 - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			NOTE • Solid Film Lubricant (SFL) is the authorized touchup for the M203/ M203A1/M203A2 Grenade Launcher and may be used on up to one-third of the exterior finish of the weapon. • FOR CONUS USE ONLY: SFL may be used as a touchup without limitation on the receiver assembly. This is to say that units which DO NOT fall under the category of Divisional Combat Units or Rapid-Deployment-type Units may have up to 100 percent of the exterior surface of the receiver assembly protected with SFL. Prior to application of SFL, the surface must be thoroughly cleaned and inspected for corrosion and/or damage. If corroded or damaged, the part must be repaired or replaced prior to application of SFL. Continued use would result in a large light-reflecting surface and accelerated deterioration of the unprotected surface. Therefore, Divisional Combat Units and units which fall under the definition of Rapid Deployment type must adhere to the limitation of NOT over one-third of their exterior surface covered by SFL.	
			c. Check grenade launcher for dents and worn/ shiny surfaces.	Grenade launcher is dented, or has worn/shiny surfaces.
			d. Check for positive retention to rifle/carbine, up-and-down, side-to-side movement.	Any up-and-down or side-to-side movement of more than 1/8 in. (0.318 cm) in either direction.
			e. M203A2 check for positive retention of quick-release bracket spacer plate (WP 0012).	Spacer missing or not positively retained.

Table 1. Preventive Maintenance Checks and Services for 40MM Grenade Launcher, M203/M203A1/ M203A2 - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			WARNING  Be sure to clear weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death. f. Check grenade launcher for proper function. Ensure the grenade launcher is cleared. Cock the launcher and squeeze the trigger. Firing pin should release. Hold trigger to rear and cock the launcher. Release trigger and listen for an audible click, then squeeze the trigger. Firing pin should release. If firing pin releases before squeezing the trigger, notify maintenance supervisor. g. Check locking wire (WP 0010). h. Thoroughly clean areas that are to be touched up, using solvent cleaning compound. Touch up shiny exterior surfaces with SFL.	Grenade launcher does not function properly.
2	Quarterly	Hand guard assembly and leaf sight assembly	a. Check hand guard assembly for cracks. b. Check leaf sight assembly for bent, broken, or missing parts. Check that markings are legible. Check screws for tightness. If damaged, notify maintenance supervisor.	Cracks exceed 1 in. (2.54 cm) and/or if chips are on back lip of hand guard assembly.
3	Quarterly	Barrel assembly	a. Visually inspect barrel assembly for bulges, dents, or cracks. Barrel assembly should be cylindrical in shape. b. Check handgrip assembly for damage and positive retention to barrel. If damaged or no positive retention, notify maintenance supervisor.	Barrel has bulges, dents, or cracks or is oval in shape. Handgrip assembly is damaged or is not positively retained on barrel.

Table 1. Preventive Maintenance Checks and Services for 40MM Grenade Launcher, M203/M203A1/ M203A2 - Continued.

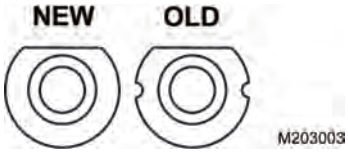
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			c. Check the barrel extension for tightness to the barrel. This will be accomplished by moving the barrel extension up and down, side to side, and front to rear with the thumb and index finger, while visually examining it. If any play/movement occurs, notify maintenance supervisor.	Barrel extension is loose, bent, or cracked.
			d. Check for defective cartridge locator spring. Push the cartridge locator toward the barrel, and then release. The cartridge locator must move forward and back under spring pressure.	Cartridge locator does not move under spring pressure.
4	Quarterly	Receiver assembly	 **WARNING**  The old firing pin, Part Number 8448327 must be replaced by new firing pin Part Number 12002970. Failure to comply may result in damage to equipment and/or personnel injury or death. **NOTE** • If M203/M203A1 Grenade Launcher RECEIVER ASSEMBLY is missing one-third or more of its exterior protective finish, resulting in an unprotected/light-reflecting surface, it is a candidate for overhaul. This missing finish will be considered a shortcoming. This shortcoming requires action to obtain a replacement weapon. Once a replacement has been received, evacuate the original weapon to depot for overhaul.	

Table 1. Preventive Maintenance Checks and Services for 40MM Grenade Launcher, M203/M203A1/ M203A2 - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			• Once the missing exterior protective finish of the receiver assembly has exceeded one-third of its total surface, the probability of reclaiming the receiver assembly during overhaul diminishes rapidly. In order to extend the life of the receiver assembly, which is a serial-numbered item, it is necessary to evacuate the weapon to depot once the missing finish reaches one-third of the total surface of the receiver assembly.	
			a. Inspect for burrs, nicks, wear, or other damage.	Burred, nicked, worn, or damaged.
			b. Inspect for missing finish on weapon. Apply SFL to shiny surfaces.	
			c. Check self-locking screw in back plate for tightness (WP 0015).	Self-locking screw is not tight.
			d. Check the breech insert visually. It should not be above the surface of the breech face. Notify maintenance supervisor.	Breech insert protrudes above the breech face.
5	Quarterly	Barrel stop	With barrel assembly installed on the receiver assembly, move barrel assembly forward to barrel stop. Barrel stop must prevent the barrel assembly from being removed from the tracks in the receiver assembly. Verify barrel stop pinhole is staked on both sides.	Barrel stop does not prevent the barrel assembly from being removed from the receiver assembly.
6	Quarterly	Barrel latch	Pull barrel assembly rearward to close. Barrel latch must lock the barrel assembly fully closed.	Barrel latch does not lock barrel assembly fully closed.
7	Quarterly	Barrel latch spring	Check bottom of receiver. If barrel latch spring is visible, evacuate for turn in and replacement.	Barrel latch spring is broken or missing.
8	Quarterly	Cartridge extractor	Check for broken or missing cartridge extractor, spring pin, or spring.	Cartridge extractor, spring pin, or spring is broken or missing.
9	Quarterly	Cartridge ejector	Visually inspect cartridge ejector for cracks. Push cartridge ejector into breech. Cartridge ejector should move and return under spring pressure.	Cartridge ejector is cracked or not moving and returning under spring pressure.

Table 1. Preventive Maintenance Checks and Services for 40MM Grenade Launcher, M203/M203A1/ M203A2 - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
10	Quarterly	Quadrant sight assembly	a. Check for cracked, or missing teeth. If damaged, repair or replace the quadrant assembly (WP 0016). b. In order to prevent the quadrant sight assembly from being damaged, refer to Storage of Grenade Launcher (WP 0001).	
11	Quarterly	Annual safety and serviceability inspection and gauging	Check to ensure annual safety and serviceability inspection and gauging has been done and that the next gauging and inspection is scheduled. If annual gauging has not been performed within the last year, notify Field Maintenance.	Annual gauging has not been performed.

PMCS Mandatory Replacement Parts List

There are no replacement parts required for these PMCS procedures.

Lubrication Instructions

Refer to PMCS Introduction (WP 0006) for lubrication instructions.

END OF TASK

END OF WORK PACKAGE

CHAPTER 4

FIELD MAINTENANCE INSTRUCTIONS

FIELD MAINTENANCE
SERVICE UPON RECEIPT

INITIAL SETUP:

References
SF 364
SF 368
DTR 4500.9-R

References (cont.)
PAM 750-8
DA PAM 25-30

SERVICE UPON RECEIPT — 40MM GRENADE LAUNCHER M203/M203A1

NOTE

The initial gauging procedures for Active Army, Army Reserve, and Army National Guard are required one year from receipt of the weapons.

Table 1. Service Upon Receipt — 40MM GRENADE LAUNCHER M203/M203A1/M203A1.

LOCATION	ITEM	ACTION	REMARKS
Grenade Launcher	Grenade Launcher	1. Remove grenade launcher and components from packaging.	The grenade launcher, swivel mount, hand guard assembly, quadrant sight assembly, and mounting hardware are packaged in a protective wrapping and shipped as a unit, two to a carton.
		2. Remove protective wrappings.	
		3. Inspect the equipment for damage incurred during shipment.	If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy (ROD).
		4. Check the equipment against the packing slip to see if the shipment is complete.	Report all discrepancies in accordance with the instructions of PAM 750-8. Air Force users submit MDR and SF 368, Product Quality Deficiency Report (PQDR) to WR-ALC/LZBS, Robins

Table 1. Service Upon Receipt — 40MM GRENADE LAUNCHER M203/M203A1/M203A1 - Continued.

LOCATION	ITEM	ACTION	REMARKS
			AFB, GA 31098-5609. Marine Corps users report discrepancies in accordance with DTR 4500.9-R, Transportation and Travel Record of Transportation Discrepancies. Navy users submit PQDR to: Commander, Code 4081 Bldg. 2521, NAVSURF WARCENDIV, 300 Hwy 361, Crane, IN 47522-5001.
		5. Check to see whether equipment has been modified.	Check DA PAM 25-30 for current MWOs.
		6. Send M203 grenade launcher and 5.56 mm M16 Series Rifles to Field Maintenance for initial installation.	
		7. Send M203A1 grenade launcher and 5.56 mm M4 Series Carbines to Field Maintenance for initial installation.	

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
PREEMBARKATION INSPECTION OF MATERIEL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

INITIAL SETUP:

References
WP 0014
WP 0015

General

This inspection is conducted on materiel in alerted units scheduled for overseas duty, to ensure that such materiel will not become unserviceable in a relatively short time. It prescribes a higher percentage of remaining usable life in serviceable materiel to meet a specific need beyond minimum serviceability.

Preinspection Points

WARNING

Be sure to clear weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death.

1. Before inspection, clean the grenade launcher thoroughly of all grease, dirt, or other foreign matter that might keep it from functioning properly or get in the way of gages and tools during inspection.
2. Grenade launchers must be free of burrs, rust, or corrosion on functional surfaces.
3. Parts must not be cracked, bent, distorted, or damaged and must not be excessively worn or loose.
4. Minor defects in metal components do not normally affect their acceptability. For example, scratches and tool marks are ordinarily of no importance.
5. Inspect finish of metal surfaces. Satisfactory metal surfaces for weapons range from black to light gray. A shiny metal surface is objectionable only when it is capable of reflecting light. No weapon will be rejected unless exterior parts have a shine.

END OF TASK

Inspection Points

1. Springs must not be distorted or broken. Springs must have enough tension to perform their function.
2. Inspect the barrel for the following:
    a. Barrel must be clean and free of corrosion caused by moisture and powder fouling.
    b. Barrel must pass bore constriction check (WP 0014).
    c. Pits in the chamber are allowable if they do not get in the way of extraction.
    d. Scattered or uniformly fine pits, or fine pits in a densely pitted area, are allowable.
    e. Tool marks are acceptable, regardless of length. They may appear as lines running along the grooves or spiraling across the tops of lands.
3. The sear and cocking notches must be in good condition. Chipped engaging corners will be cause for rejection. Slight wear on functional surfaces, including engaging corners, shall be acceptable, providing the minimum trigger pull requirements are met.

4. Chips, flat spots, or bent striker points on firing pin will be cause for rejection.
5. The cartridge-engaging surfaces on extractors must not be chipped or deformed.
6. Safety must positively position in both SAFE and FIRE positions. When in the SAFE position, the weapon must not fire when the trigger is squeezed; when in the FIRE position, the weapon must fire when the trigger is squeezed.
7. Each weapon must be hand-functioned to check for unusual binding, positive cocking action, and general operation. Dummy ammunition can be used to be sure of positive chambering, extraction, and ejection operation.
8. Rivets and spring pins must be tight.
9. All markings must be legible.

END OF TASK

Specific Standards

Table 1. Standards for Preembarkation Inspection of 40MM Grenade Launcher M203 in Units Alerted for Overseas Movement.

Item	Standard
General	Clear grenade launcher of any ammunition and inspect in accordance with the General, Preinspection Points, and Inspection Points in this Work Package (WP). Grenade launcher must pass all testing in WP 0015.
Hand guard assembly	Hand guard assembly must not be damaged so as to prevent positive retention to M16 Series Rifles.
Barrel assembly	Origin of rifling must not advance to a point more than 3.9 in. (9.91 cm) from breech end of barrel assembly. Barrel assembly must pass bore constriction check (WP 0014). Cartridge locator must function properly under spring tension.
Receiver assembly	Trigger and sear must not have rounded or damaged surfaces.
Trigger pull	Minimum 5 lbs (2.27 kg). Maximum 11 lbs (4.99 kg). Use trigger pull measuring fixture (WP 0015).
Firing pin protrusion	Must pass firing pin protrusion test (WP 0015). Grenade launcher must have latest configuration firing pin (P/N 12002970) (WP 0015).
M203 grenade launcher	Perform function checks in accordance with operator's manual.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
40MM GRENADE LAUNCHER M203/M203A1 MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only)
(WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only)
(WP 0040, Table 2, Item 6)

Materials/Parts
Rivet (TM 9-1005-249-23&P,
TM 9-1005-319-23&P, or
TM 05538/10012-IN (USMC only)) Qty: 1
Solid Film Lubricant (SFL)
(WP 0041, Table 1, Item 21)
Sealing Compound (WP 0041, Table 1, Item 29)
Wire (WP 0041, Table 1, Item 30)

Personnel Required
(2)

References
TM 05538C-10/1A (USMC only)
TM 05538/10012-IN (USMC only)
TM 9-1005-249-10
TM 9-1005-249-23&P
TM 9-1005-319-23&P
TM 9-1010-221-10
WP 0014
WP 0015
WP 0016
WP 0017

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE

WARNING

Be sure to clear weapon before starting an inspection. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death.

NOTE

- The M203 must be reinstalled on the same rifle from which it was removed.
- The M203A1 may be switched to a different carbine.
- When mounting an M203A1 grenade launcher, ensure side sling swivel is mounted on the right side of the carbine. If not, remove slide sling swivel (TM 9-1005-319-23&P).
- **AIR FORCE ONLY:** The grenade launcher should be installed on the same rifle from which it was removed. However, there may be situations where this may not be possible.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

1. Use a screwdriver to remove the quadrant sight assembly (Figure 1, Item 2) (if used) by loosening the mounting bolt (Figure 1, Item 1) on the right side of the weapon.

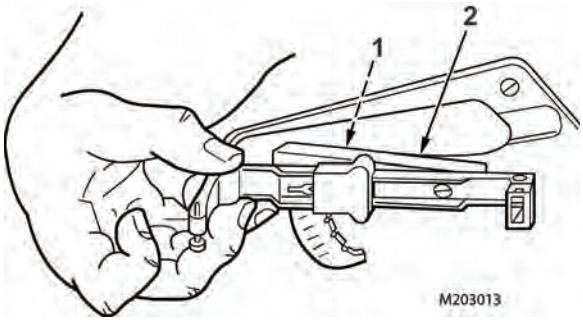


Figure 1. Quadrant Sight Assembly Removal.

2. Remove sling (Figure 2, Item 2) from front swivel (Figure 2, Item 1).

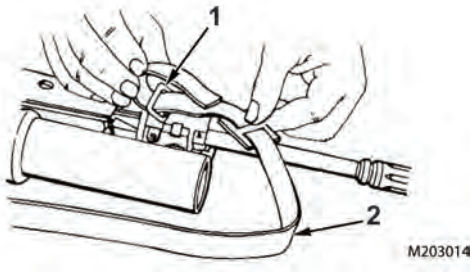


Figure 2. Sling Removal.

CAUTION

Do not use a screwdriver or any other tool when removing the hand guard assembly. Failure to comply may result in damage to the hand guard assembly and/or slip ring.

NOTE

If you have difficulty removing the hand guard assembly, use the buddy system (step 4).

3. Pull back slip ring (Figure 3, Item 2). Lift up on hand guard assembly (Figure 3, Item 1) and pull to rear to remove.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

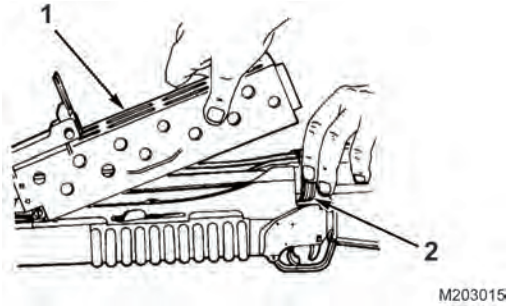


Figure 3. Hand Guard Assembly Removal.

4. Stand the weapon on the buttstock (Figure 4, Item 3). Grip the stock with one hand and the lower end of hand guard assembly (Figure 4, Item 2) with the other hand. Have your buddy press down with both hands on the slip ring (Figure 4, Item 1). Pull hand guard assembly free.

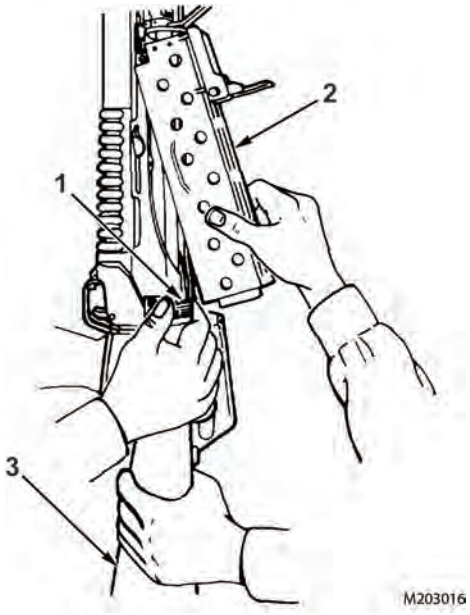


Figure 4. Hand Guard Assembly Removal (With Assistance).

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

5. Press barrel latch (Figure 5, Item 2) and move barrel assembly (Figure 5, Item 3) forward to barrel stop (Figure 5, Item 1).

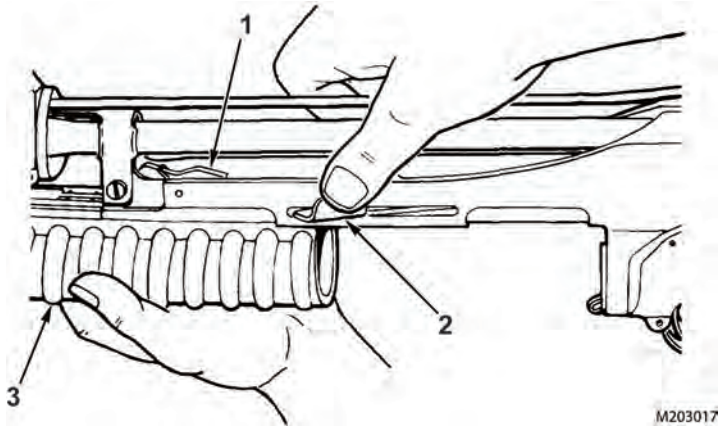


Figure 5. Attaching Barrel Assembly to Barrel Stop.

6. Use a screwdriver to press barrel stop (Figure 6, Item 1) and slide barrel assembly (Figure 6, Item 3) from receiver assembly (Figure 6, Item 2).

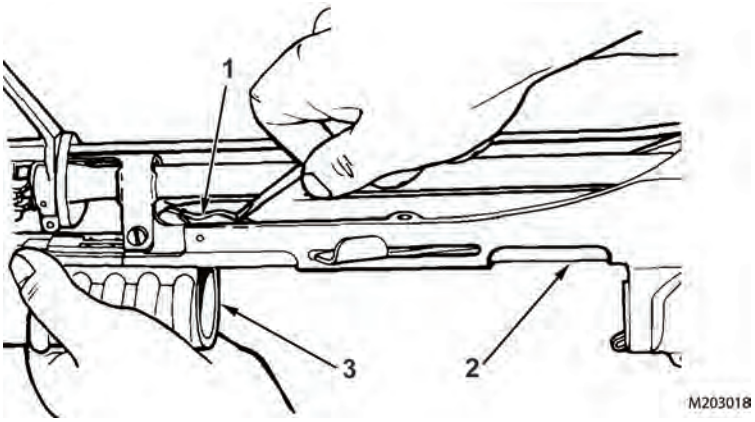


Figure 6. Barrel Assembly Removal.

NOTE

Perform steps 7–11 on M16 Series Rifle. For M4 Carbine Series, skip to step 12.

7. Cut wire (Figure 7, Item 1) at head of two machine screws (Figure 7, Item 2) at points shown. Use pliers to remove locking wire. Discard wire.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

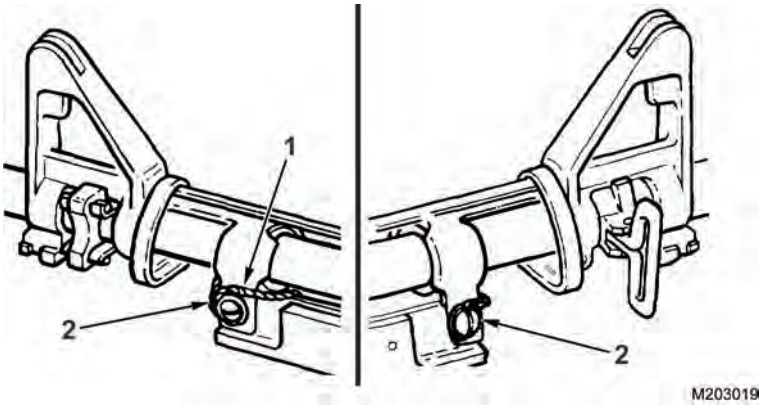


Figure 7. M16 Wire Removal.

8. Remove two machine screws (Figure 8, Item 1) from the mounting bracket (Figure 8, Item 2).

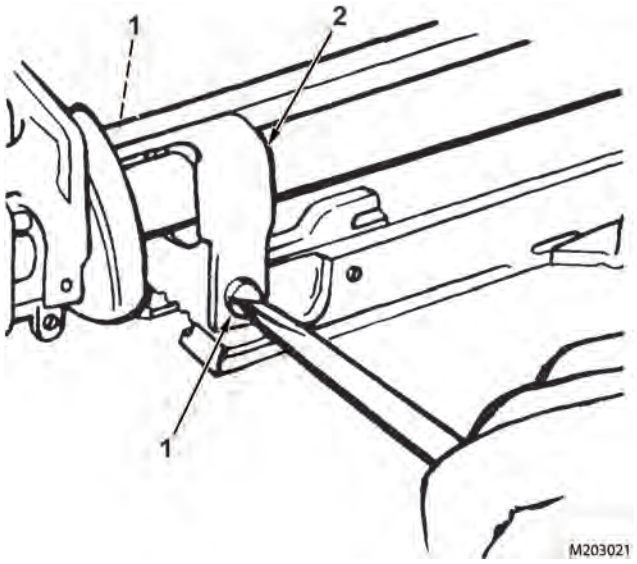


Figure 8. Machine Screw Removal.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

NOTE

A bushing half may fall out.

9. Pull front of receiver assembly (Figure 9, Item 1) away from rifle. Then lift it up and out of the rifle slip ring (Figure 9, Item 2).

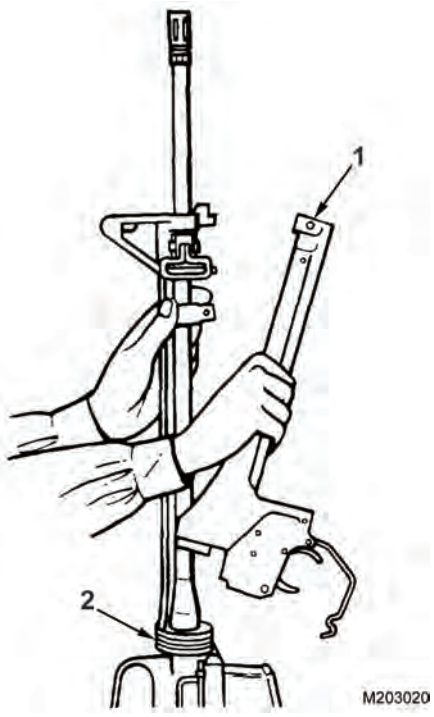


Figure 9. Receiver Assembly Removal.

NOTE

- Mounting bracket is hand fit. Be sure to reinstall on the same weapon from which it was removed.
- If the grenade launcher is to be mounted on a different rifle, a new mounting bracket may be required.

10. Remove mounting bracket (Figure 10, Item 1) from the rifle/carbine (Figure 10, Item 3).
11. Remove two bushing halves (Figure 10, Item 2) from the mounting bracket (Figure 10, Item 1).

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

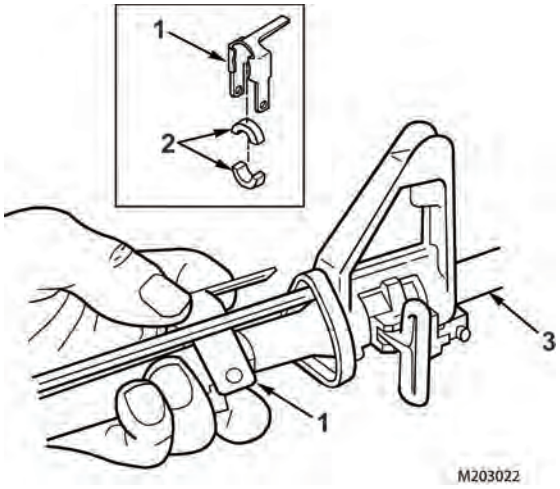


Figure 10. Mounting Bracket Removal.

NOTE

Perform steps 12–16 on M203A1/M4 Carbine only.

12. Cut wire (Figure 11, Item 3) at head of two socket head screws (Figure 11, Item 1). Use pliers to remove wire. Discard wire.

13. Cut wire (Figure 11, Item 3) on bracket clamp assembly screw (Figure 11, Item 2) and remove wire. Loosen bracket clamp assembly screw and remove bracket clamp assembly. Discard wire.

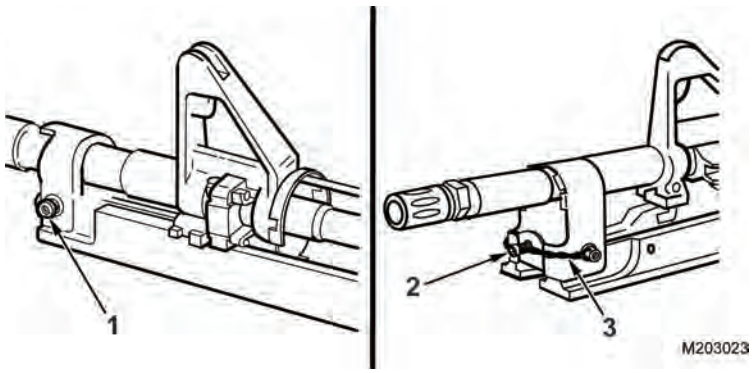


Figure 11. M4 Carbine Wire Removal.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

14. Remove two socket head screws (Figure 12, Item 1) and washers (Figure 12, Item 2).

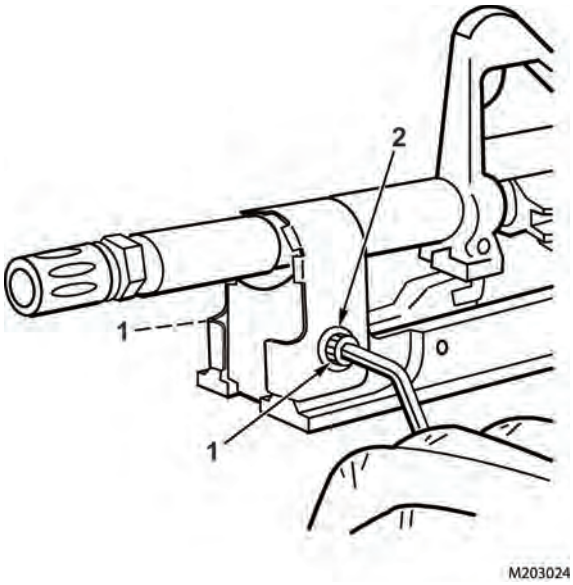


Figure 12. M4 Carbine Socket Head Screws and Washers Removal.

15. Pull front of receiver assembly (Figure 13, Item 1) away from carbine (Figure 13, Item 3). Then lift it up and out of the carbine slip ring (Figure 13, Item 2).

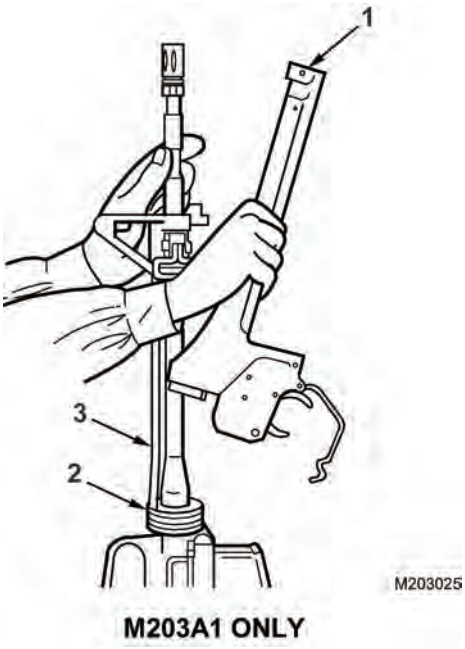


Figure 13. M4 Carbine Receiver Assembly Removal.

16. Remove mounting bracket (Figure 14, Item 1) and two bushing halves (Figure 14, Item 2).

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

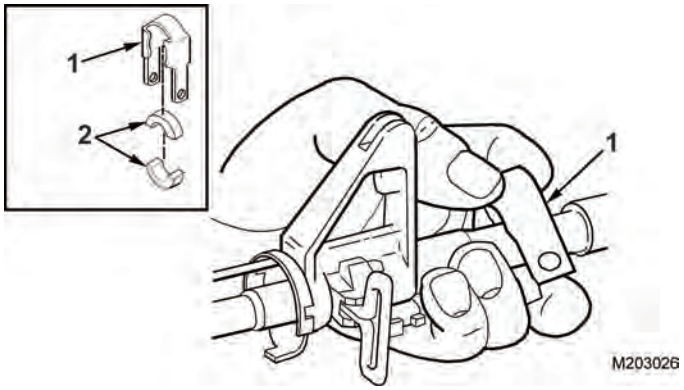


Figure 14. M4 Carbine Mounting Bracket Removal.

NOTE

- Perform steps 17–24 if weapon is being returned to the M16 Series configuration.
- Perform steps 22–24 if weapon is being returned to the M4 Series configuration.

17. Remove two spring pins (Figure 15, Item 1) from the swivel mount (Figure 15, Item 2).

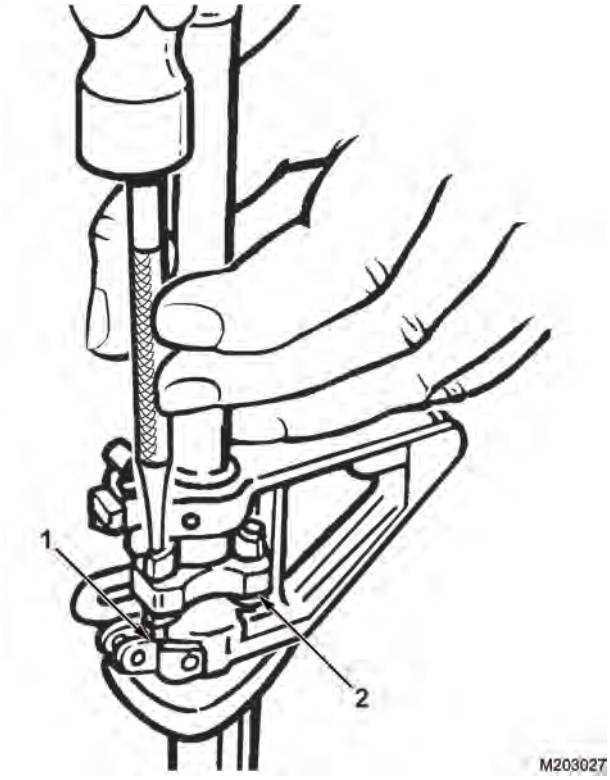


Figure 15. Spring Pin Removal.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

18. Lift swivel locking bar (Figure 16, Item 1) up and out of swivel mount (Figure 16, Item 2).

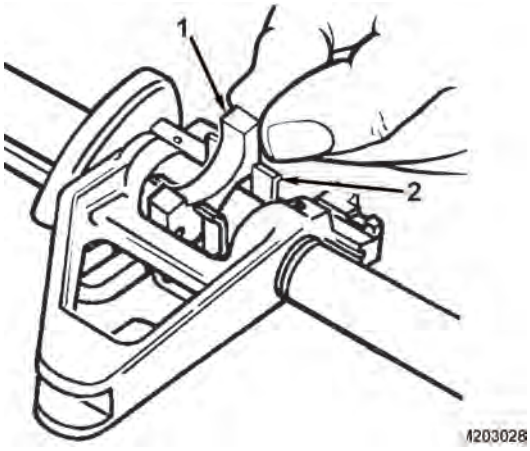


Figure 16. Swivel Locking Bar Removal.

19. Remove swivel mount (Figure 17, Item 1) from barrel (Figure 17, Item 2).

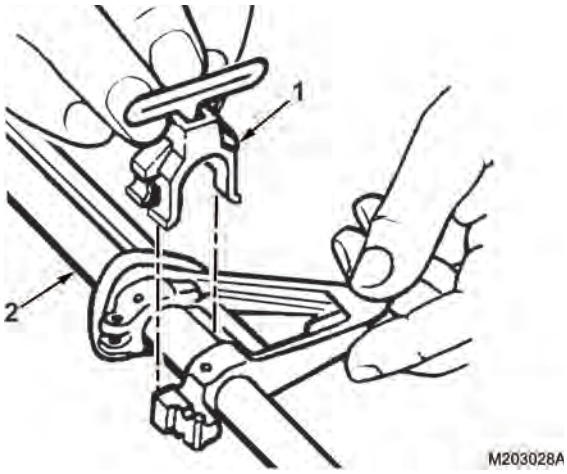


Figure 17. Swivel Mount Removal.

20. Remove rivet (Figure 18, Item 3) from swivel mount (Figure 18, Item 1). Separate front swivel (Figure 18, Item 2) from swivel mount. Discard rivet.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

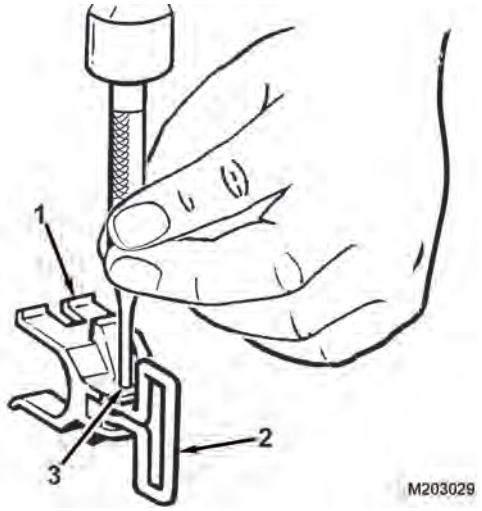


Figure 18. Swivel Mount Rivet Removal.

NOTE

Requisition new rivet from TM 9-1005-249-23&P, TM 9-1005-319-23&P, or TM 05538/10012-IN (USMC only).

21. Install front swivel (Figure 19, Item 1) with new rivet (Figure 19, Item 3) on bottom of front sight (Figure 19, Item 2). Flare rivet with punch and hammer.

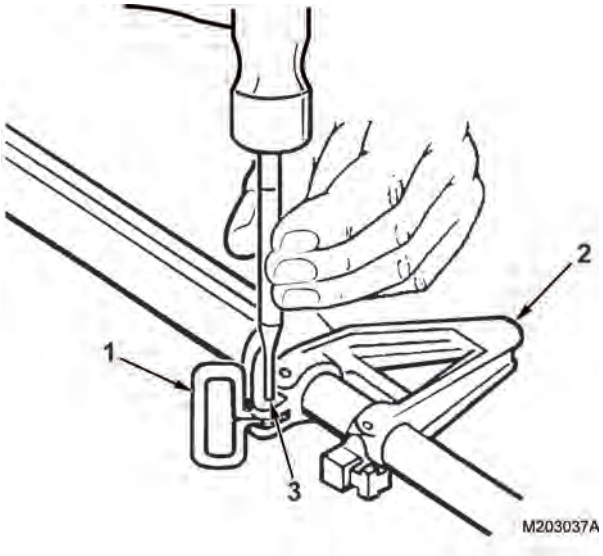


Figure 19. Swivel Mount Rivet Installation.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

NOTE

Refer to operator manuals for the buddy system procedure on installing hand guards.

22. Install hand guard (Figure 20, Item 1) in tube cap (Figure 20, Item 2). Push down on slip ring (Figure 20, Item 3). Push hand guard in place and release slip ring.
23. Install other hand guard (Figure 20, Item 5) in tube cap (Figure 20, Item 4). Push down on slip ring (Figure 20, Item 3). Push hand guard in place and release slip ring.

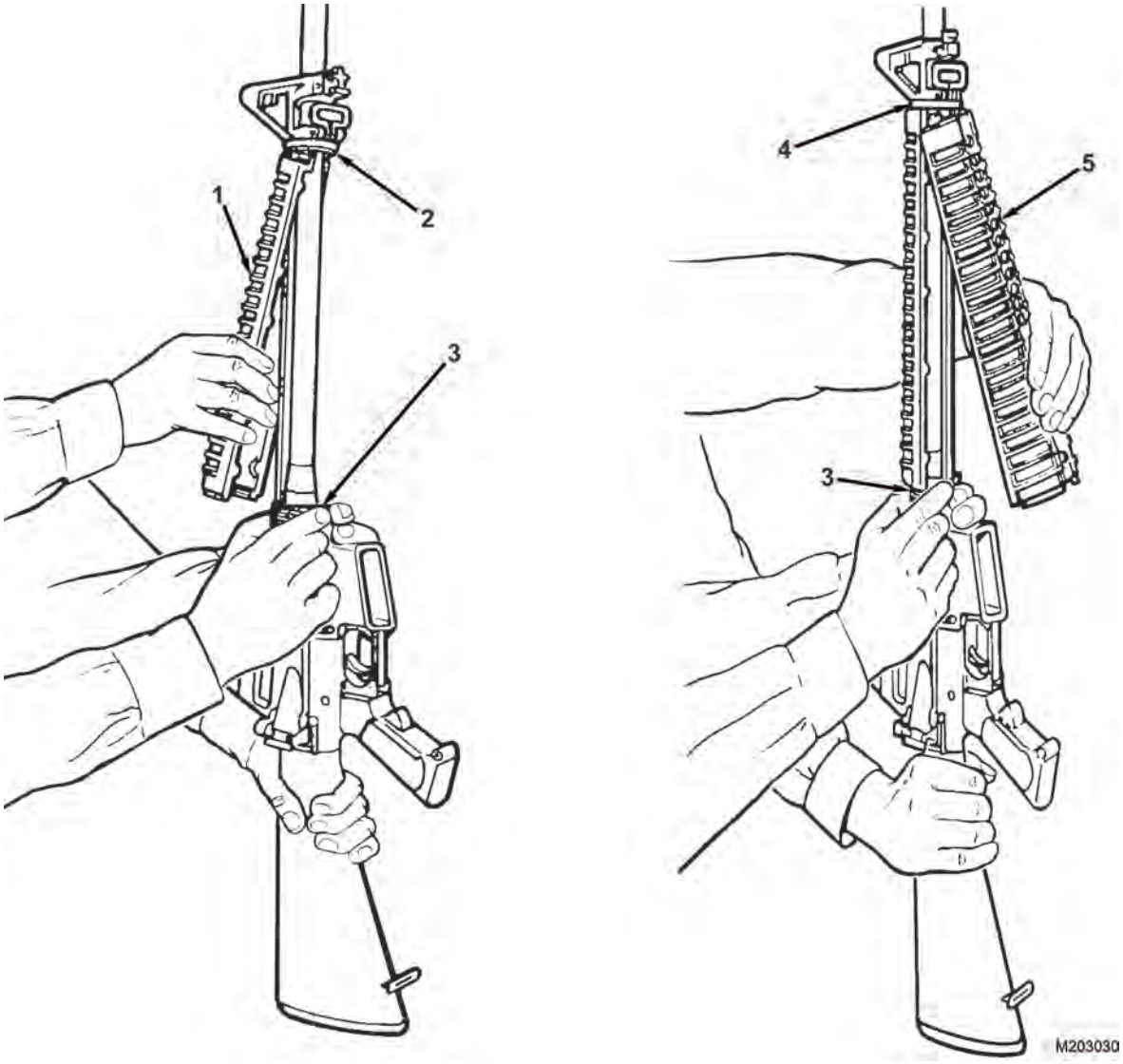


Figure 20. Hand Guard.

24. Install sling (Figure 21, Item 3) in front swivel (Figure 21, Item 1) or side swivel mount (Figure 21, Item 2).
25. Re-zero the M4 Series Carbine after removal of M203A1, since removal changes the zero.

REMOVAL OF M203 GRENADE LAUNCHER FROM M16 SERIES RIFLE/M203A1 FROM M4 CARBINE - Continued

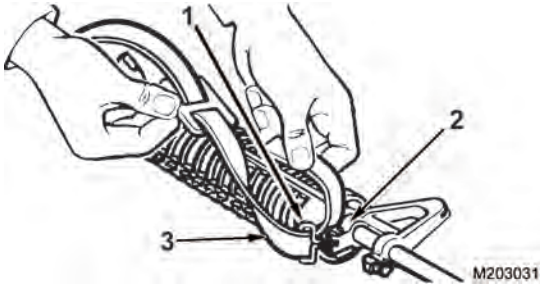


Figure 21. Sling.

END OF TASK

DISASSEMBLY

NOTE

Disassemble only to replace unserviceable components.

1. Remove two machine screws (Figure 22, Item 2) from leaf sight assembly (Figure 22, Item 3).
2. Remove leaf sight assembly (Figure 22, Item 3) from hand guard assembly (Figure 22, Item 1).

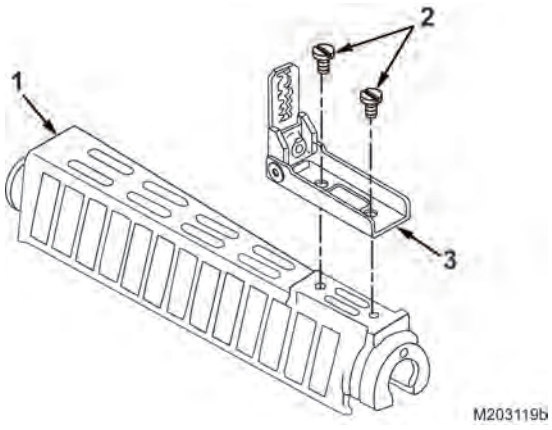


Figure 22. Leaf Sight and Rail Grabber Assembly.

END OF TASK

INSPECTION

1. Inspect rifle/carbine (Figures 23 and 24, Item 1). Refer to TM 9-1005-249-23&P, TM 9-1005-319-23&P, or TM 05538/10012–IN (USMC only).

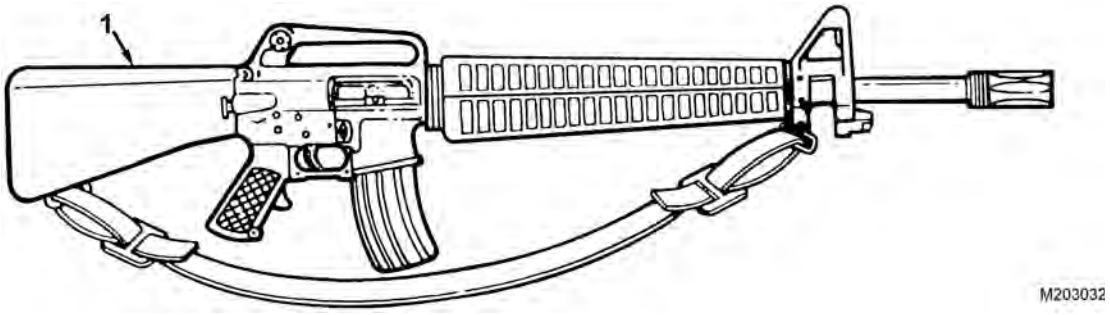


Figure 23. M16 Rife.

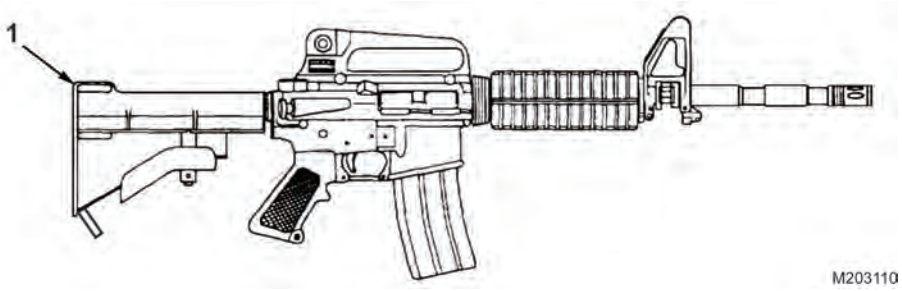


Figure 24. M4 Carbine.

2. Inspect mounting bracket (Figure 25, Item 1) for bends or damage. If damaged, replace as necessary. Inspect two machine screws (Figure 25, Item 2) for damage. If damaged, replace machine screws. **USMC ONLY:** Refer to step 3.

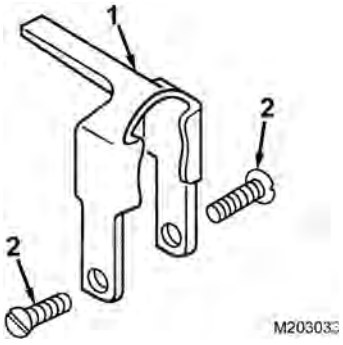


Figure 25. M16 Mounting Bracket.

INSPECTION - Continued

3. Inspect mounting bracket assembly (Figure 26, Item 1) for bends or damage. If damaged, replace/repair. Inspect two socket head screws (Figure 26, Item 2) and washers (Figure 26, Item 3) for damage. If damaged, replace.

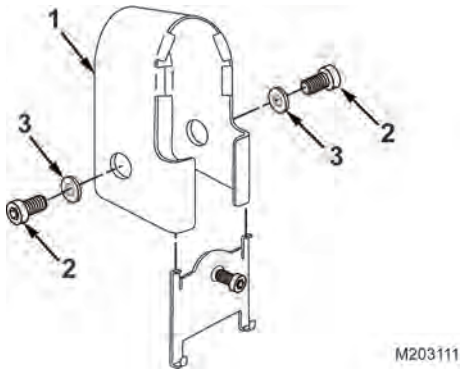


Figure 26. M4 Carbine Mounting Bracket.

4. Inspect bushing halves (Figure 27, Item 1) for chips or wear. If damaged, replace bushing halves.
5. Inspect heat shield for tightness on hand guards. If loose enough to rattle, replace as necessary.

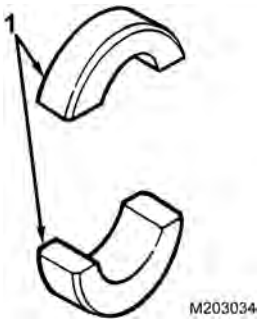


Figure 27. Bushing Halves.

END OF TASK

ASSEMBLY

1. Align holes in base of leaf sight assembly (Figure 28, Item 3) with holes in hand guard assembly (Figure 28, Item 1). Apply sealing compound to two machine screws (Figure 28, Item 2). Install and fully tighten two machine screws.
2. Install hand guard assembly (Figure 28, Item 1) on M16 Series Rifle. Refer to M203 Grenade Launcher to M16 Series Rifle, Step 23.

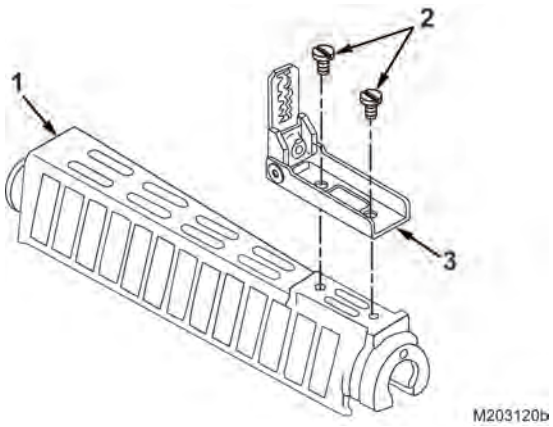


Figure 28. Hand Guard and Leaf Sight Assembly.

END OF TASK

INSTALLATION

M203 Grenade Launcher to M16 Series Rifle

NOTE

- The M203 grenade launcher must be reinstalled on the same rifle from which it was removed.
- The M203A1 grenade launcher may be switched to a different carbine.
- When mounting an M203A1 grenade launcher, ensure side sling swivel is mounted on the right side of the carbine. If not, remove side sling swivel (TM 9-1005-319-23&P).

1. Remove sling (Figure 29, Item 2) from front swivel (Figure 29, Item 1).

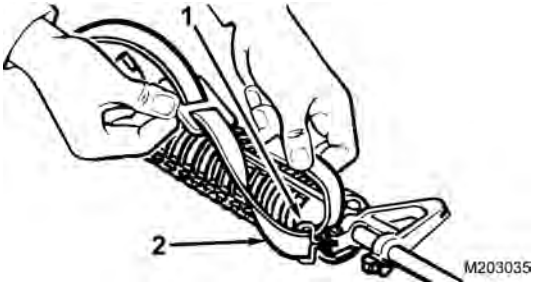


Figure 29. Sling Removal.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

CAUTION

Do not use a screwdriver or any other tool when removing the hand guard. Failure to comply may result in damage to the hand guard and/or slip ring.

NOTE

Refer to TM 9-1005-249-10 for the buddy system procedure on installing hand guards. Keep both hand guards to convert M16 Series Rifle back to original configuration.

2. Push down on the slip ring (Figure 30, Item 1) and pull out and down on the hand guard (Figure 30, Item 2).

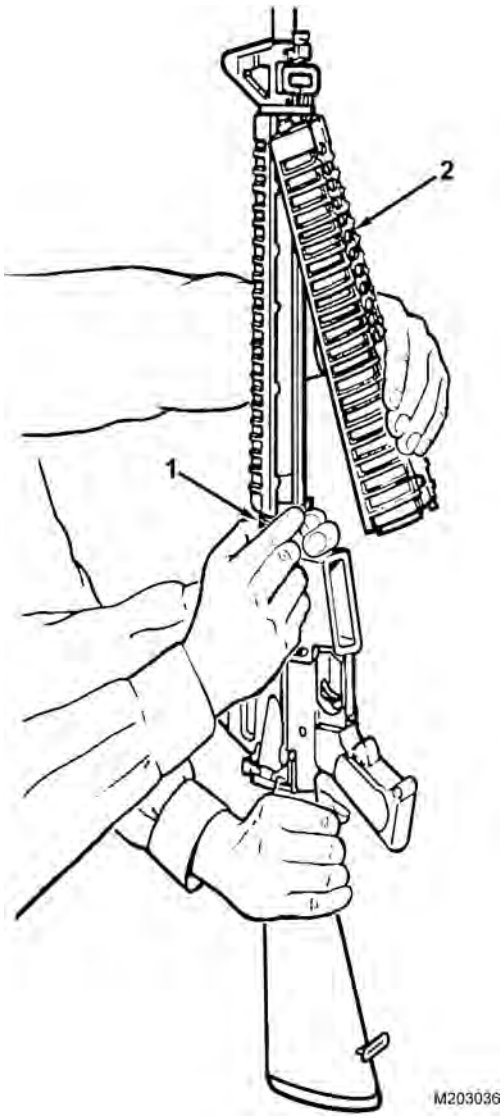


Figure 30. Hand Guard Removal.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

3. Push down on the slip ring (Figure 31, Item 2) and lift the hand guard (Figure 31, Item 1) up and out.

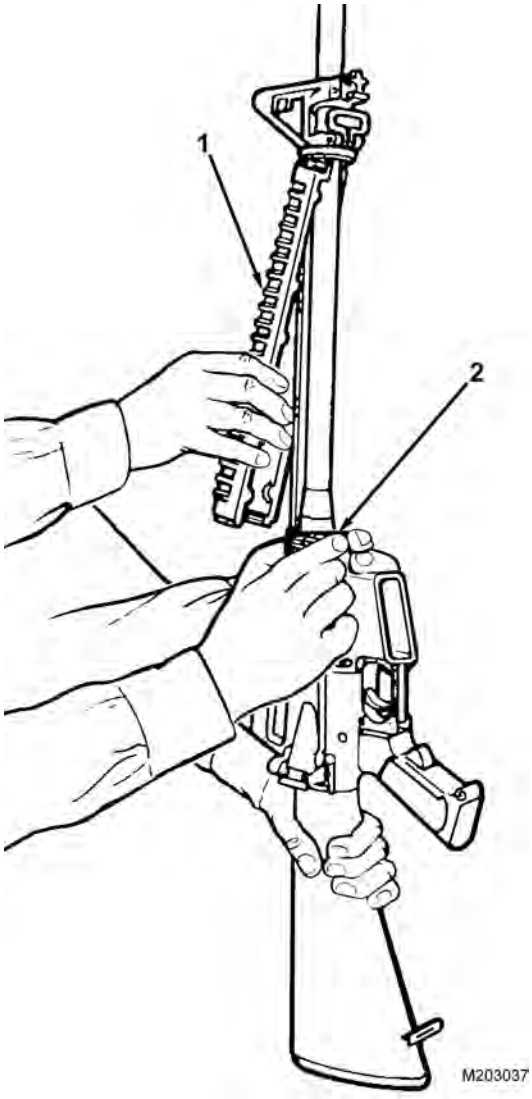


Figure 31. Lifting the Hand Guard.

4. Remove front swivel (Figure 32, Item 1) from bottom of front sight by driving out rivet (Figure 32, Item 2) from swivel. Discard rivet.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

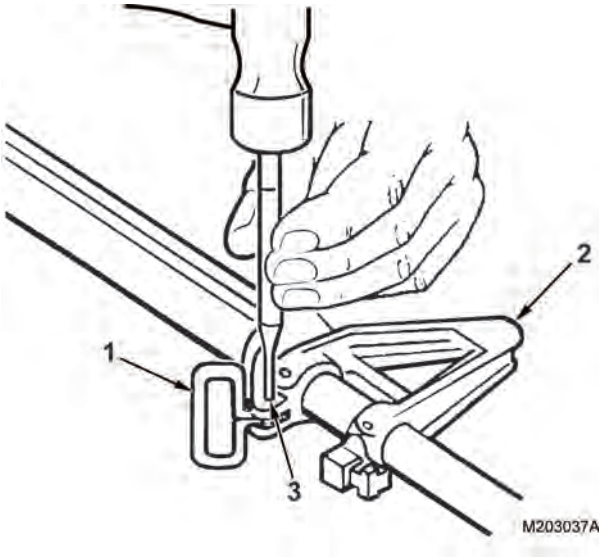


Figure 32. Front Swivel Rivet Removal.

NOTE

The M16/M16A1 Rifle uses the old-type swivel mount and swivel locking bar. When one or both parts must be replaced, order new-type swivel mount (P/N 12598617) and swivel locking bar (P/N 12012059). M16A2 can only use the new configuration.

5. Install front swivel (Figure 33, Item 2) and new rivet (Figure 33, Item 1) in swivel mount (Figure 33, Item 3). Flare the rivet with a punch and hammer.

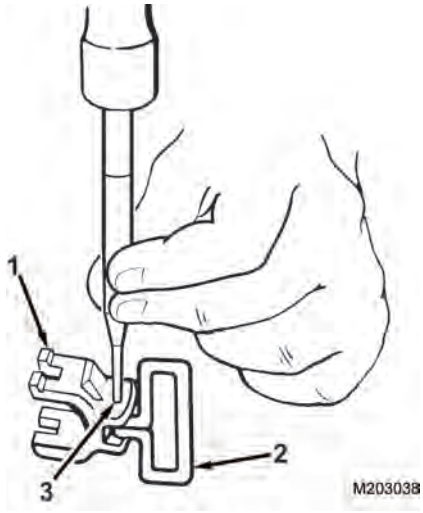


Figure 33. Front Swivel Mount Rivet Installation.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

6. Install swivel mount (Figure 34, Item 1) on barrel (Figure 34, Item 2).

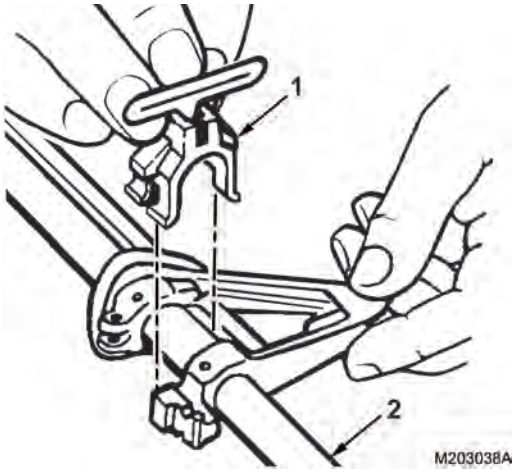


Figure 34. Front Swivel Mount Installation.

7. Place swivel locking bar (Figure 35, Item 1) in swivel mount (Figure 35, Item 2).

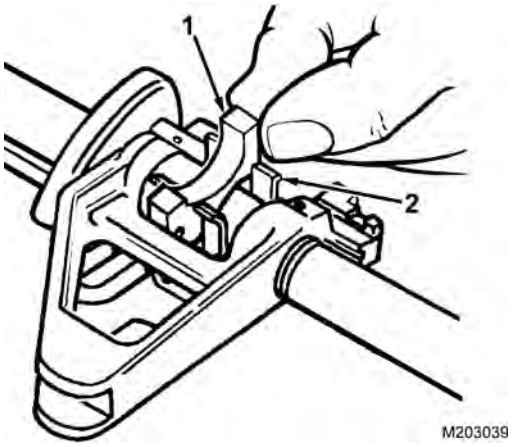


Figure 35. Swivel Locking Bar Installation.

8. Install two spring pins (Figure 36, Item 1) in swivel mount (Figure 36, Item 2).

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

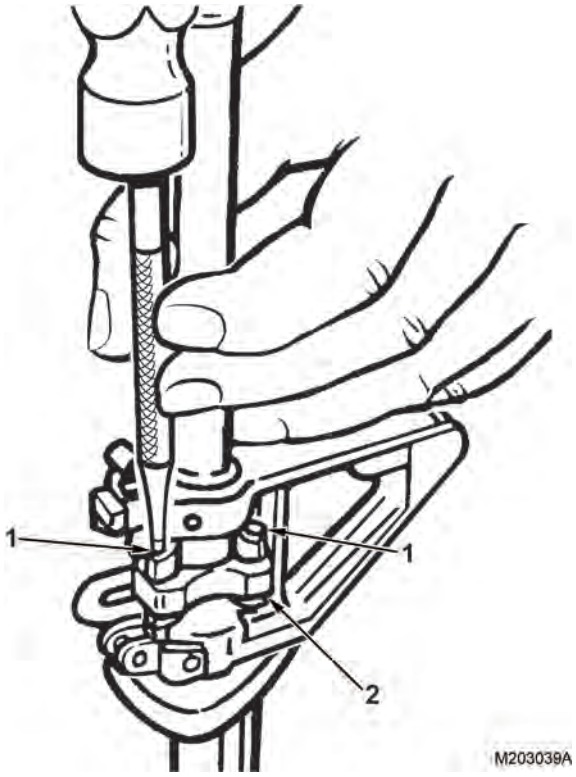


Figure 36. Spring Pins Installation.

9. Remove barrel assembly (Figure 37, Item 2) from receiver assembly (Figure 37, Item 1) if assembled (WP 0014).

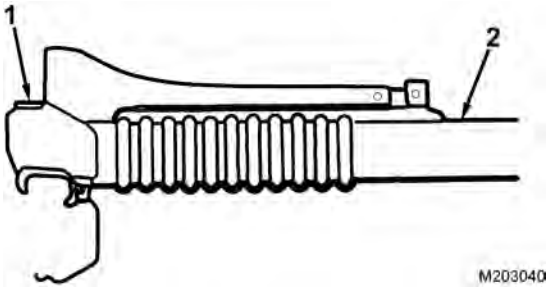


Figure 37. Barrel Assembly Removal.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

10. Install bushing half (Figure 38, Item 3) in mounting bracket (Figure 38, Item 1).
11. Position mounting bracket (Figure 38, Item 1) over rifle barrel with the tip (Figure 38, Item 2) pointing forward. Install other bushing half (Figure 38, Item 3).

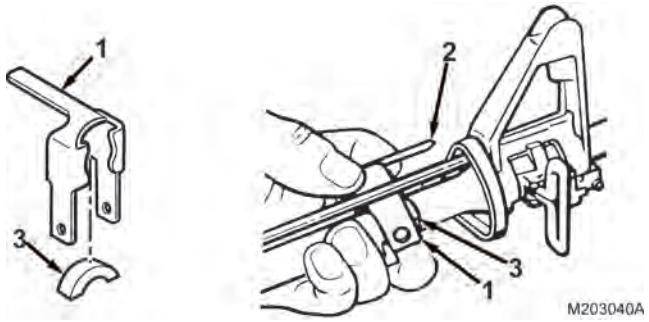


Figure 38. Mounting Bracket Installation.

12. While holding mounting bracket (Figure 39, Item 1) forward, position receiver assembly (Figure 39, Item 2) over rifle barrel. Align spring pin (Figure 39, Item 3) with notch in barrel nut (Figure 39, Item 4). Ensure spring pin is fully seated in notch of barrel nut.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

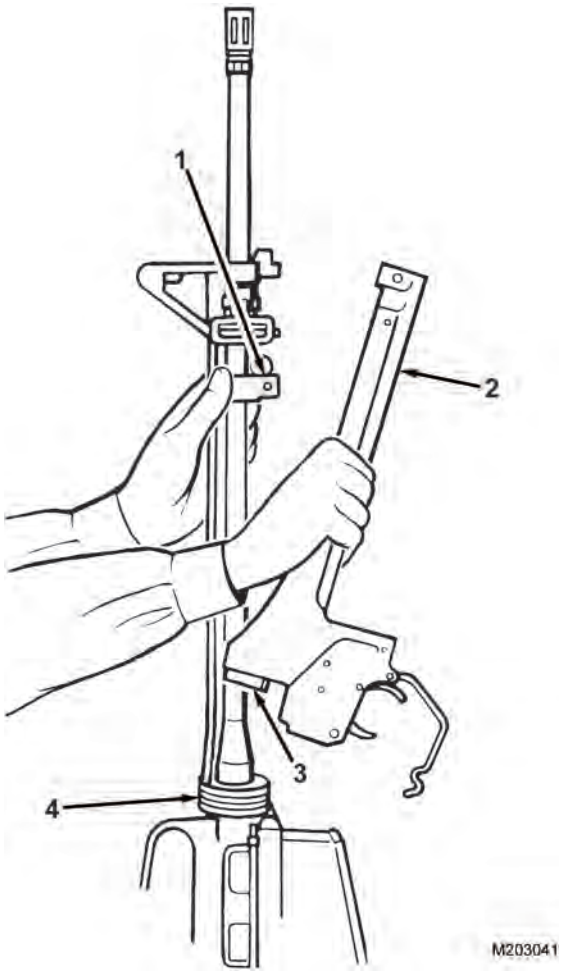


Figure 39. Aligning Receiver Assembly.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

NOTE

For proper alignment, ensure the receiver assembly is centered under the barrel of the rifle.

13. Seat receiver assembly (Figure 40, Item 1) firmly in rifle (Figure 40, Item 2).

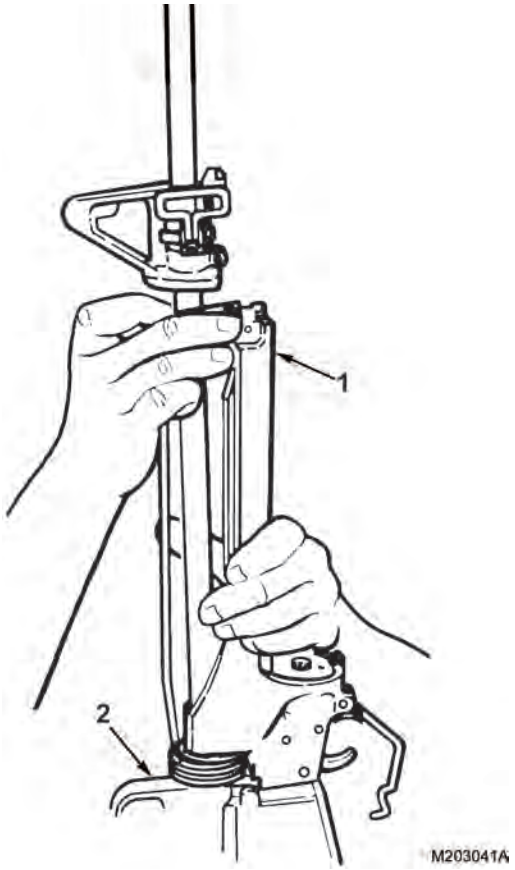


Figure 40. Seating Receiver Assembly.

CAUTION

The mounting bracket tang has been lengthened and will require filing for proper fit. Remove only the minimum amount of metal from tip to make sure mounting holes are properly aligned. Failure to comply may result in weapon damage.

14. If screw holes in receiver assembly and mounting bracket (Figure 41, Item 1) cannot be aligned, remove the mounting bracket and file the tip as required.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

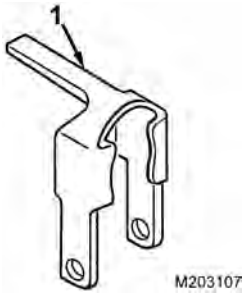


Figure 41. Mounting Bracket Length.

15. Align screw holes in receiver assembly and mounting bracket and install two machine screws (Figure 42, Item 1). Fully tighten machine screws.

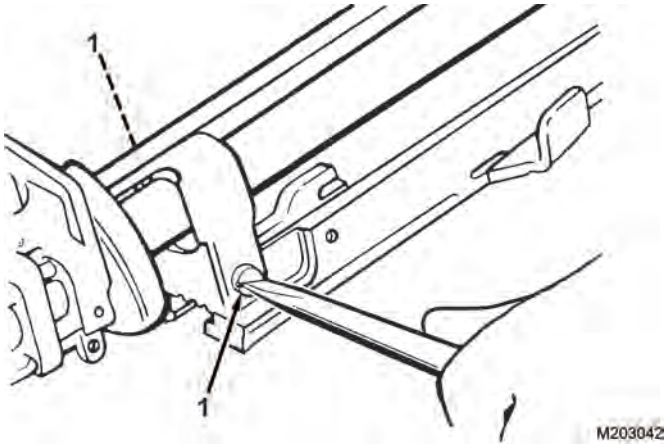


Figure 42. Receiver Assembly Machine Screws.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

16. Check installation of receiver assembly as follows:
    a. The movement from side to side should not exceed 0.125 in. (0.32 cm) left or right of center. Total movement cannot exceed 0.25 in. (0.64 cm).
    b. If excess side-to-side movement exists, replace the bushing halves.
    c. There must be no up-and-down movement between the receiver assembly (M203) and the rifle barrel.
17. Use cleaning rod section (TM 9-1005-249-10, TM 9-1005-319-10, or TM 05538C-10/1A (Marine Corps only)) (Figure 43, Item 2) to engage trigger guard (Figure 43, Item 1).

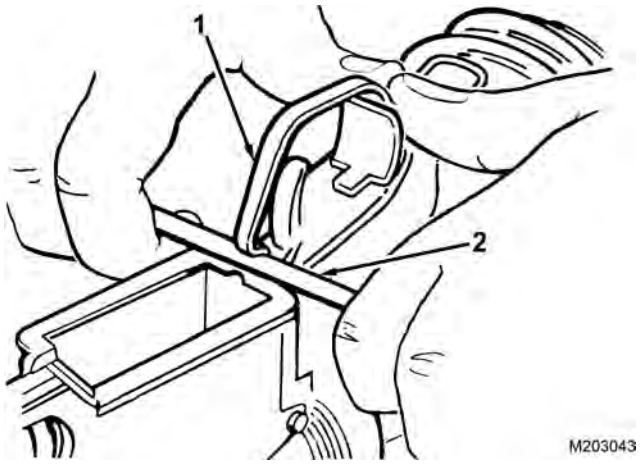


Figure 43. Trigger Guard Installation.

18. Install new wire (Figure 44, Item 2) as follows:
    a. Install an 8 in. (20.32 cm) length of wire (Figure 44, Item 2); it may be started at either machine screw (Figure 44, Item 1).
    b. Insert wire (Figure 44, Item 2) approximately halfway through hole in head of machine screw (Figure 44, Item 1).

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

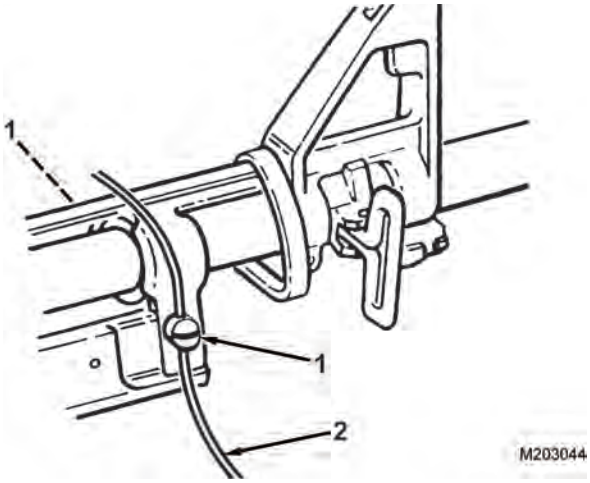


Figure 44. Wire Installation.

c. Wrap the half of the wire farthest from the front of the receiver assembly around the head of the mounting screw in a clockwise direction.

d. Twist wire strands together in either right-hand or left-hand direction. Begin at the screw head until the twisted wire is approximately 1.25 in. (3.175 cm) long (Figure 45).

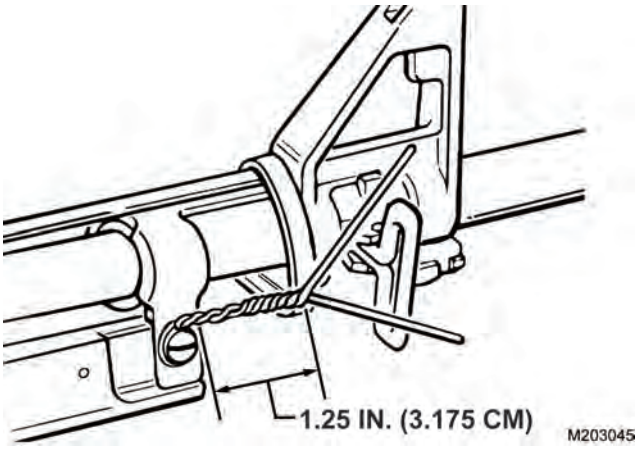


Figure 45. Wire Twisting.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

e. Wrap the twisted wire around the front of receiver assembly (Figure 46, Item 1). Insert one strand of wire through machine screw (Figure 46, Item 2) and pull wire tight.

f. Untwist the wire if twisted segments of the wire prevent it from being drawn tightly across the front of receiver assembly. Replace wire if untwisted, because wire will not be tight.

g. Wrap loose strand of wire around head of machine screw (Figure 46, Item 2) in a *counterclockwise* direction.

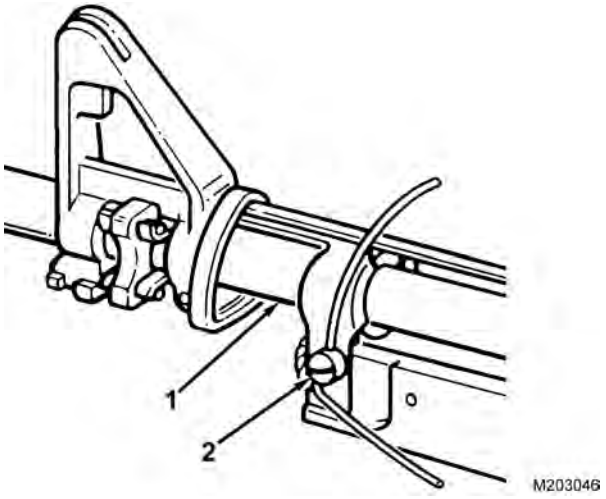


Figure 46. Wire Wrapping.

19. Twist wire strands together, beginning at the screw head, until the twisted wire is approximately 0.5 in. (1.27 cm) long (Figure 47).

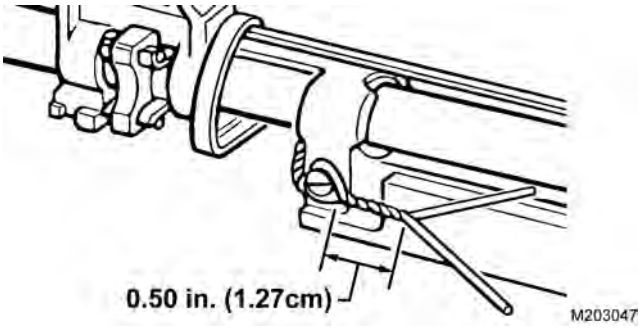


Figure 47. Twisting Wire Strands.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

20. Cut off excess wire strands and bend twisted section out of the way (Figure 48).

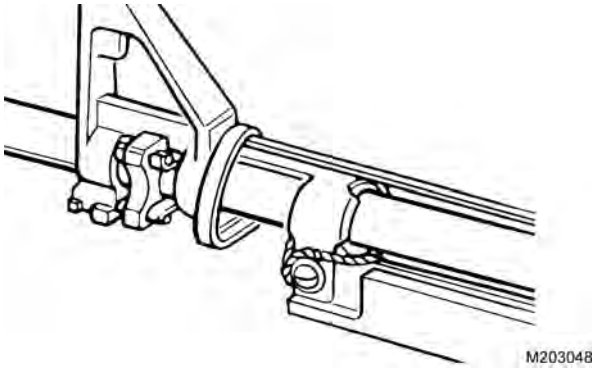


Figure 48. Cutting Wire Strands.

21. Insert tracks on barrel assembly (Figure 49, Item 1) into tracks in receiver assembly (Figure 49, Item 3) and compress barrel stop (Figure 49, Item 2). Pull barrel assembly rearward and barrel stop will snap in place.

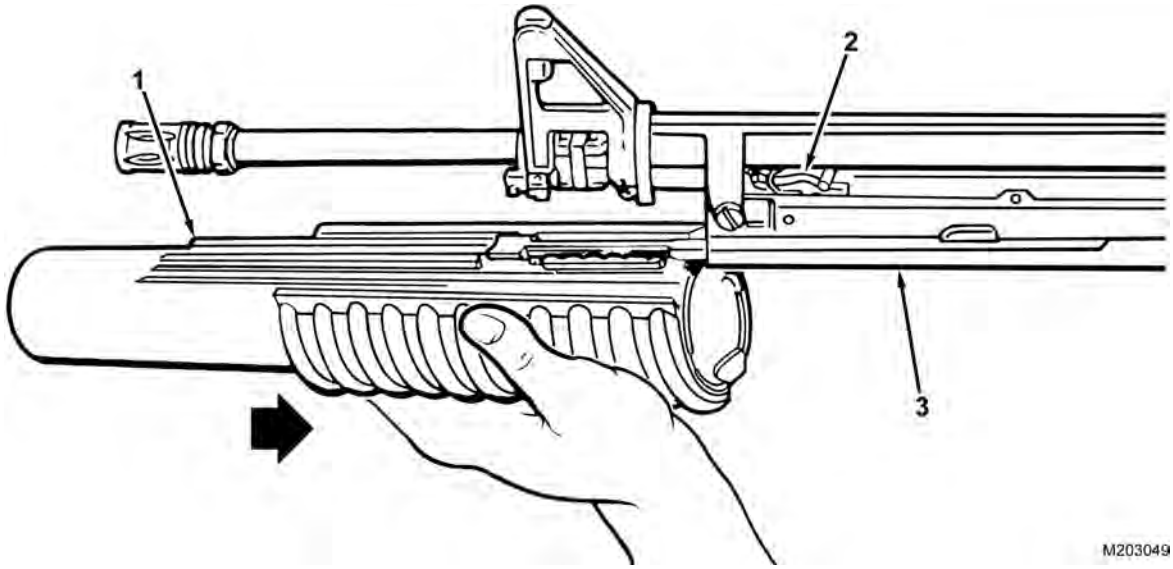


Figure 49. Barrel Assembly Installation.

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

22. Pull barrel assembly (Figure 50, Item 2) rearward to close. Barrel latch (Figure 50, Item 1) must lock barrel assembly fully closed.

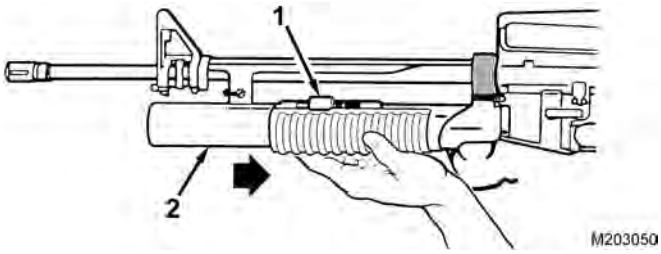


Figure 50. Closing Barrel Assembly.

23. Stand the weapon on the buttstock (Figure 51, Item 4). Grip the stock with one hand and the lower end of the hand guard assembly (Figure 51, Item 2) with the other hand. Have your buddy press down with both hands on the slip ring (Figure 51, Item 3). Install hand guard assembly in tube cap (Figure 51, Item 1). Push hand guard assembly in place and release slip ring.

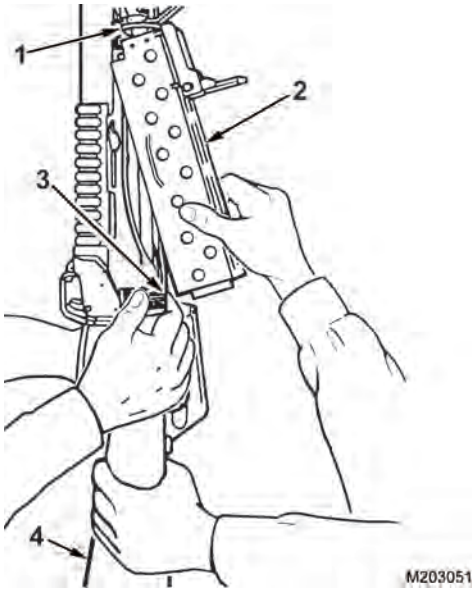


Figure 51. Hand Guard Installation.

24. Install sling (Figure 52, Item 2) in front swivel (Figure 52, Item 1).

INSTALLATION - Continued

M203 Grenade Launcher to M16 Series Rifle - Continued

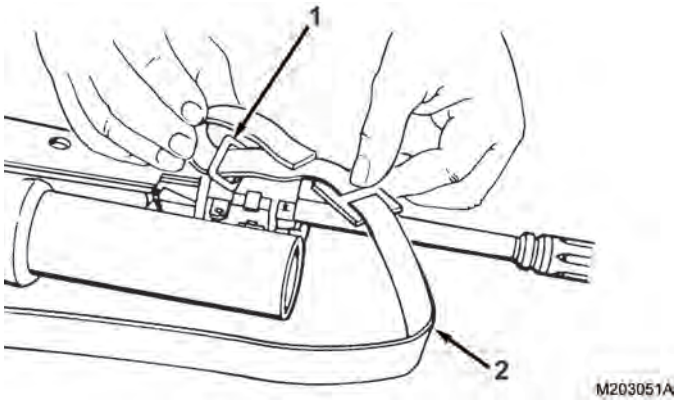


Figure 52. Sling Installation.

25. Install quadrant sight assembly (Figure 53, Item 1); pull it gently to rear until it becomes snug or engage the locator pin on the bracket assembly with the hole on the carrying handle. Use a screwdriver to tighten the mounting bolt (Figure 53, Item 2) on the right side.

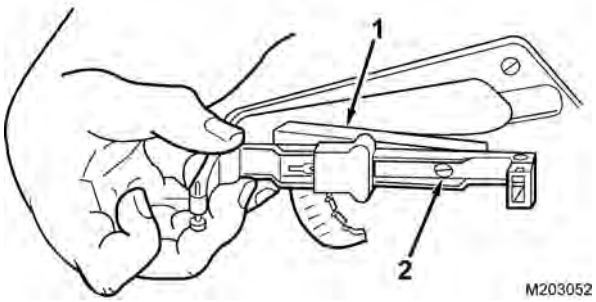


Figure 53. Quadrant Sight Assembly Installation.

NOTE

- When used on the M16A4 Rifle, the leaf sight and rail grabber assembly will be attached to slot T38 on the M5 Adapter Rail System.
- When used on the M4 or M4A1 Carbine, the leaf sight and rail grabber assembly will be attached to slot T24 on the M4 Adapter Rail System.

26. Turn the torque knob of the assembly *counterclockwise* until it stops turning. Place the assembly on the upper rail and ensure the recoil lug is seated in the correct slot. The torque knob should be to the left of the carbine or rifle. Turn the torque knob *clockwise* until you hear two clicks.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine

1. Disassemble the quadrant sight assembly (WP 0016).
2. Disassemble range quadrant (WP 0017). Dispose/Turn in two excess machine screws.
3. Install quadrant sight spacer (Figure 54, Item 2) between range quadrant (Figure 54, Item 3) and bracket assembly (Figure 54, Item 1).
4. Reassemble range assembly quadrant using two new machine screws (Figure 54, Item 4).
5. Reassemble quadrant sight assembly (WP 0016).

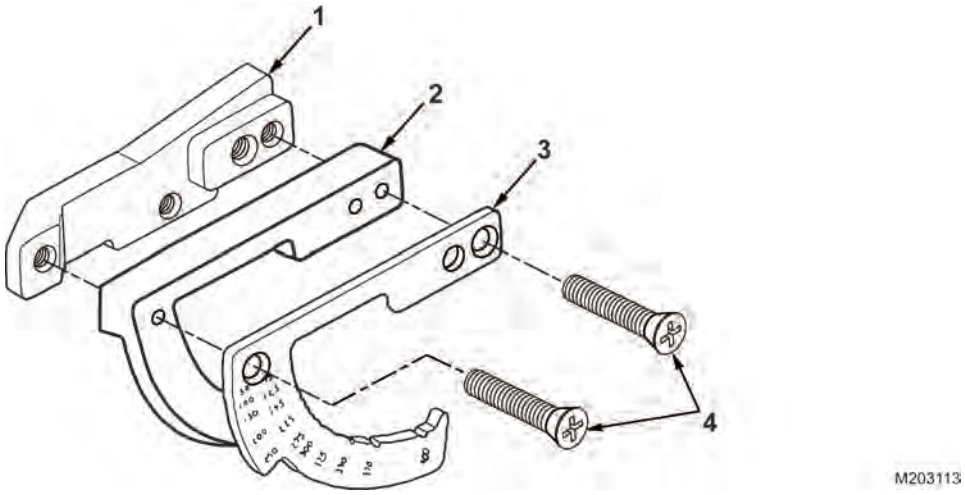


Figure 54. Quadrant Sight Spacer.

6. Remove sling (Figure 55, Item 2) from front swivel (Figure 55, Item 1).

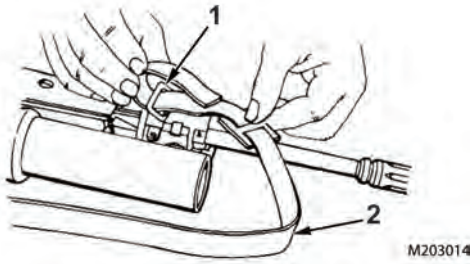


Figure 55. Sling Removal.

NOTE

Side swivel mount has to be on the right side of the M4/M4A1 when mounting the M203A1 Grenade Launcher.

7. Ensure side swivel mount has the sling swivel located on the right side of the M4/M4A1. If side swivel mount is correct, skip to step 14. If not, complete steps 8–13.
8. Remove front swivel (Figure 56, Item 1) from bottom of front sight by driving out rivet (Figure 56, Item 2).

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

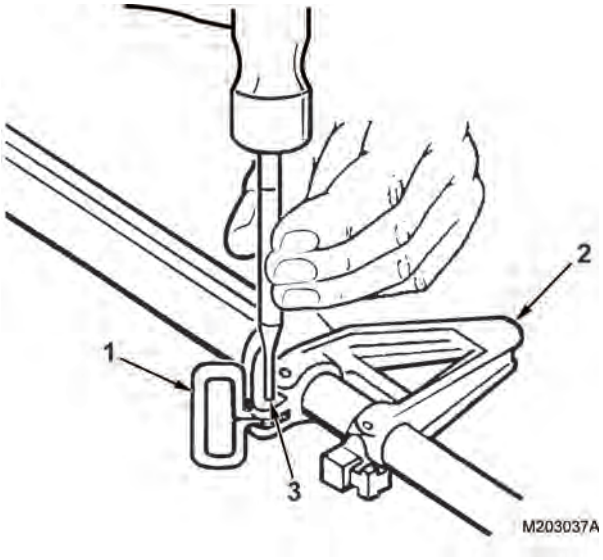


Figure 56. Front Swivel Rivet Removal.

NOTE

M4/M4A1 Carbines use swivel locking bar (P/N 12991254).

9. Install front swivel (Figure 57, Item 2) and new rivet (Figure 57, Item 1) in swivel mount (Figure 57, Item 3). Flare the rivet with a punch and hammer.

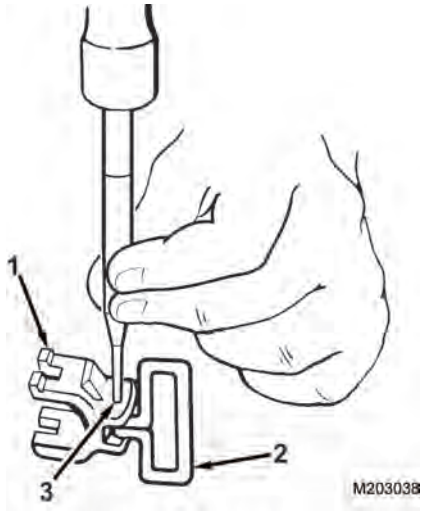


Figure 57. Front Swivel Mount Rivet Installation.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

10. Install swivel mount (Figure 58, Item 1) on barrel.

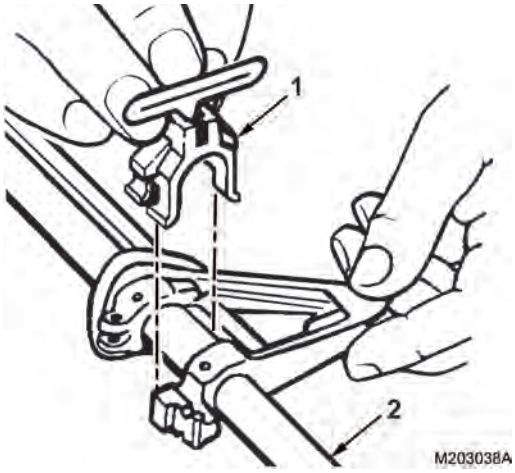


Figure 58. Front Swivel Mount Installation.

11. Place swivel locking bar (Figure 59, Item 1) in swivel mount (Figure 59, Item 2).

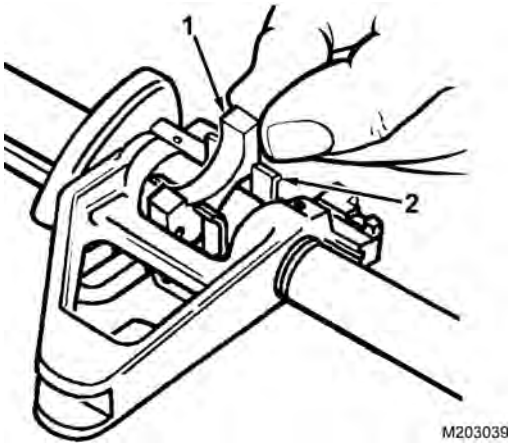


Figure 59. Swivel Locking Bar Installation.

12. Install two spring pins (Figure 60, Item 1) in swivel mount (Figure 60, Item 2).

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

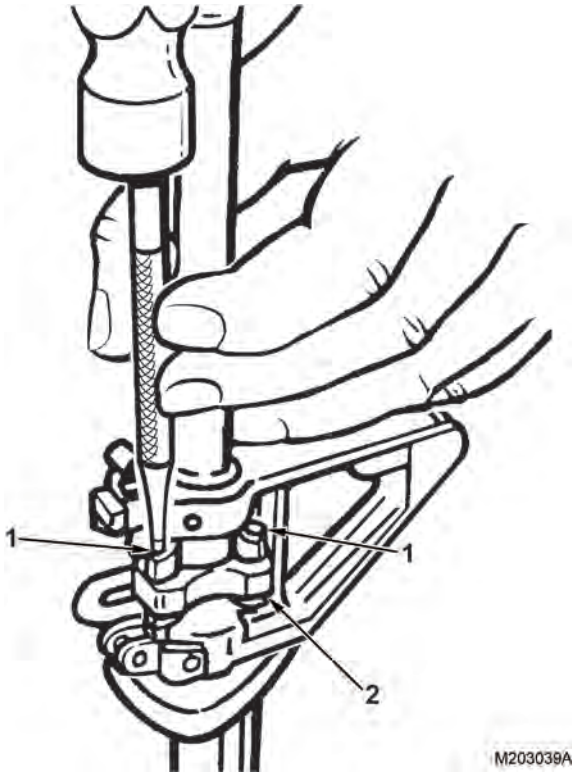


Figure 60. Spring Pins Installation.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

13. Install M203A1 to the M4/M4A1.
    a. Remove hand guard.

NOTE

- The following step is performed without the mounting bracket.
- For proper alignment, ensure the receiver assembly is centered under the barrel of the carbine.

    b. Align spring pin (Figure 61, Item 2) with notch in barrel nut (Figure 61, Item 3). Be sure spring pin is fully seated in notch of barrel nut and seat receiver assembly (Figure 61, Item 1) is firmly in carbine.

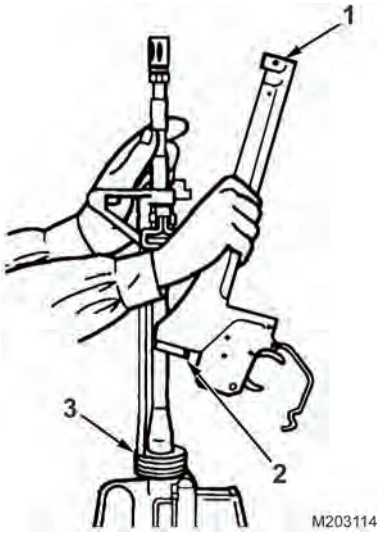


Figure 61. Aligning Receiver Assembly — M4 Carbine.

    c. Depress the barrel stop on the M203A1 receiver and ensure it operates through its full range of motion. If the barrel stop operates through its full range of motion, proceed to step 14 (Figure 62).

    d. If barrel stop is prevented from operating through its full range of motion by making contact with the bayonet lug on the M4/M4A1 Carbine, remove the M203A1 receiver from the M4/M4A1 Carbine (Figure 62).

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

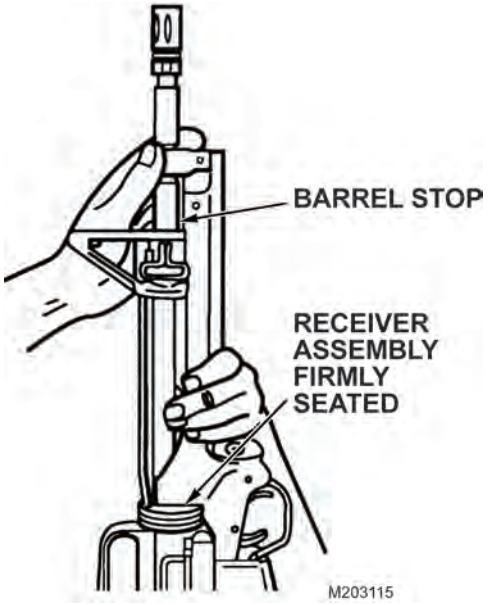


Figure 62. Seating Receiver Assembly — M4 Carbine.

e. Disassemble the barrel stop from the M203A1 receiver (WP 0015).

f. Modify barrel stop, as follows:

(1) Grind or file excess material from barrel stop (Figure 63).

(2) File burrs and sharp edges from barrel stop.

(3) Touch up area of bare metal with solid film lubricant.

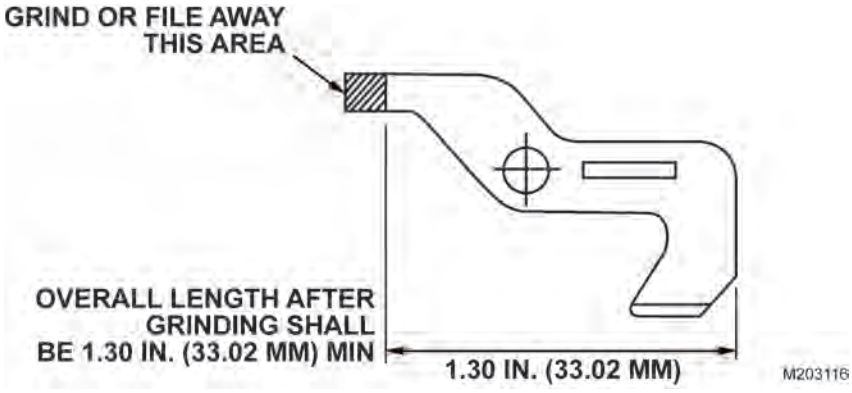


Figure 63. Modify Barrel Stop.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

g. Assemble barrel stop in M203A1 receiver (WP 0015).

14. Install bushing half (Figure 64, Item 2) into mounting bracket assembly (Figure 64, Item 1).

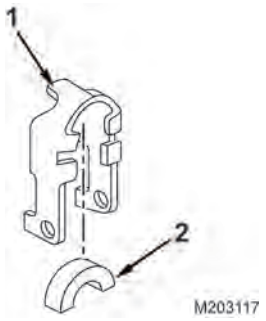


Figure 64. Bushing Half into Mounting Bracket.

15. Stake once on each side of barrel stop pin hole (Figure 65, Item 1).
16. Position mounting bracket over carbine barrel in step down area between muzzle and front sight with the flanges toward the muzzle.
17. Rotate mounting bracket upward/sideways and insert other bushing half between M203A1 receiver and M4/M4A1 Carbine barrel.
18. Insert bracket clamp assembly (Figure 65, Item 6) into mounting bracket (Figure 65, Item 2) behind the mounting bracket flange, with the rounded portion of bracket clamp assembly toward carbine barrel, and slide the bracket clamp assembly in until the bracket clamp assembly tabs hook underneath the mounting bracket flange.
19. Lift up on bracket clamp assembly to avoid binding and align screw holes in receiver assembly and mounting bracket (Figure 65, Item 2). Install two washers (Figure 65, Item 4), two socket head screws (Figure 65, Item 3), and tighten snug by hand.
20. Screw in the bracket clamp assembly screw (Figure 65, Item 5) until the bracket clamp (Figure 65, Item 6) is snug against the mounting bracket flange, then tighten the bracket clamp assembly screw an additional 3/4 turn. DO NOT OVER TIGHTEN.
21. Fully tighten the two socket head screws (Figure 65, Item 3) on the side of the receiver.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

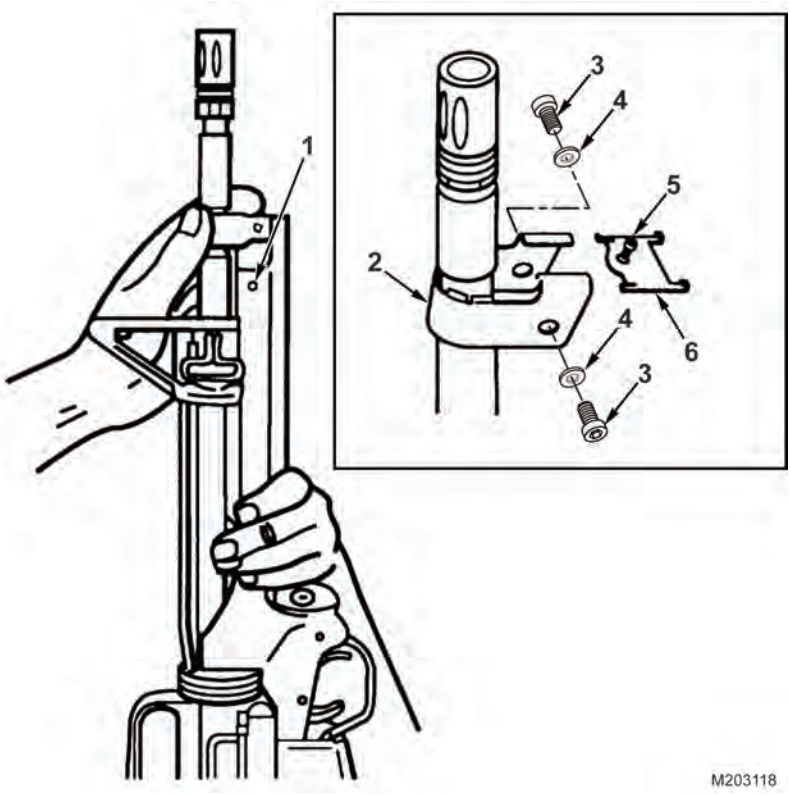


Figure 65. Receiver Installation — M4 Carbine.

22. Check installation of the M203A1 receiver assembly as follows:
    a. The movement from side to side should not exceed 0.125 in. (3.175 mm) left or right of center. Total movement cannot exceed 0.25 in. (6.35 mm).
    b. If excess side-to-side movement exists, replace the bushing halves.
    c. Check forward and rearward movement of M203A1 receiver. No forward or backward movement is allowed.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

23. Use cleaning rod section (TM 9-1005-319-10 or TM 05538C-10/1A (Marine Corps only)) (Figure 66, Item 2) to engage trigger guard (Figure 66, Item 1).

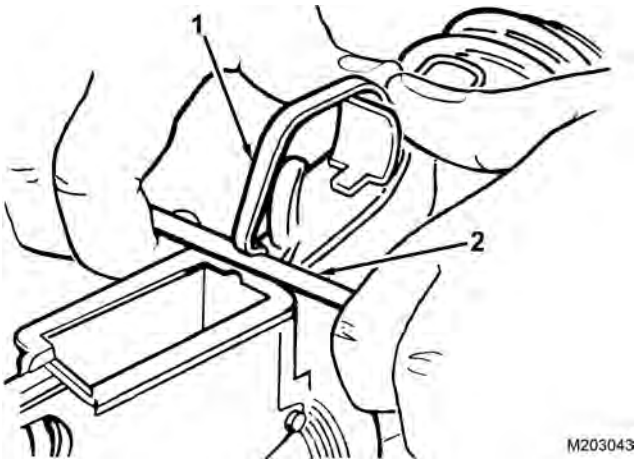


Figure 66. Trigger Guard Installation.

24. Install new wire:
    a. Install an 8 in. (20.32 cm) length of wire; It may be started at either socket head screw.
    b. Insert wire approximately halfway through hole in head of socket head screw.
    c. Wrap the half of the wire farthest from the front of the receiver assembly around the head of the mounting screw in a clockwise direction.
    d. Twist wire strands together in either right-hand or left-hand direction. Begin at the socket head screw until the twisted wire reaches an appropriate hole in the bracket clamp assembly screw. Insert wire through one of the bracket clamp assembly screw holes.
    e. Twist wire in same direction used in step "a" until one strand of wire can be inserted through socket head screw on other side of receiver and pull wire tight.
    f. Wrap loose strand of wire around head of socket head screw in a counterclockwise direction.
    g. Twist wire strands together, beginning at the screw head, until the twisted wire is approximately 0.5 in. (1.27 cm) long.
    h. Cut off excess wire strands and bend twisted section out of the way.
25. Insert tracks on barrel assembly (Figure 67, Item 1) into tracks in receiver assembly (Figure 67, Item 3) and compress barrel stop (Figure 67, Item 2). Pull barrel assembly rearward and barrel stop will snap in place.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

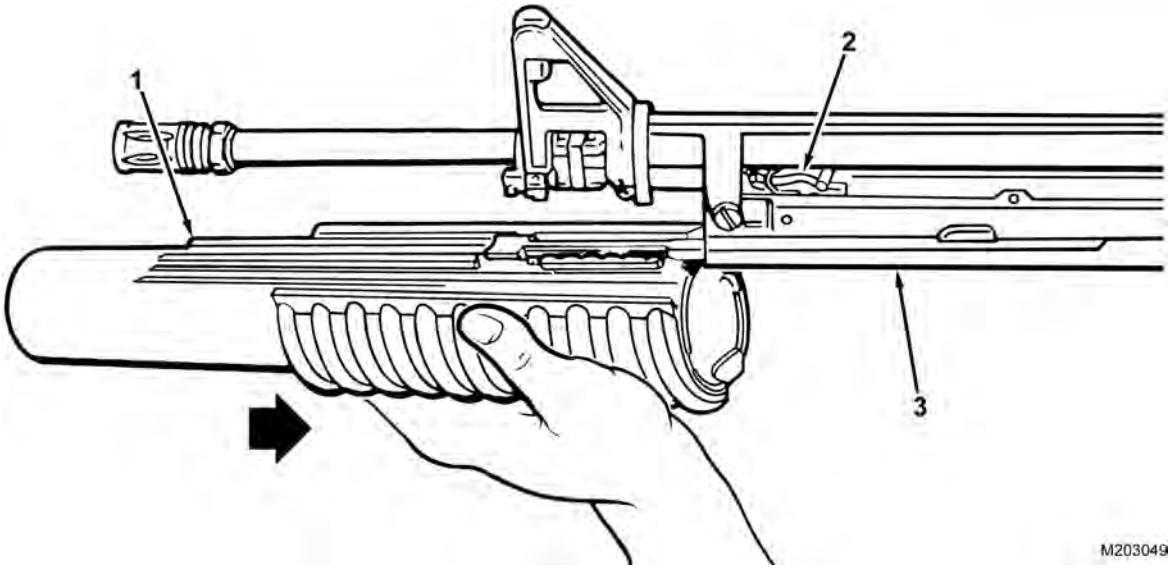


Figure 67. Barrel Assembly Installation.

26. Pull barrel assembly (Figure 68, Item 2) rearward to close. Barrel latch (Figure 68, Item 1) must lock barrel assembly fully closed.

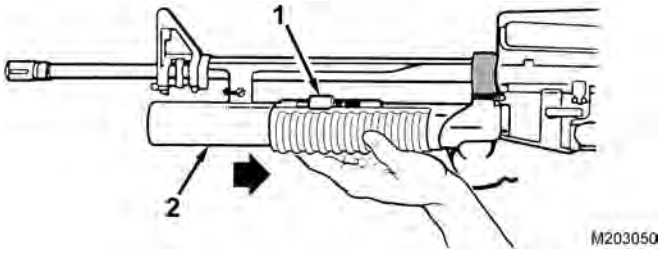


Figure 68. Closing Barrel Assembly.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

27. Stand the weapon on the buttstock (Figure 69, Item 4). Grip the stock with one hand and the lower end of the hand guard assembly (Figure 69, Item 2) with the other hand. Have your buddy press down with both hands on the slip ring (Figure 69, Item 3). Install hand guard assembly in tube cap (Figure 69, Item 1). Push hand guard assembly in place and release slip ring.

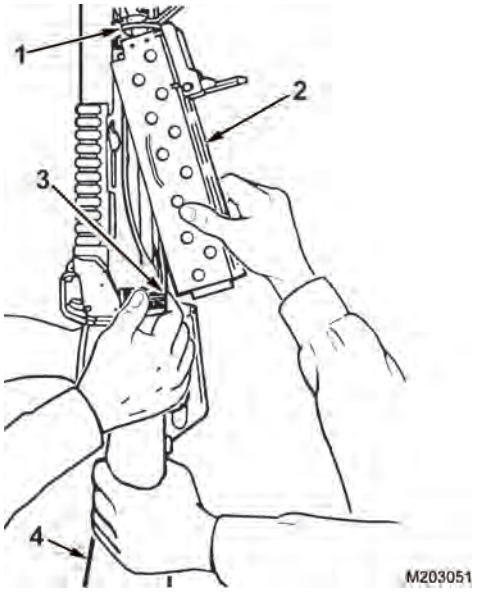


Figure 69. Hand Guard Installation.

28. Install sling (Figure 70, Item 2) in front swivel (Figure 70, Item 1).

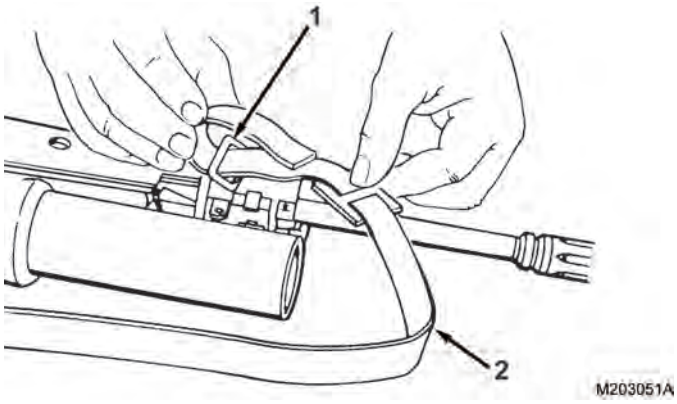


Figure 70. Sling Installation.

INSTALLATION - Continued

M203A1 to the M4/M4A1 Carbine - Continued

29. Install quadrant sight assembly (Figure 71, Item 1) to carbine; pull it gently to rear until it becomes snug or engage the locator pin on the bracket assembly with the hole on the carrying handle. Use a screwdriver to tighten the mounting bolt (Figure 71, Item 2) on the right side.

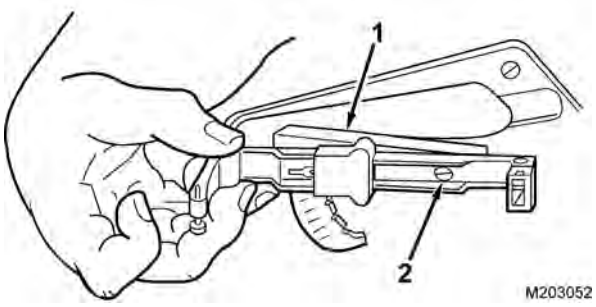


Figure 71. Quadrant Sight Assembly Installation.

30. Perform function checks on M203/M203A1, refer to TM 9-1010-221-10.

31. Re-zero M4/M4A1 Carbine (TM 9-1005-319-10 or TM 05538C-10/1A (Marine Corps only)). Installation of the M203A1 changes the zero of the M4 Carbines.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
40MM GRENADE LAUNCHER M203A2 MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only)
(WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only)
(WP 0040, Table 2, Item 6)

Materials/Parts
Sealing Compound (WP 0041, Table 1, Item 29)

Personnel Required
(2)

References
TM 05538/10012-IN (USMC only)
TM 9-1005-249-23&P
TM 9-1005-319-23&P

WARNING

Be sure to clear weapon before starting a removal. Do not squeeze the trigger until the weapon has been cleared. Inspect the chamber to be sure that it is empty. Avoid having live ammunition where maintenance is performed. Failure to comply may result in personnel injury or death.

REMOVAL

1. Hold the retaining spring (Figure 1, Item 2) away from the plunger (Figure 1, Item 1).
2. Depress the plunger (Figure 1, Item 1).
3. Rotate the latch lever (Figure 1, Item 3) upward.
4. Lift the latch arm (Figure 1, Item 4) away from the hook (Figure 1, Item 5).
5. Press the latch lever (Figure 1, Item 3) fully downward to engage the plunger (Figure 1, Item 1). It will be necessary to depress the plunger to allow the latch lever to engage the plunger . There will be an audible click when the latch lever has engaged the plunger and the plunger will snap forward toward the muzzle.
6. Rotate the latch arm (Figure 1, Item 4) up and out of the way to its fully open position. When performing this step on the rifle, carefully pull the latch arm from between the gas tube and barrel.

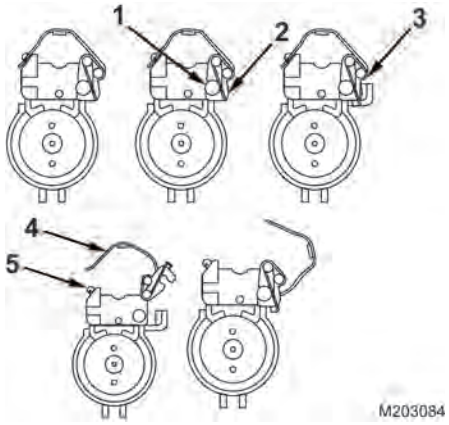


Figure 1. Unlatching the Quick Release Bracket.

7. Disengage the trigger guard (Figure 2, Item 3) from the magazine well.
8. Pivot the M203A2 (Figure 2, Item 2) downward from the host weapon, disengaging the trigger guard (Figure 2, Item 3) and the rear of the receiver (Figure 2, Item 1) from the host weapon (Figure 2, Item 4).

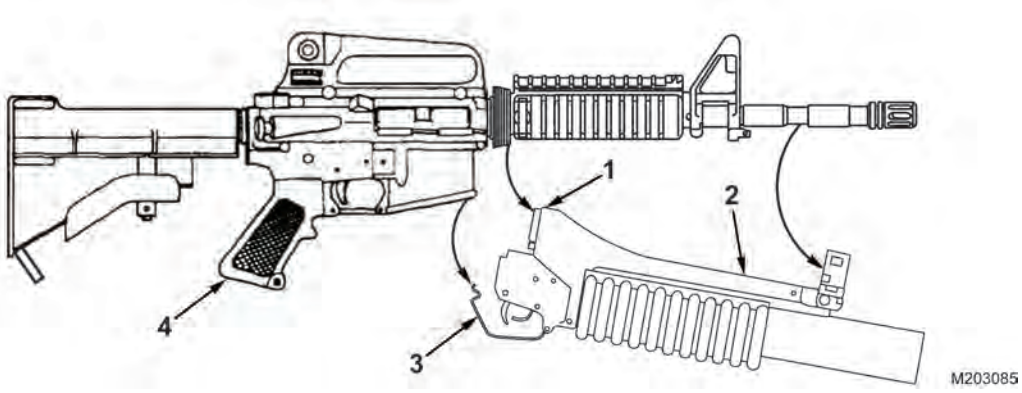


Figure 2. M203A2 Removal.

END OF TASK

DISASSEMBLY

1. Remove two socket head screws (Figure 3, Item 4) and two hex nuts (Figure 3, Item 1) from leaf sight (Figure 3, Item 2) and rail grabber assembly (Figure 3, Item 3).
2. Remove leaf sight assembly (Figure 3, Item 2) from rail grabber assembly (Figure 3, Item 3).

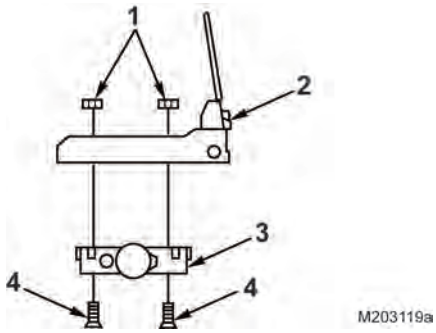


Figure 3. Leaf Sight and Rail Grabber Assembly.

END OF TASK

INSPECTION

1. Inspect rifle/carbine (Figures 4 and 5, Item 1). Refer to TM 9-1005-249-23&P, TM 9-1005-319-23&P, or TM 05538/10012–IN (USMC only).

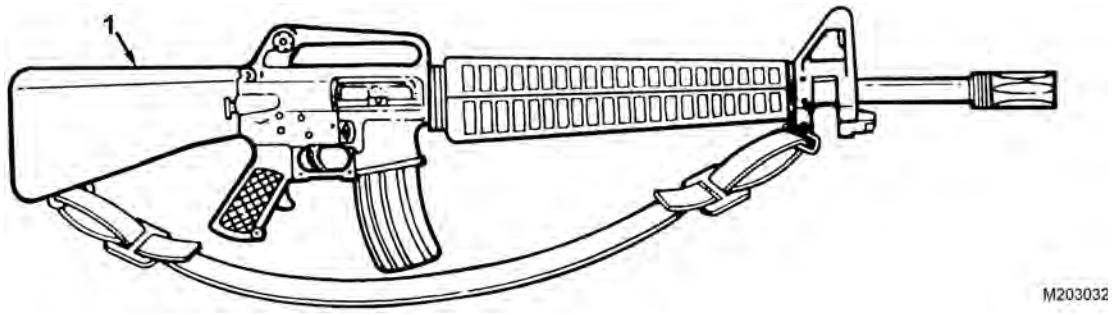


Figure 4. M16A4 Rife.

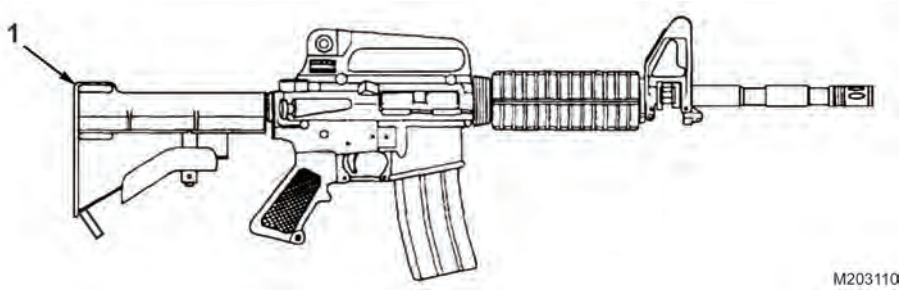


Figure 5. M4 Carbine.

INSPECTION - Continued

2. Inspect heat shield for tightness on hand guards. If loose enough to rattle, replace as necessary.

END OF TASK

ASSEMBLY

Align holes in base of leaf sight assembly (Figure 6, Item 2) with holes in rail grabber assembly (Figure 6, Item 3). Apply sealing compound to two socket head screws (Figure 6, Item 4) and assemble with two hex nuts (Figure 6, Item 1).

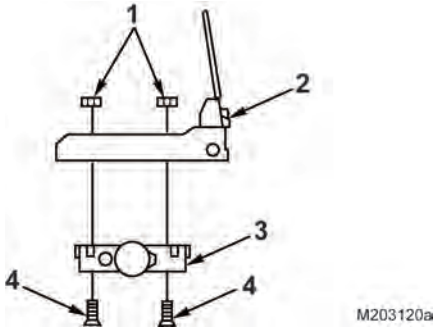


Figure 6. Hand Guard and Leaf Sight Assembly.

END OF TASK

INSTALLATION

Mounting to the M4 Carbine

Principle of the Five-Position Spacer Plate.

The basic overall length between the barrel nut roll pin at the rear of the receiver, and the starting position spacer plate cutout surface at the front, is approximately 11 in. (27.94 cm). As noted in step 4, some sliding motion may be detectable between the carbine barrel shoulder and the front of the five-position spacer plate at the starting, or minimum, overall length cutout position.

Subsequent re-insertion of the five-position spacer plate to its No. 2, No. 3, No. 4, or maximum (fifth) length position will slightly increase the overall length of the assembly beyond the basic 11 in. (27.94 cm), and therefore tend to minimize or eliminate any sliding motion between the barrel shoulder and the five-position spacer plate.

At some point, the armorer will note that the spacer plate will not fit into the cutout of the carbine barrel shoulder (as indicated as INCORRECT in step 4). At this point, go back to the next lowest position and secure, close, and lock the bracket around the carbine.

The following steps describe checking for sliding motion with the next or No. 2 notch up, and against the carbine barrel shoulder. If the No. 2 position does not minimize the sliding motion, repeat the procedure with the No. 3 notch up and so on. If the fifth or maximum position is desired, note that the "back" or smooth face of the spacer plate is oriented towards the muzzle. Do not be concerned if only a small amount of sliding motion is still detectable with the spacer plate in its apparently optimum setting, because the latch arm will compensate for this when it is closed and locked.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

1. Compare the illustration below with the quick release bracket for the purpose of familiarization with all positions of the five-position spacer plate:

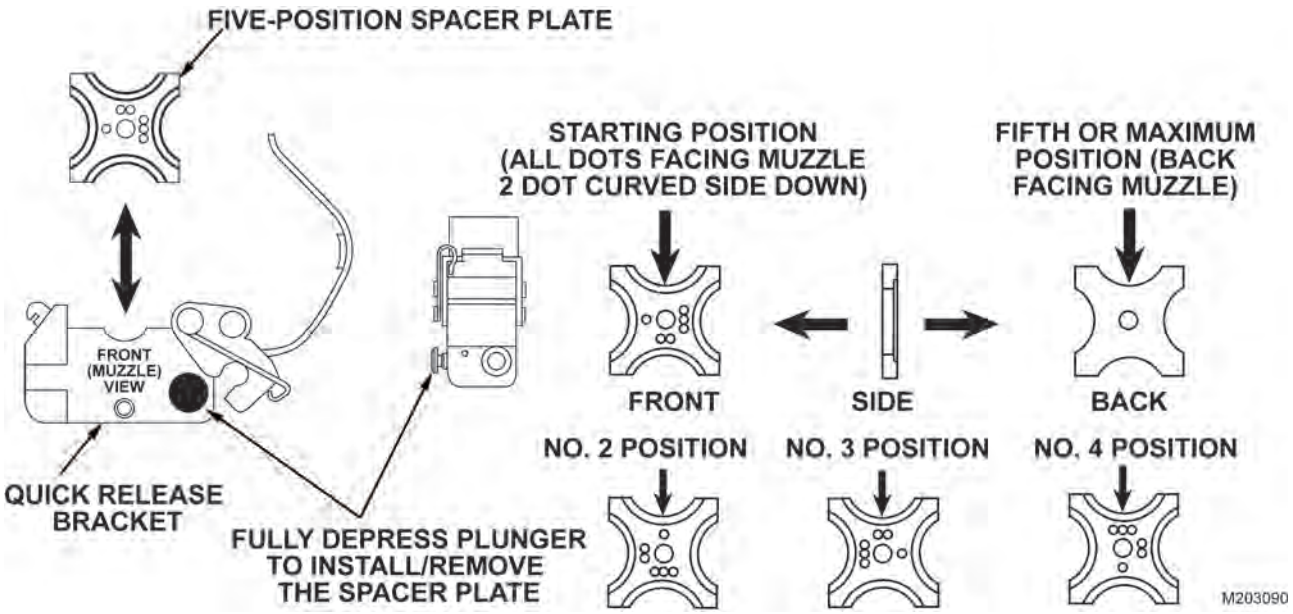


Figure 7. Quick Release Bracket Assembly — M4 Carbine.

2. Set the five-position spacer plate (Figure 9, Item 1) in the bracket (Figure 9, Item 2) to the minimum position as illustrated, with the 2 dots down and facing the muzzle.

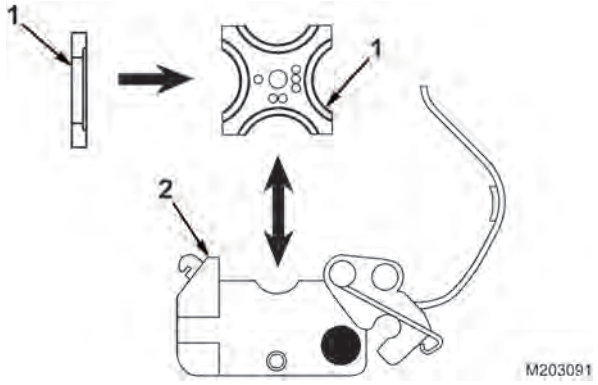


Figure 8. Positioning the Five-Position Spacer Plate — M4 Carbine.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

3. If present, remove the lower rail of the M4 adapter rail system from the M4 Carbine (Figure 9, Item 1) and install as follows:
   a. Move the rear of the M203A2 receiver (Figure 9, Item 2) into position around the carbine barrel.
   b. Confirm that the latch arm (Figure 9, Item 4) of the bracket is fully open.
   c. Rotate the muzzle end of the M203A2 towards the carbine barrel while sliding the M203A2 firmly to the rear.
   d. Confirm that the roll pin in the rear of the M203A2 receiver (Figure 9, Item 2) engages the carbine barrel nut at the six o'clock position notch.

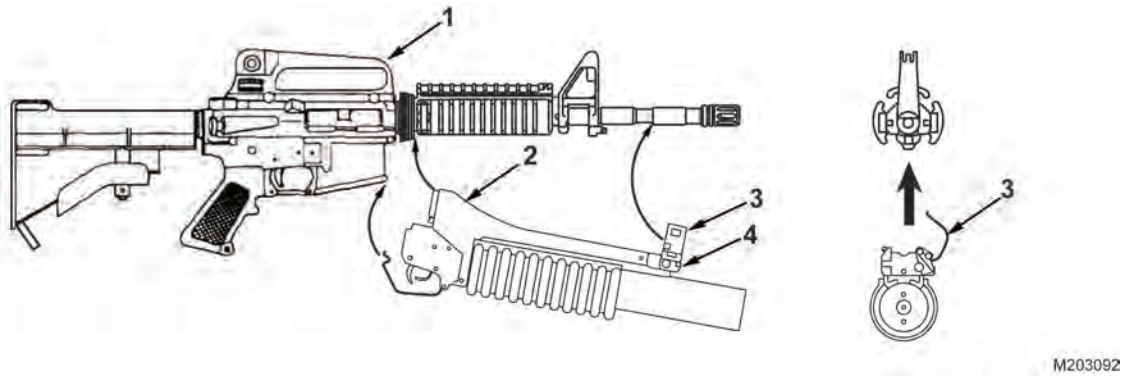


Figure 9. Mounting to M4 Carbine.

NOTE

- Endurance testing indicated that it may be necessary to switch to another spacer plate position after several thousand rounds have been fired. The armorer should check for excessive sliding motion each time the spacer plate is removed for cleaning/lubrication and the M203A2 re-mounted to the carbine.
- If during this step the cutout in the spacer plate does not fit behind the barrel shoulder, it is most probably inserted at its maximum thickness (no dots facing the muzzle), or position No. 2, No. 3, or No. 4.

4. Inspect the five-position spacer plate as follows:
   a. Firmly hold the M203A2 in position/back against the barrel nut of the carbine, while also holding the muzzle end of the M203A2 against the carbine's barrel.
   b. Look from the top of the carbine barrel, and also from the front. The inner notch of the spacer plate should rest behind the shoulder of the barrel (Figure 10).
   c. Now, try to slide the M203A2 back and forth if possible, and note the distance of any sliding motion. Some motion will be detectable with most carbine barrels with the spacer plate in its starting position.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

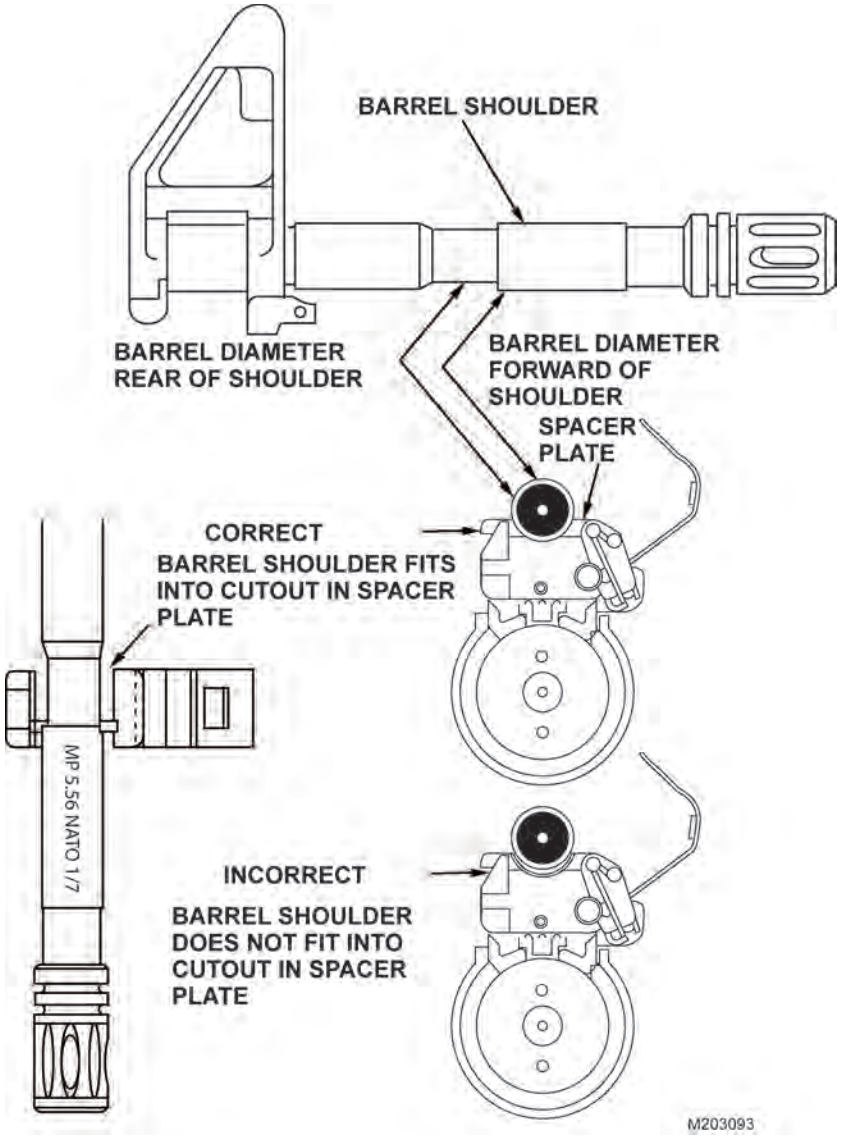


Figure 10. Barrel and Spacer Plate.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

NOTE

Note that the No. 2 position is indicated by a single dot stamped on its spacer plate cutout, and that this side of the spacer plate faces the muzzle.

5. Remove the M203A2 from the carbine. Depress the plunger (Figure 11, Item 3), withdraw the spacer plate and re-insert it in the No. 2 position.
6. Re-mount the M203A2 to the carbine's barrel nut and barrel shoulder. Attempt to slide the M203A2 from front to rear.

CAUTION

In its final motion, the latch lever may require very firm pressure against the bracket to allow the plunger to snap back into place, locking the latch lever closed. If necessary, use the buddy system. DO NOT use a vise or other mechanical device. Failure to comply may result in damage to the quick release bracket.

7. If forward and back motion is detected, repeat step 6 with the spacer plate in the No. 3 position. If the assembly is now too long (it will not engage behind the barrel shoulder, but rides up onto the barrel's major diameter), go back to the last position tried with the spacer plate, and complete the M203A2 attachment.

When the optimum position of the spacer plate is established:

a. If necessary, hold the retaining spring out of the way and depress the plunger (Figure 11, Item 3) to unlock the latch lever (Figure 11, Item 4).
b. Rotate the latch arm (Figure 11, Item 6) over the carbine barrel (Figure 11, Item 2).
c. Catch the hook (Figure 11, Item 5) in the hole of the latch arm (Figure 11, Item 6).
d. Rotate the latch lever (Figure 11, Item 4) down.
e. Depress the plunger (Figure 11, Item 3). Make sure the retaining spring does not engage the plunger during this step.
f. Squeeze the latch lever (Figure 11, Item 4) fully closed (which allows the plunger (Figure 11, Item 3) to be released and snap forward). This will hold the latch lever in the fully closed/locked position.
g. Rotate the M203A2 trigger guard (Figure 11, Item 1) to engage the lip of the magazine well.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

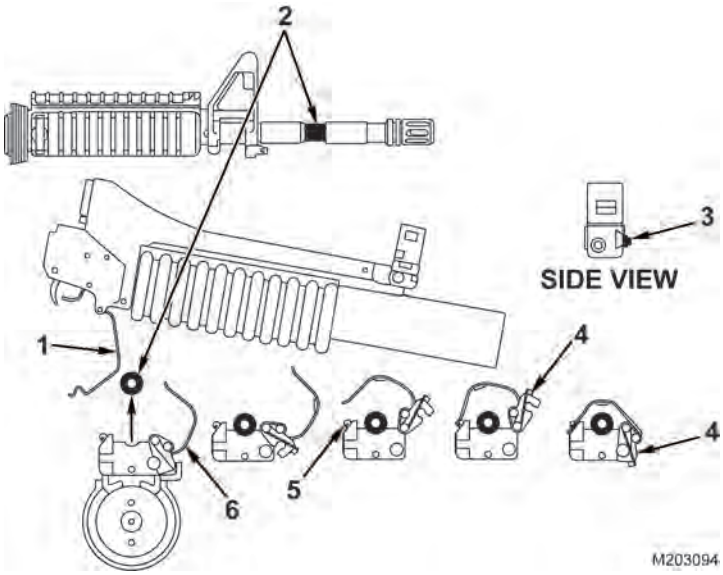


Figure 11. Attaching M203A2 — M4 Carbine.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

CAUTION

When detaching the M203A2 for cleaning, inspection, or lubrication, check and note the position of the spacer plate for ease of re-attachment. Failure to comply may result in weapon damage.

NOTE

The No. 4 position is indicated by three dots stamped adjacent to its spacer plate cutout, and that this side of the spacer plate faces the muzzle.

8. If forward and back motion is detected with the spacer plate (Figure 12, Item 1) set to its No. 3 notch, remove the M203A2 from the carbine. Depress the plunger (Figure 12, Item 2) to remove and re-insert the spacer plate in its No. 4 position.

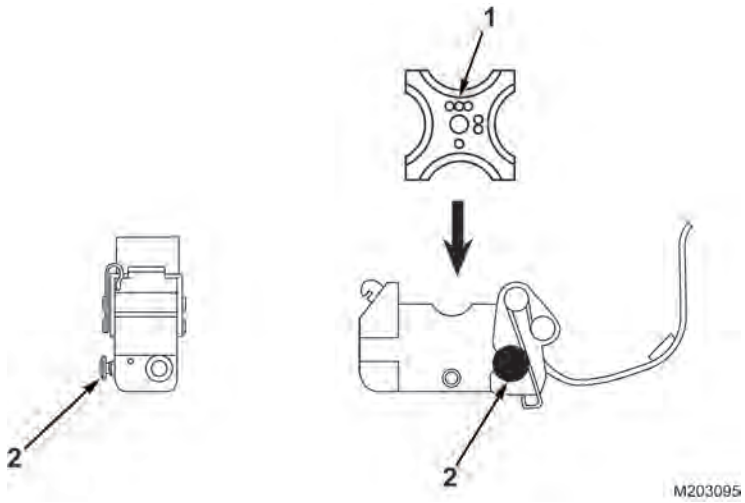


Figure 12. Five-Position Spacer Plate — No. 4 Position — M4 Carbine.

INSTALLATION - Continued

Mounting to the M4 Carbine - Continued

9. If the No. 5 or maximum position (backside of adjustment spacer plate faces muzzle) is required, depress the plunger (Figure 13, Item 2) remove and re-insert the spacer plate (Figure 13, Item 1).

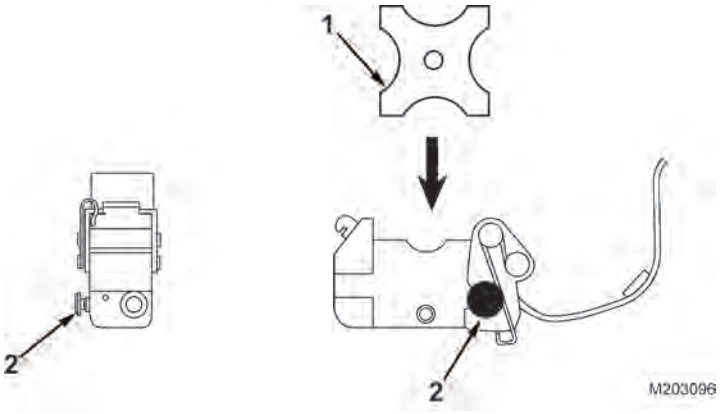


Figure 13. Five-Position Spacer Plate — No. 5 Position — M4 Carbine.

Mounting to the M16A4 Series Rifle

Principle of the Five-Position Spacer Plate.

The basic overall length between the barrel nut roll pin at the rear of the receiver, and the starting position spacer plate cutout surface at the front, is approximately 11 in. (27.94 cm). As noted in step 4, some sliding motion may be detectable between the rifle barrel stop and the front of the five-position spacer plate at the starting, or minimum, overall length cutout position.

Subsequent re-insertion of the five-position spacer plate to its No. 2, No. 3, No. 4, or maximum (fifth) length position will slightly increase the overall length of the assembly beyond the basic 11 in. (27.94 cm), and therefore tend to minimize or eliminate any sliding motion between the barrel stop and the five-position spacer plate.

The following steps describe checking for sliding motion with the next or No. 2 notch up, and against the rifle barrel stop. If the No. 2 position does not minimize the sliding motion, repeat the procedure with the No. 3 notch up and so on. If the fifth or maximum position is desired, note that the "back" or smooth face of the spacer plate is oriented towards the muzzle. Do not be concerned if only a small amount of sliding motion is still detectable with the spacer plate in its apparently optimum setting, because the latch arm will compensate for this when it is closed and locked.

INSTALLATION - Continued

Mounting to the M16A4 Series Rifle - Continued

NOTE

Endurance testing indicated that it may be necessary to switch to another spacer plate position after several thousand rounds have been fired. The armorer should check for excessive sliding motion each time the spacer plate is removed for cleaning/lubrication and the M203A2 re-mounted to the rifle.

1. Compare the illustration with the quick release bracket for the purpose of familiarization with all positions of the five-position spacer plate:

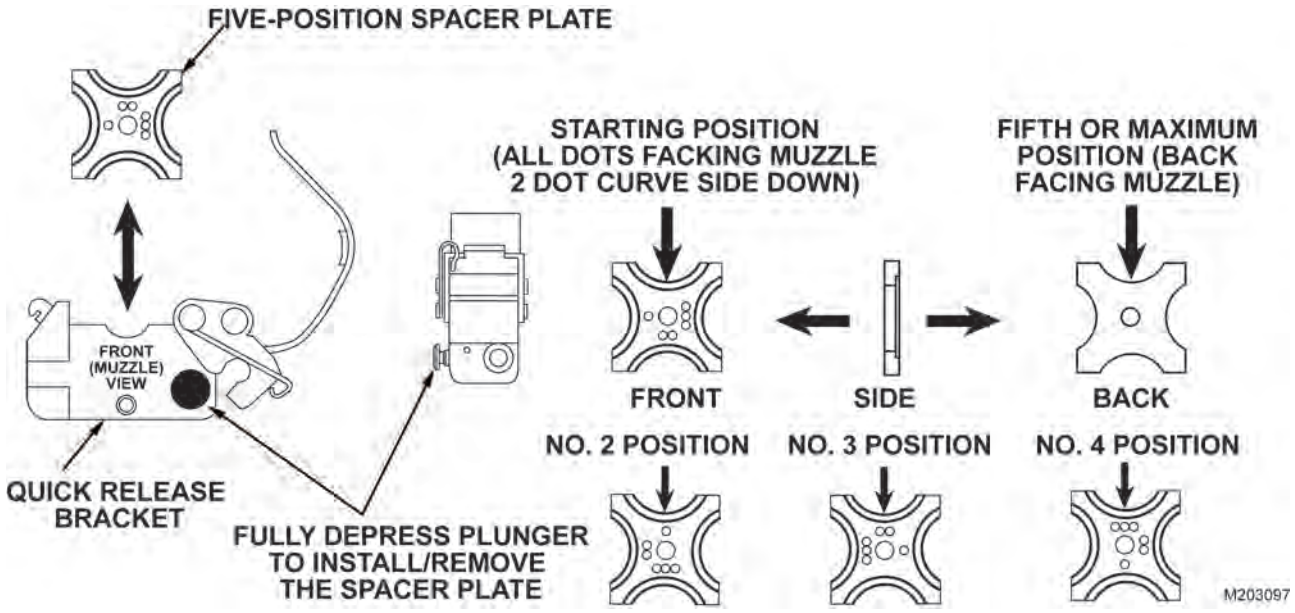


Figure 14. Quick Release Bracket Assembly — M16A4.

2. Set the five-position spacer plate (Figure 15, Item 1) in the bracket (Figure 15, Item 2) to the minimum position as illustrated, with the 2 dots down and facing the muzzle.

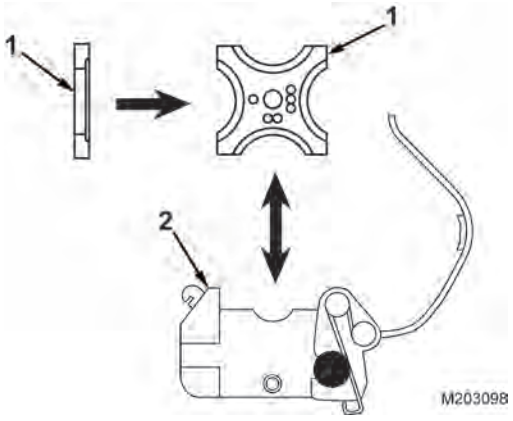


Figure 15. Positioning the Five-Position Spacer Plate — M16A4.

INSTALLATION - Continued

Mounting to the M16A4 Series Rifle - Continued

3. If present, remove the lower rail of the M5 adapter rail system from the M16A4 Rifle (Figure 16, Item 1) and install as follows:
   a. Confirm that the barrel stop is installed inside the hand guard cap.
   b. Move the rear of the M203A2 receiver (Figure 16, Item 2) into position around the rifle barrel.
   c. Confirm that the latch arm (Figure 16, Item 3) of the bracket (Figure 16, Item 4) is fully open.
   d. Rotate the muzzle end of the M203A2 towards the rifle barrel while sliding the M203A2 firmly to the rear.
   e. Confirm that the roll pin in the rear of the M203A2 receiver (Figure 16, Item 2) engages the rifle barrel nut at the six o'clock position notch.

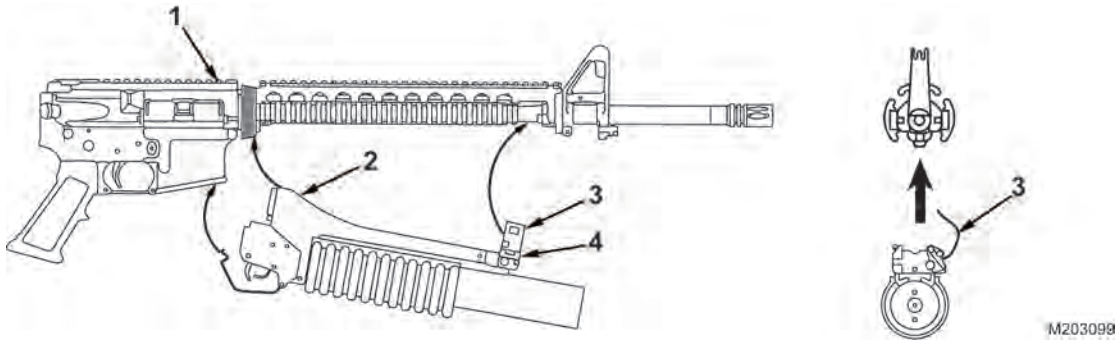


Figure 16. Mounting to M16A4.

4. Firmly hold the M203A2 in position/back against the barrel nut of the rifle, while also holding the muzzle end of the M203A2 against the rifle's barrel stop. Now, try to slide the M203A2 back and forth if possible, and note the distance of any sliding motion. Some motion may be detectable with the spacer plate in its starting position.

INSTALLATION - Continued

Mounting to the M16A4 Series Rifle - Continued

NOTE

The No. 2 position is indicated by a single dot stamped on its spacer plate cutout, and that this side of the spacer plate faces the muzzle.

5. Remove the M203A2 from the rifle. Depress the plunger (Figure 17, Item 2), withdraw the spacer plate, and re-insert it in the No. 2 position.
6. Re-mount the M203A2 to the rifle's barrel nut and barrel stop. Attempt to slide the M203A2 from front to rear.

CAUTION

In its final motion, the latch lever may require very firm pressure against the bracket to allow the plunger to snap back into place, locking the latch lever closed. If necessary, use the buddy system. DO NOT use a vise or other mechanical device. Failure to comply may result in damage to the quick release bracket.

7. If forward and back motion is detected, repeat step 6 with the No. 3 notch against the rifle barrel stop. If the assembly is now too long (it will not engage behind the barrel stop), go back to the last position tried with the spacer plate, and complete the M203A2 attachment as described next.

When the optimum position of the spacer plate is established:

a. Carefully work the latch arm (Figure 17, Item 5) between the rifle barrel and the gas tube.

b. Hold the retaining spring away from the plunger (Figure 17, Item 2) and depress the plunger to unlock the latch lever (Figure 17, Item 3).

c. Catch the hook (Figure 17, Item 4) in the hole of the latch arm (Figure 17, Item 5).

d. Rotate the latch lever (Figure 17, Item 3) down.

e. Depress the plunger (Figure 17, Item 2). Ensure the retaining spring does not engage the plunger during this step.

f. Squeeze the latch lever (Figure 17, Item 3) fully closed which allows the plunger (Figure 17, Item 2) to be released and snap forward. This will hold the latch lever in the fully closed/locked position.

g. Rotate the M203A2 trigger guard (Figure 17, Item 1) to engage the lip of the magazine well.

INSTALLATION - Continued

Mounting to the M16A4 Series Rifle - Continued

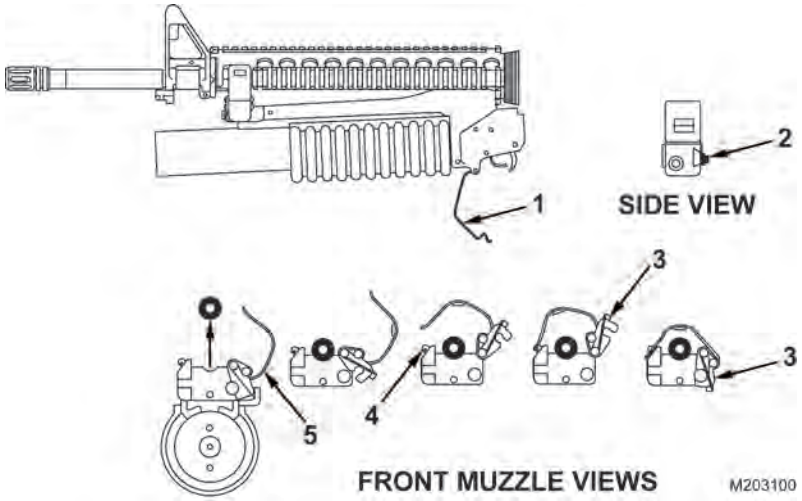


Figure 17. Attaching M203A2 — M16A4.

NOTE

The No. 4 position is indicated by three dots stamped adjacent to its spacer plate cutout, and that this side of the spacer plate faces the muzzle.

8. If forward and back motion is detected with the spacer plate (Figure 18, Item 1) set to its No. 3 notch, remove the M203A2 from the rifle. Depress the plunger (Figure 18, Item 2) to remove and re-insert the spacer plate in its No. 4 position.

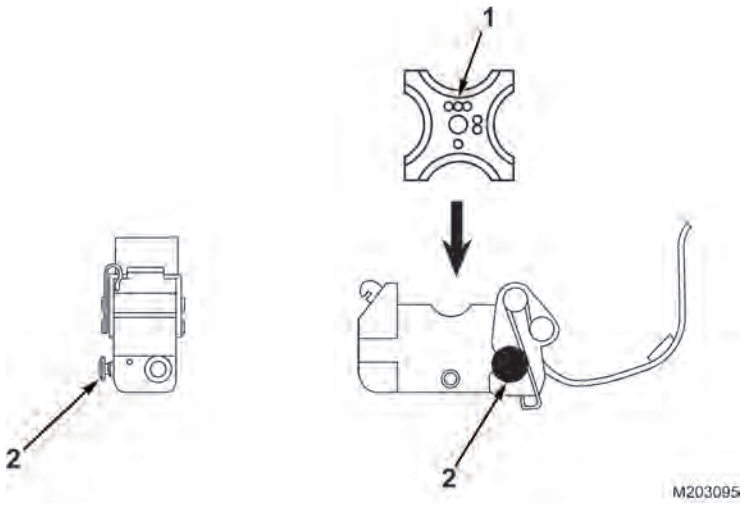


Figure 18. Five-Position Spacer Plate — No. 4 Position — M16A4.

INSTALLATION - Continued

Mounting to the M16A4 Series Rifle - Continued

CAUTION

When detaching the M203A2 for cleaning, inspection, or lubrication, check and note the position of the spacer plate for ease of re-attachment. Failure to comply may result in weapon damage.

9. If the No. 5 maximum position (backside of adjustment spacer plate faces the muzzle) is required, depress plunger (Figure 19, Item 2) to remove and re-insert the spacer plate (Figure 19, Item 1).

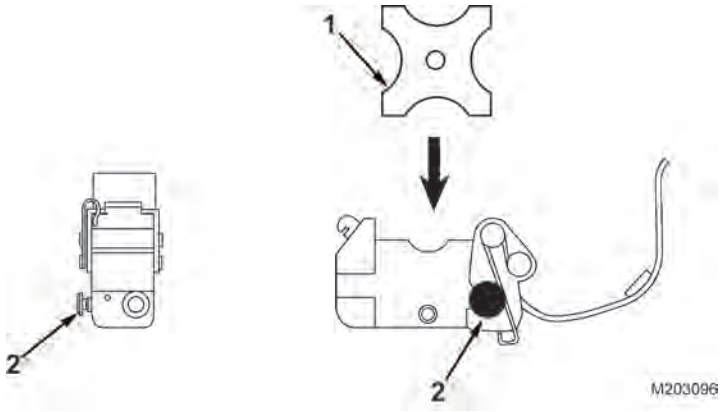


Figure 19. Five-Position Spacer Plate — No. 5 Position — M16A4.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
QUICK RELEASE BRACKET MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Materials/Parts
Cleaning Solvent (WP 0041, Table 1, Item 15)
Headless Pin (WP 0026, Figure 4, Item 6) Qty: 1
Socket Head Cap Screw (WP 0025, Figure 3, Item 2) Qty: 2

Materials/Parts (cont.)
Spring Pin (WP 0026, Figure 4, Item 4) Qty: 1
Lubricating Oil (WP 0041, Table 1, Item 22)

Personnel Required
(2)

Equipment Condition
Remove M203A2 grenade launcher from host weapon (WP 0011)

REMOVAL

1. Use a 5/32 in. hexagonal wrench to remove each socket head cap screw (Figure 1, Item 1) from the quick release bracket (Figure 1, Item 2). Discard socket head cap screws.
2. Remove the quick release bracket (Figure 1, Item 2) from the M203A2.

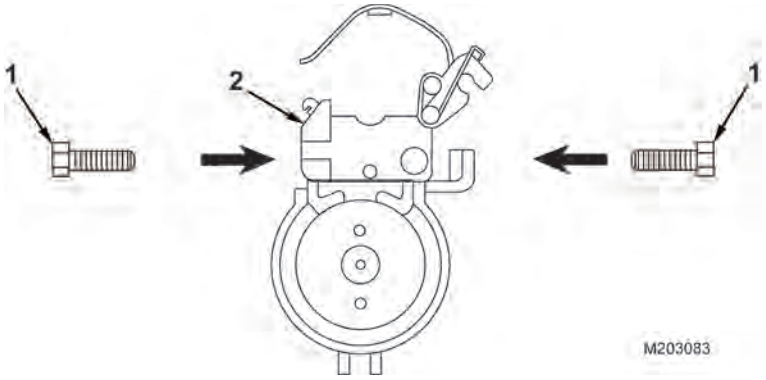


Figure 1. Quick Release Bracket.

END OF TASK

DISASSEMBLY

1. Remove the five-position spacer plate (Figure 2, Item 1) from the quick release bracket (Figure 2, Item 2).

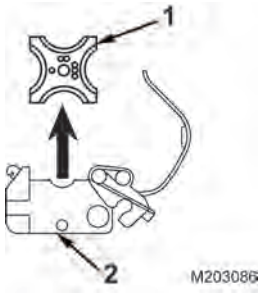


Figure 2. Five-Position Spacer Plate.

2. Remove the right half base (Figure 3, Item 1) from the quick release bracket (Figure 3, Item 2) by sliding it off the left bracket assembly dovetail (Figure 3, Item 3).

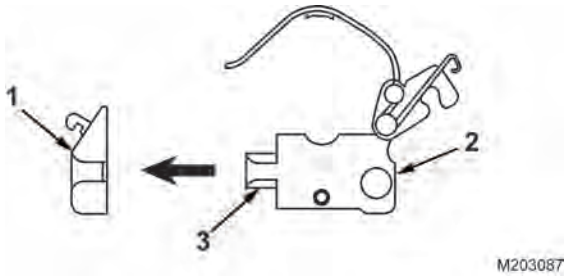


Figure 3. Right Half Base.

3. Secure the left bracket assembly (Figure 4, Item 2) in a vise.
4. Remove the retaining spring (Figure 4, Item 1) from the left bracket assembly (Figure 4, Item 2).

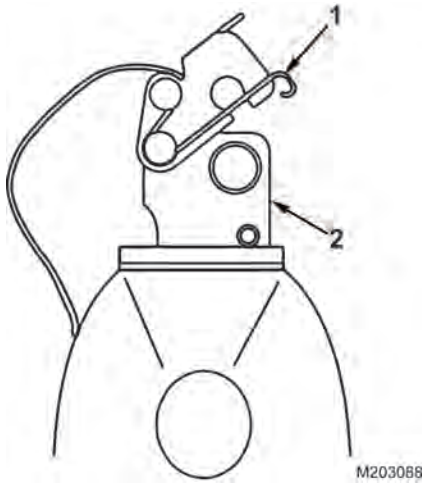


Figure 4. Retaining Spring.

DISASSEMBLY - Continued

NOTE

The plunger is under spring pressure. Ensure the plunger is facing away from you.

5. Use a 1/16 in. punch to remove the spring pin (Figure 5, Item 2) which retains the plunger (Figure 5, Item 1) within the left bracket assembly (Figure 5, Item 4). Remove the plunger and the compression spring from the left bracket assembly. Discard spring pin.
6. Use a 3/32 in. punch to remove the spring pin (Figure 5, Item 3) from left bracket assembly (Figure 5, Item 4) only when replacing it.

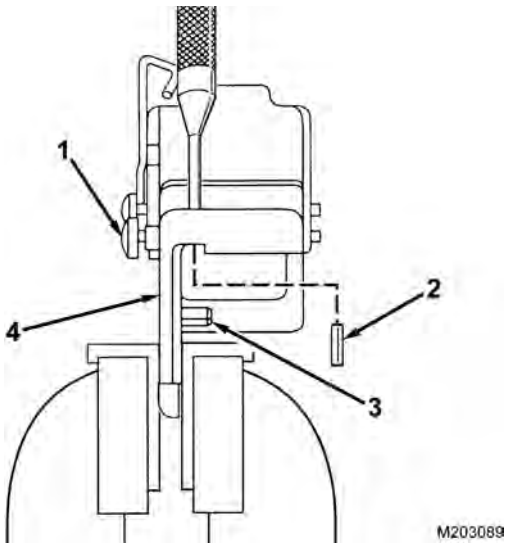


Figure 5. Plunger.

END OF TASK

CLEANING

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

1. Use cleaning solvent to thoroughly clean the quick release bracket, paying special attention to the pivot points of the latch arm and latch lever. This will ensure the quick release bracket operates correctly.
2. Use cleaning solvent to thoroughly clean the front mount receiving area of the receiver, and particularly the screw holes and their threads.
3. Use cleaning solvent to thoroughly clean the two socket head cap screws, the right half base, and the left bracket assembly.

END OF TASK

INSPECTION/REPAIR

1. Visually inspect the quick release bracket for broken, corroded, or missing parts.
2. Repair the quick release bracket by replacing any broken, corroded, or missing parts.

END OF TASK

LUBRICATION

Use lubricating oil to lightly lubricate the quick release bracket surface areas. Generously lubricate the latch arm, latch lever, plunger, and the five-position spacer plate. Be sure to generously lubricate all pivot points on the latch arm and latch lever.

END OF TASK

ASSEMBLY

NOTE

Before inserting spring pin, ensure the plunger is fully depressed.

1. Secure the left bracket assembly (Figure 6, Item 4) in a vise.
2. Use a 3/32 in. punch to install the new spring pin (Figure 6, Item 3), if removed.
3. Insert the compression spring and the plunger (Figure 6, Item 1) into the left bracket assembly (Figure 6, Item 4). Use a 1/16 in. punch to install the new spring pin (Figure 6, Item 2) which retains the plunger within the left bracket assembly.

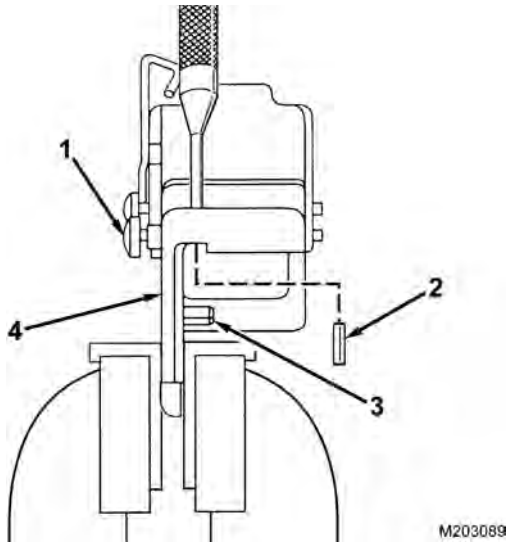


Figure 6. Plunger.

4. Install the retaining spring (Figure 7, Item 1) on the left bracket assembly (Figure 7, Item 2).
5. Remove the left bracket assembly (Figure 7, Item 2) from the vise.

ASSEMBLY - Continued

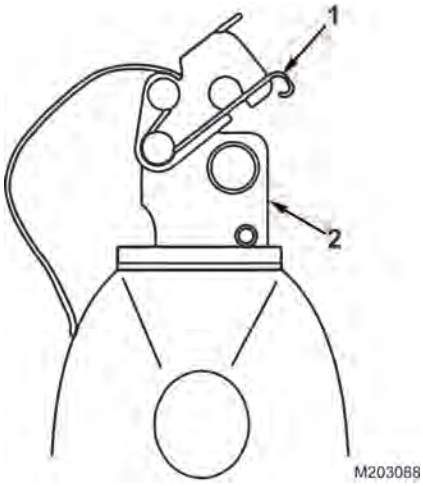


Figure 7. Retaining Spring.

6. Install the right half base (Figure 8, Item 1) on the left bracket assembly (Figure 8, Item 2) by sliding it onto the left bracket assembly dovetail (Figure 8, Item 3).

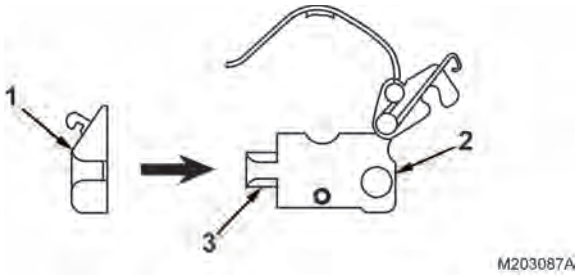


Figure 8. Right Half Base.

7. Insert the five-position spacer plate (Figure 9, Item 1) into the quick release bracket assembly (Figure 9, Item 2).

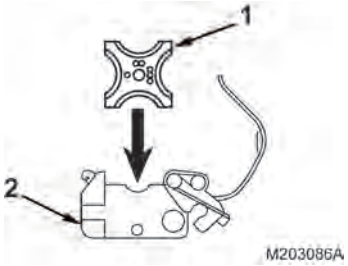


Figure 9. Five-Position Spacer Plate.

END OF TASK

INSTALLATION

CAUTION

Before the quick release mount is installed on the M203A2 receiver, both ends of the hole for the M203A2 barrel stop pin must be staked to prevent loss of the headless pin. Failure to comply may result in damage to equipment.

1. Slide the quick release bracket (Figure 10, Item 1) onto the forward mount area of the receiver (Figure 10, Item 2). Make sure the quick release bracket is perpendicular to the receiver during this procedure.

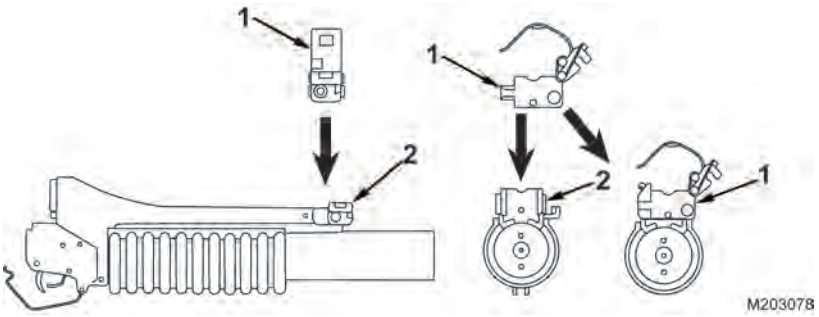


Figure 10. Quick Release Bracket.

2. The purpose of this procedure is to determine if spring washers (Figure 11, Item 4) will be required. In most cases, spring washers will not be required because the five-position spacer plate will be retained within the bracket by the plunger (Figure 11, Item 3), but can be pulled from the groove using finger pressure while the plunger is fully depressed. Do not use spring washers at this time. Assemble the bracket to the receiver as follows:

   a. Start each new socket head cap screw (Figure 11, Item 1), then tighten with a 5/32 in. hexagonal wrench until each screw head is just below flush.

   b. Continue to tighten each screw (Figure 11, Item 1) until there is no play or movement between the bracket and the receiver.

   c. If you are unable to remove the spacer plate, some minor loosening of the screws (Figure 11, Item 1) is allowable in this procedure as long as there is no play or movement between the bracket and the receiver.

NOTE

- If you are unable to tighten the screws enough to completely eliminate play or movement between the bracket and the receiver, the threaded inserts in the receiver might be damaged. Contact maintenance supervisor to correct this condition.
- Do not use more than two spring washers. This may result in loss of the spacer plate. Loss of the spacer plate makes the M203A2 non-mission capable. If loss occurs, the spacer plate should be replaced as quickly as possible.

   d. If minor loosening of the screws (Figure 11, Item 1) does not result in both the retention of the spacer plate, and the ability to remove the spacer plate while the plunger (Figure 11, Item 3) is depressed, install one spring washer (Figure 11, Item 4) between the receiver and the right half base. Ensure the screw passes through the hole in the spring washer to prevent breakage of the spring washer. If you are still unable to remove the spacer plate with your fingers while depressing the plunger, install the second spring washer between the receiver and the left bracket assembly (Figure 11, Item 2). If you are unable to remove the spacer plate with your fingers after installing both washers, the receiver may be undersized and require replacement.

INSTALLATION - Continued

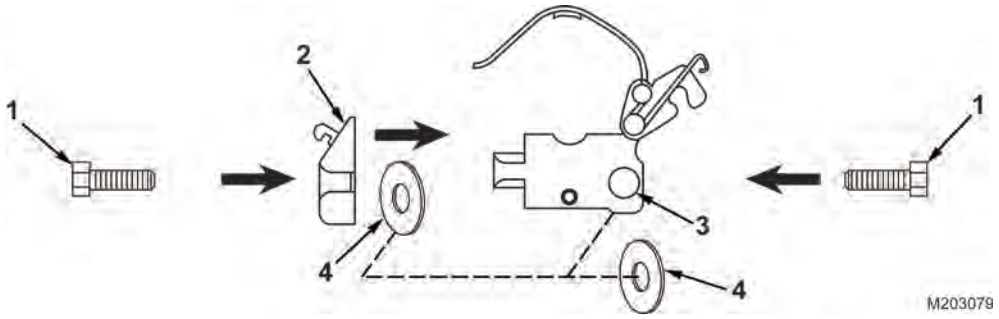


Figure 11. Quick Release Bracket to Receiver.

NOTE

A new set of socket head cap screws (and spring washers if needed) must be used each time the quick release bracket is installed on the M203A2.

3. Insert two socket head cap screws (Figure 12, Item 1) in the quick release bracket (Figure 12, Item 2) as shown.

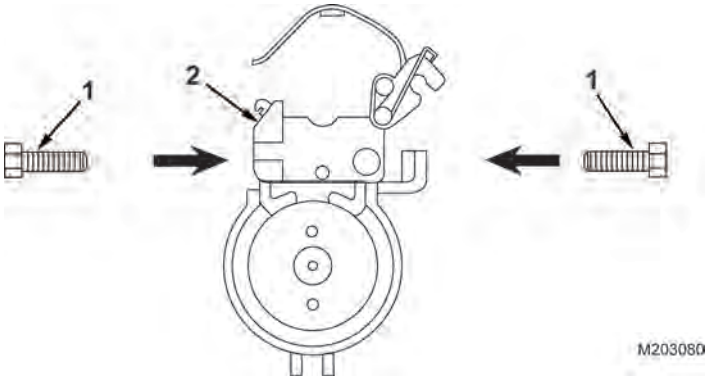


Figure 12. Socket Head Cap Screws.

INSTALLATION - Continued

4. Install the five-position adjustment spacer plate (Figure 13, Item 4) while noting the dot pattern on the front face of the spacer plate. The dot pattern should face the muzzle, and the side with 2 dots should be inserted down. Close and lock the latch arm (Figure 13, Item 2) and latch lever (Figure 13, Item 3). It may be necessary to depress the plunger (Figure 13, Item 1) to allow the latch lever to lock. This should keep the spacer plate from falling free of the assembly.

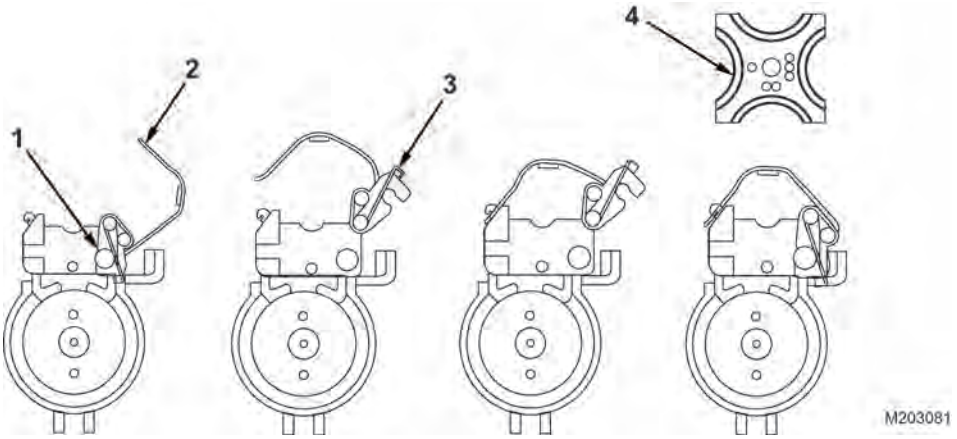


Figure 13. Five-Position Spacer Plate.

NOTE

The dot pattern on the five-position spacer plate shown. This side should face the muzzle when initially installed on the M203A2. Also note that the curved side with 2 dots is inserted down.

5. Installation of the quick release bracket (Figure 14, Item 2) to the receiver (Figure 14, Item 1) is now complete.

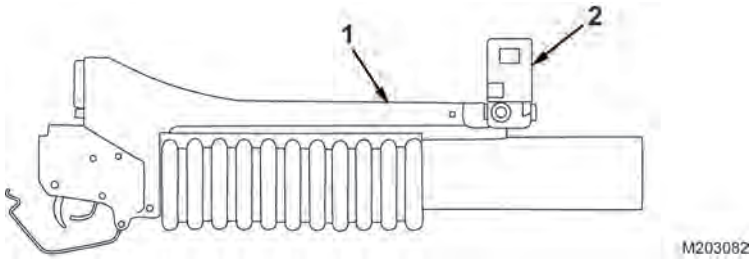


Figure 14. Quick Release Bracket Installation Complete.

END OF TASK

FOLLOW-ON TASK

Install M203A2 grenade launcher to host weapon (WP 0011).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LEAF SIGHT ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Materials/Parts
Spring Pin (WP 0023, Figure 6, Item 8) Qty: 1
Lockwasher (WP 0028, Figure 6, Item 2) Qty: 1
Cleaner, Lubricant, and Preservative (CLP) (WP 0041, Table 1, Item 8)

Materials/Parts (cont.)
Cleaning Solvent (WP 0041, Table 1, Item 15)
Rubber Gloves (WP 0041, Table 1, Item 18)
Wiping Rag (WP 0041, Table 1, Item 27)

Equipment Condition
Leaf sight assembly removed from hand guard (WP 0010)
Leaf sight assembly removed from rail grabber assembly (WP 0010)

DISASSEMBLY

NOTE

Disassemble only to replace unserviceable components.

1. Remove machine screw (Figure 1, Item 1), lockwasher (Figure 1, Item 2), and front folding sight leaf (Figure 1, Item 3 or 9). Discard lockwasher.
2. Remove spring pin (Figure 1, Item 8) and flat washer (Figure 1, Item 7) from sight windage screw (Figure 1, Item 5). Discard spring pin.
3. Unscrew sight windage screw (Figure 1, Item 5) from sight leaf mount (Figure 1, Item 4) and sight leaf base (Figure 1, Item 6).

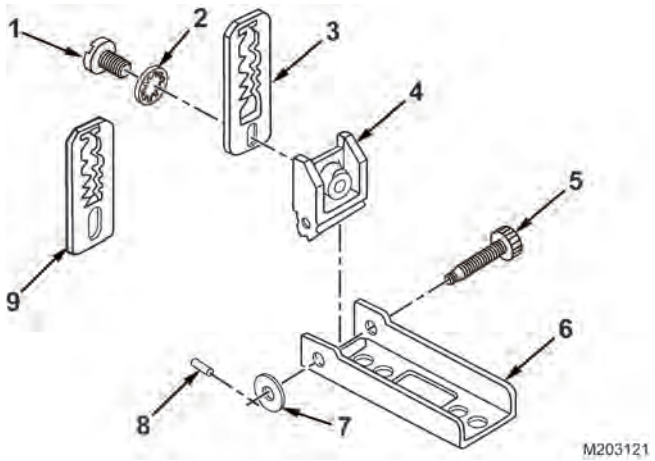


Figure 1. Leaf Sight Assembly.

END OF TASK

CLEANING/INSPECTION/REPAIR

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

1. Clean front folding sight leaf with solvent cleaning compound and wiping rag.
2. Inspect all parts for serviceability.
3. Replace all authorized unserviceable parts.

END OF TASK

ASSEMBLY

NOTE

Lubrication is accomplished during assembly.

1. Lubricate all parts with Cleaner, Lubricant, and Preservative (CLP).
2. Place sight leaf mount (Figure 2, Item 4) in sight leaf base (Figure 2, Item 6) and align holes as illustrated.
3. Insert and screw in sight windage screw (Figure 2, Item 5) through holes in sight leaf base and sight leaf mount. Secure sight windage screw with flat washer (Figure 2, Item 7) and new spring pin (Figure 2, Item 8).
4. Line up hole in front folding sight leaf (Figure 2, Items 3 or 9) with hole in sight leaf mount (Figure 2, Item 4). Secure with new lockwasher (Figure 2, Item 2) and machine screw (Figure 2, Item 1).

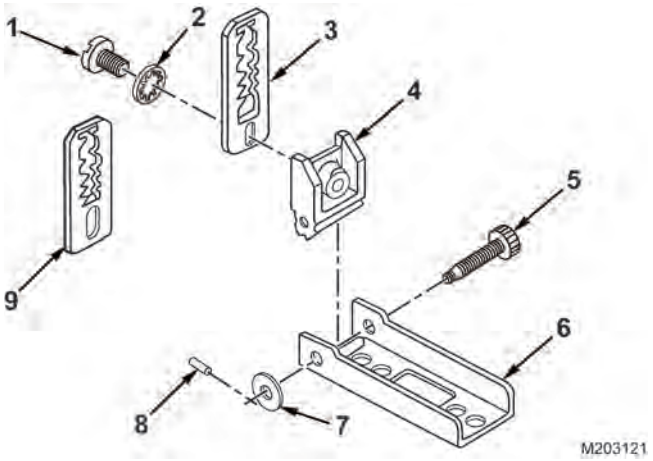


Figure 2. Leaf Sight Assembly.

END OF TASK

FOLLOW-ON MAINTENANCE

Reinstall leaf sight assembly to hand guard assembly (WP 0010).
Reinstall leaf sight assembly to rail grabber assembly (WP 0010).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
BARREL ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
- Barrel Extension Staking Support Tool (WP 0042, Table 1, Item 1)
- Bore Constriction Tool (WP 0042, Table 1, Item 2)
- Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
- Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Materials/Parts
- Adhesive (WP 0041, Table 1, Item 1)
- Cleaner, Lubricant, and Preservative (CLP) (WP 0041, Table 1, Item 8)
- Cleaning Solvent (WP 0041, Table 1, Item 15)
- Compression Helical Spring (WP 0029, Figure 7, Item 2) Qty: 1

Materials/Parts (cont.)
- Rubber Gloves (WP 0041, Table 1, Item 18)
- Penetrant Kit (WP 0041, Table 1, Item 25)
- Wiping Rag (WP 0041, Table 1, Item 27)

References
- TM 9-1010-221-10

Equipment Condition
- Barrel assembly removed from M203/M203A1 grenade launcher (WP 0010)
- Barrel assembly removed from M203A2 grenade launcher (WP 0011)

DISASSEMBLY

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

NOTE

- Disassemble only to replace unserviceable components.
- Cartridge locator and/or compression helical spring may have to be replaced if there is no spring tension when the cartridge locator is depressed.
- A file may have to be used to remove staked metal. Prying of the barrel extension may be required.

Disassemble staked barrel extension (Figure 1, Item 1), cartridge locator (Figure 1, Item 3), and compression helical spring (Figure 1, Item 2) from barrel (Figure 1, Item 4). Discard compression helical spring.

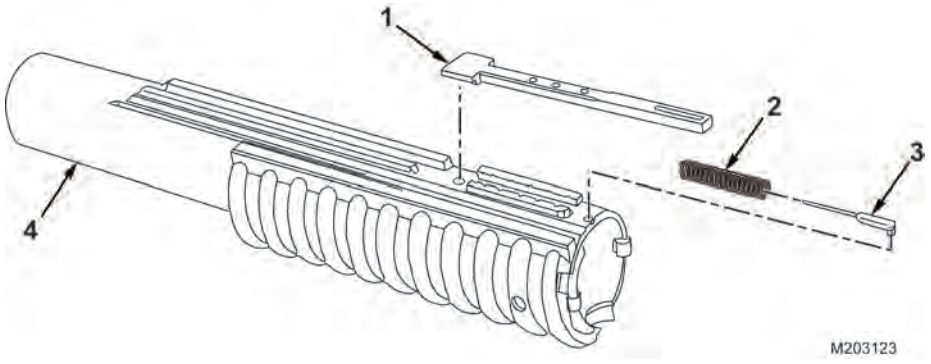


Figure 1. Barrel Assembly.

END OF TASK

CLEANING

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

CLEANING - Continued

WARNING

CLEANER, LUBRICANT, AND PRESERVATIVE (CLP)

1. Clean components thoroughly of all grease, oil, water, and any excessive adhesive using cleaning solvent. After cleaning, dry all parts with a wiping rag.
2. Clean bore and chamber with bore brush (TM 9-1010-221-10).

END OF TASK

INSPECTION/REPAIR

1. Check to see if barrel extension has previously been restaked. If it has been restaked previously, a new barrel extension is necessary.
2. Inspect the bore of the barrel (Figure 2, Item 3) for pitting and erosion. Fine pits are allowed. If pits are wider than the lands or grooves and are over 0.38 in. (0.97 cm) in length, replace barrel.
3. Use bore constriction check tool (Figure 2, Item 1) to detect dents and minor damage that would interfere with forward progress of fired projectile. Tool must pass freely through entire barrel bore. If it does not pass freely, the barrel is unserviceable and must be replaced.
4. Visually inspect cartridge locator (Figure 2, Item 2) for burrs, pits, and cracks. Replace if necessary.

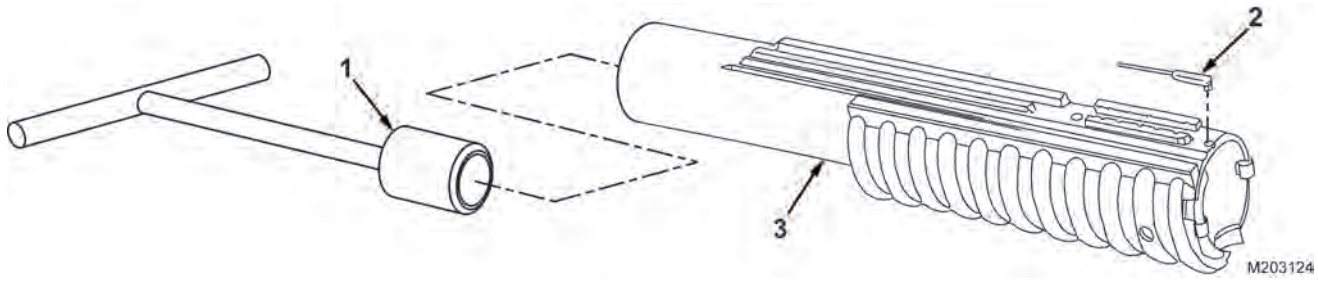


Figure 2. Barrel Assembly Bore.

5. Inspect barrel extension (Figure 3, Item 1) for burrs, pits, and cracks using penetrant kit as follows:

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

a. Make sure area to be inspected is clean, free of oil, etc. by using cleaning solvent. Spray a small amount of remover in penetrant kit on the area to be inspected, let it dry, and wipe with a wiping rag.

b. Spray penetrant to wet component to be inspected.

c. Spray developer over penetrant and let it work. Wherever there is a crack, there will be a change in color. If there are cracks, the component is unserviceable.

d. If no cracks are indicated, spray remover on area. Let dry, and wipe with a wiping rag.

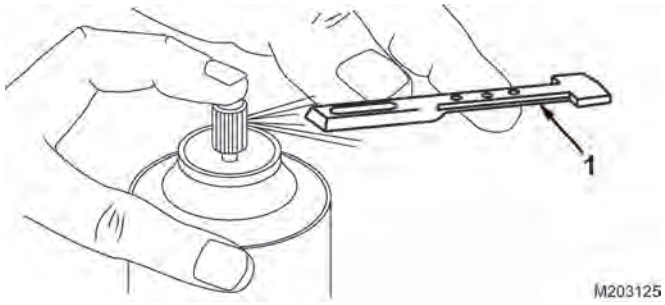


Figure 3. Barrel Extension.

INSPECTION/REPAIR - Continued

NOTE

Replace handgrip assembly if it is cracked or has broken cartridge retainers. Reinstall serviceable handgrip assembly if it is loose from the barrel.

6. Remove defective handgrip as follows:
   a. With barrel assembly laying so barrel extension is facing up, set external retaining ring pliers between edges of handgrip assembly where it contacts barrel, and spread.
   b. Do this in several locations up and down the length of handgrip assembly until handgrip adhesive and barrel separate.
   c. With pliers approximately at midpoint, spread handgrip assembly and carefully tap barrel out with rubber/plastic hammer.

NOTE

Early production barrels do not contain the locating rivet in the handgrip assembly or the locating recess in the barrel. If you have this type of barrel, discard it. Do not repair. The handgrip assembly has a locating rivet positioned near the center on the right side. The head of this rivet, on the inside of the handgrip assembly, enters into a small recess on the right side of the barrel.

7. Spread handgrip assembly away from the barrel sufficiently to release rivets from recess in barrel. Once released from rivet recesses, handgrip assembly should slide off under hand pressure.
8. Clean all the old adhesive from the barrel and dry thoroughly. If re-installing serviceable handgrip assembly, clean all the old adhesive from the handgrip and dry thoroughly.

END OF TASK

ASSEMBLY/LUBRICATION

1. Assemble handgrip assembly to barrel as follows:

NOTE

Take care not to dent or bend the barrel during the repair/reassembly process.

   a. Apply a uniform layer of adhesive to the inside of the new or serviceable handgrip assembly and to the outside surface of barrel. Allow applied adhesive to air dry until slightly tacky. Work the handgrip assembly onto the barrel from the rear, making sure to get the locating rivet head into the barrel locating recess.

   b. Clean all excessive adhesive from the assembled components.

   c. Firmly clamp the handgrip assembly in position and allow the adhesive to set at least 24 hours.

   d. Remove clamps. Assembly is now ready for use.

2. Wipe inside of barrel with wiping rag containing a small amount of Cleaner, Lubricant, and Preservative (CLP).

3. Apply light film of CLP to bore and outside of barrel.

4. Reassemble new compression helical spring (Figure 4, Item 1) and cartridge locator (Figure 4, Item 2) on barrel (Figure 4, Item 3).

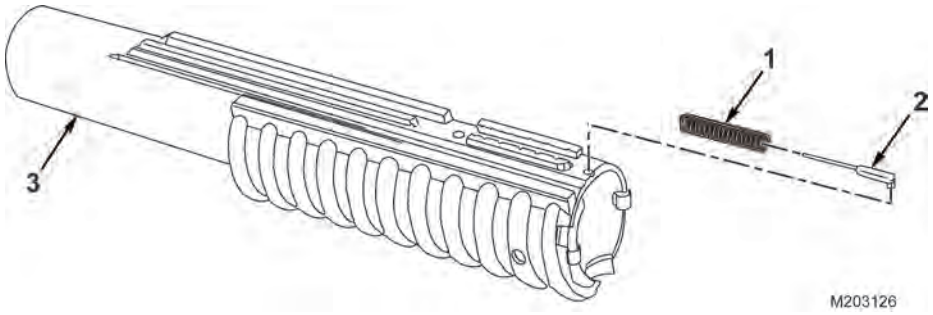


Figure 4. Helical Spring and Cartridge Locator.

5. For support, place barrel extension (Figure 5, Item 1) on barrel extension staking tool. Clamp and secure in a vise. Slide barrel (Figure 5, Item 2) chamber on barrel extension staking tool.

CAUTION

Do not stake over original staking. Failure to comply may result in weapon damage.

NOTE

Restake the barrel extension one time only.

6. Using a center punch, securely stake barrel extension (Figure 5, Item 1) to barrel (Figure 5, Item 2) four times on each side, between original stake marks.

7. Use bore constriction check tool to ensure barrel (Figure 5, Item 2) has not been dented.

ASSEMBLY/LUBRICATION - Continued

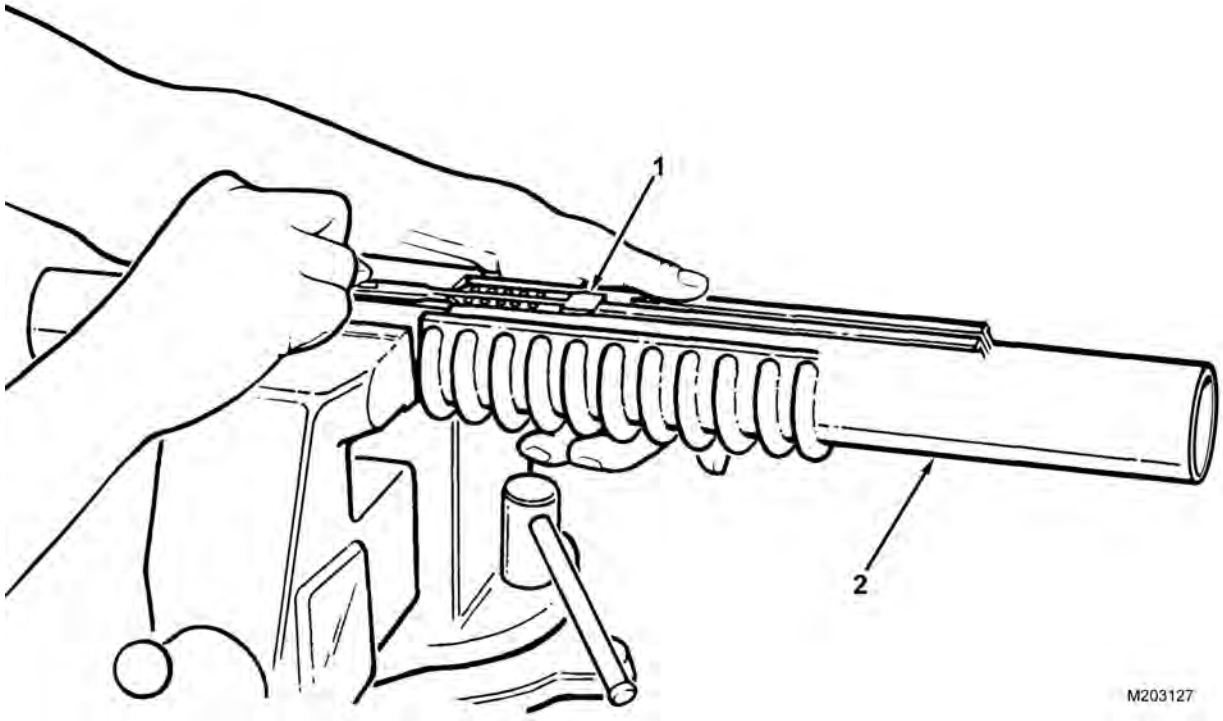


Figure 5. Barrel Extension.

END OF TASK

FOLLOW-ON TASK

Reinstall M203/M203A1 barrel assembly (WP 0010).
Reinstall M203A2 barrel assembly (WP 0011).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
RECEIVER ASSEMBLY MAINTENANCE

INITIAL SETUP:

Test Equipment
- Firing Pin Protrusion Gage (WP 0040, Table 2, Item 1)
- Trigger Pull Measuring Fixture (WP 0042, Table 1, Item 3)

Tools and Special Tools
- Slave Pin (WP 0021, Figure 2)
- Torque Wrench Adapter (WP 0040, Table 2, Item 2)
- Small Arm Tool Kit (Army only) (WP 0040, Table 2, Item 4)
- Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Materials/Parts
- Self-locking Screw (WP 0030, Figure 8, Item 6) Qty: 1
- Compression Helical Spring (WP 0030, Figure 8, Item 12) Qty: 1
- Compression Helical Spring (WP 0030, Figure 8, Item 16) Qty: 1
- Compression Helical Spring (WP 0030, Figure 8, Item 17) Qty: 1
- Compression Helical Spring (WP 0030, Figure 8, Item 24) Qty: 1
- Compression Helical Spring (WP 0030, Figure 8, Item 27) Qty: 1
- Compression Helical Spring (WP 0030, Figure 8, Item 32) Qty: 1

Materials/Parts (cont.)
- Cleaner, Lubricant, and Preservative (CLP) (WP 0041, Table 1, Item 8)
- Pipe Cleaner (WP 0041, Table 1, Item 11)
- Cleaning Solvent (WP 0041, Table 1, Item 15)
- Rubber Gloves (WP 0041, Table 1, Item 18)
- Solid Film Lubricant (SFL) (WP 0041, Table 1, Item 21)
- Penetrant Kit (WP 0041, Table 1, Item 25)
- Surface Primer (WP 0041, Table 1, Item 26)
- Wiping Rag (WP 0041, Table 1, Item 27)
- Sealing Compound Devcon F (WP 0041, Table 1, Item 28)
- Thread Locking Adhesive (WP 0041, Table 1, Item 29)

References
- TM 05538/10012-IN
- TM 9-1005-249-10
- TM 9-1005-319-10
- TM 9-1010-221-10
- WP 0014

Equipment Condition
- Grenade launcher cleared and cocked before starting disassembly procedures
- M203/M203A1 Grenade launcher removed from M16 Series Rifle/M4 Carbine (WP 0010)
- M203A2 Grenade launcher removed from M16A4/M4 Carbine (WP 0011)

DISASSEMBLY

CAUTION

Except for disassembly of the cartridge extractor and trigger guard, disassemble in the following order. Failure to comply may result in weapon damage.

NOTE

- Solid Film Lubricant (SFL) is the authorized touchup for the Grenade Launcher and may be used on up to one-third of the exterior finish of the weapon.
- FOR CONUS USE ONLY: SFL may be used as a touchup without limitation on the receiver assembly. This is to say that units which DO NOT fall under the category of Divisional Combat Units or Rapid-Deployment-type Units may have up to 100 percent of the exterior surface of the receiver assembly protected with SFL. Prior to application of SFL, the surface must be thoroughly cleaned and inspected for corrosion and/or damage. If corroded or damaged, the part must be repaired or replaced prior to application of SFL. Continued use under combat conditions would result in an unprotected surface when the SFL wears off. This would result in a large light-reflecting surface and accelerated deterioration of the unprotected surface. Therefore, Divisional Combat Units and units which fall under the definition of Rapid Deployment type must adhere to the limitation of NOT over one-third of their exterior surface covered by SFL.
- If a Grenade Launcher RECEIVER assembly is missing one-third or more of its exterior protective finish, resulting in an unprotected/light-reflecting surface, it is a candidate for overhaul. This missing finish will be considered a shortcoming. This shortcoming requires action to obtain a replacement weapon. Once a replacement has been received, evacuate the original weapon to depot for overhaul.
- Once the missing exterior protective finish of the receiver assembly has exceeded one-third of its total surface, the probability of reclaiming the receiver assembly during overhaul diminishes rapidly. In order to extend the life of the receiver assembly, which is the serial-numbered item, it is necessary to evacuate the weapon to depot once the missing finish reaches one-third of the total surface of the receiver assembly.
- Make sure that grenade launcher is cleared and cocked before starting disassembly procedures. Remove screw thread insert when required for repair.

NOTE

M203A1 requires removal of staking.

1. Remove headless straight pin (Figure 1, Item 3) to release torsion helical spring (Figure 1, Item 1) and barrel stop (Figure 1, Item 2).

DISASSEMBLY - Continued

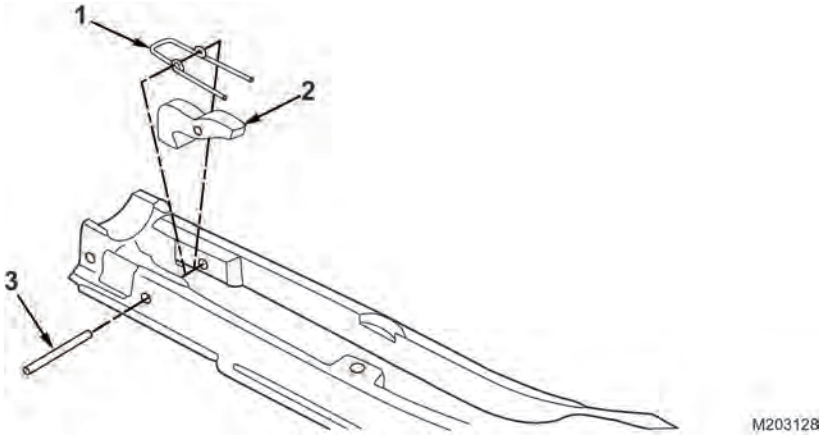


Figure 1. Helical Spring Removal.

NOTE

Remove headless straight pin only when barrel latch or compression helical spring requires replacement.

2. Remove headless straight pin (Figure 2, Item 1) to release barrel latch (Figure 2, Item 2) and compression helical spring (Figure 2, Item 3). Discard compression helical spring.

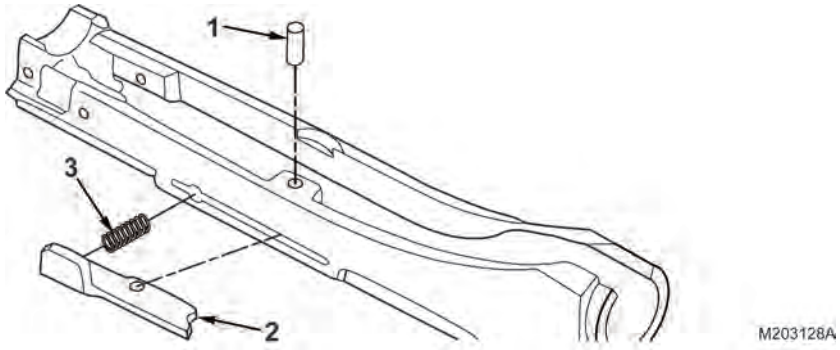


Figure 2. Barrel Latch and Compression Helical Spring Removal.

DISASSEMBLY - Continued

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

NOTE

The old part number for the back plate is 8448314, and the old part number for the follower guide assembly is 8448387. The current configuration of the back plate and follower guide assembly is shown. The previous configuration follower guide assembly contained a captured spring and detent, therefore it did not require a screw. The old type back plate and follower guide assembly only need to be replaced if defective. If the old configuration or either the back plate or the follower guide assembly requires replacement, both parts must be replaced, as old-to-new configurations are not compatible.

3. Remove and discard self-locking screw (Figure 3, Item 1) from back plate (Figure 3, Item 2). Remove back plate and follower guide assembly (Figure 3, Item 3) from receiver (Figure 3, Item 4).

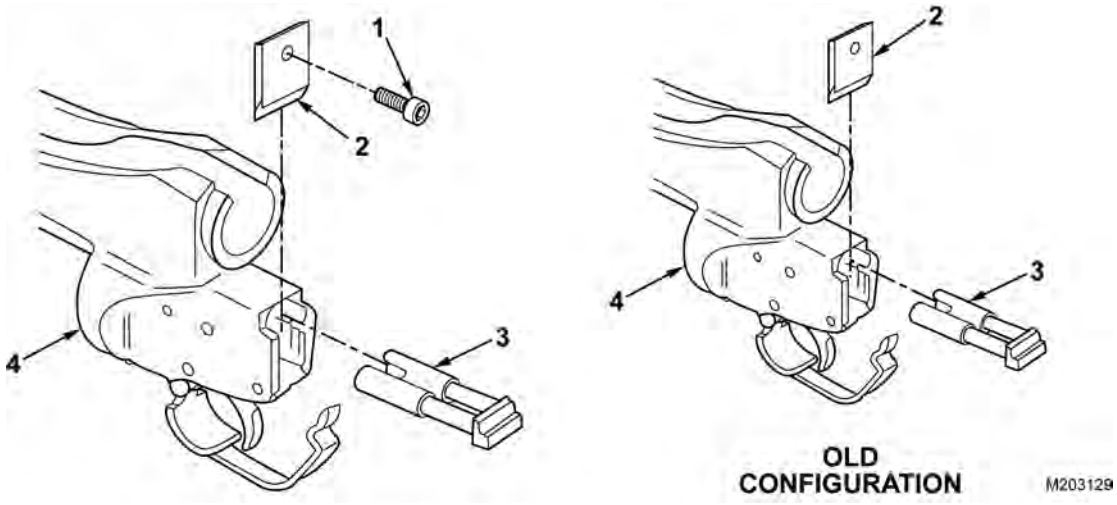


Figure 3. Back Plate and Follower Guide Removal.

DISASSEMBLY - Continued

4. Remove spring pin (Figure 4, Item 1) to release trigger guard (Figure 4, Item 2).

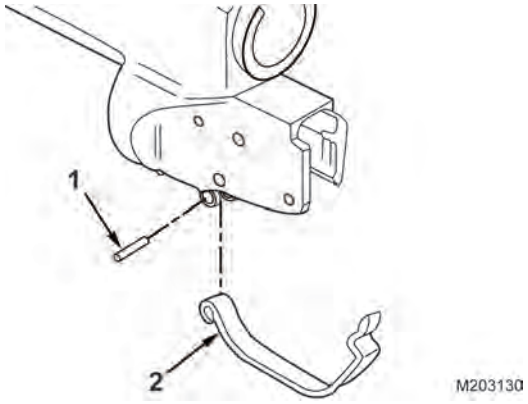


Figure 4. Trigger Guard Removal.

DISASSEMBLY - Continued

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

NOTE

The new trigger pin for the receiver assembly is part number 12002921. When the new trigger pin is removed, the trigger separates into three parts: the trigger, sear, and compression helical spring. The old trigger pin is a repair part for the old trigger assembly. When the old trigger pin is removed, the trigger assembly remains intact by the sleeve bushing.

5. Remove spring pin (Figure 5, Item 6), trigger pin (Figure 5, Item 1 or 8), and trigger (Figure 5, Item 5). If old trigger pin, remove sleeve bushing (Figure 5, Item 7) from trigger. Remove sear (Figure 5, Item 4), and compression helical spring (Figure 5, Item 3) from trigger. Remove compression helical spring (Figure 5, Item 2) from receiver assembly (Figure 5, Item 9). Discard compression helical springs.

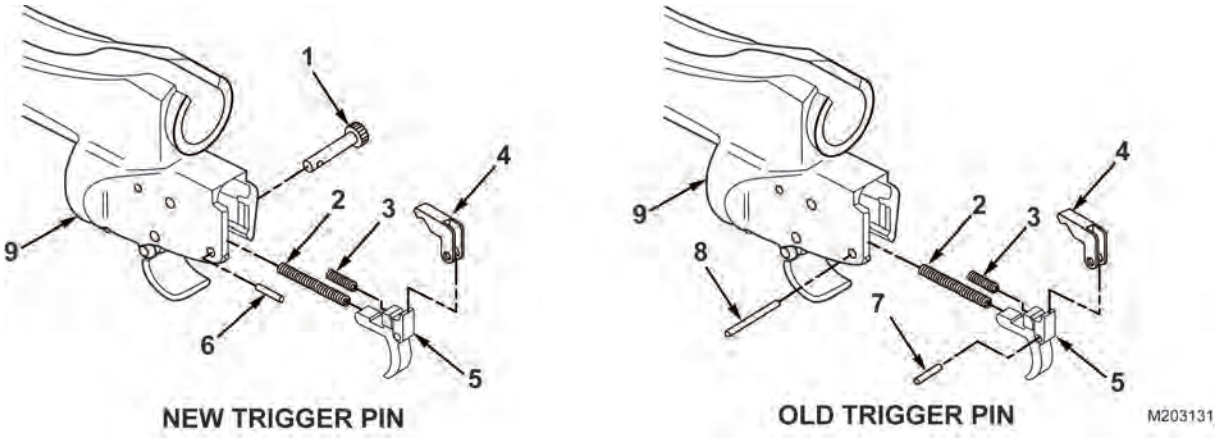


Figure 5. Trigger Removal.

WARNING

The old firing pin, Part Number 8448327 must be replaced by new firing pin Part Number 12002970. Failure to comply may result in damage to equipment and/or personnel injury or death.

6. Remove spring pin (Figure 6, Item 1), cocking lever (Figure 6, Item 2), and firing pin (Figure 6, Item 3).

DISASSEMBLY - Continued

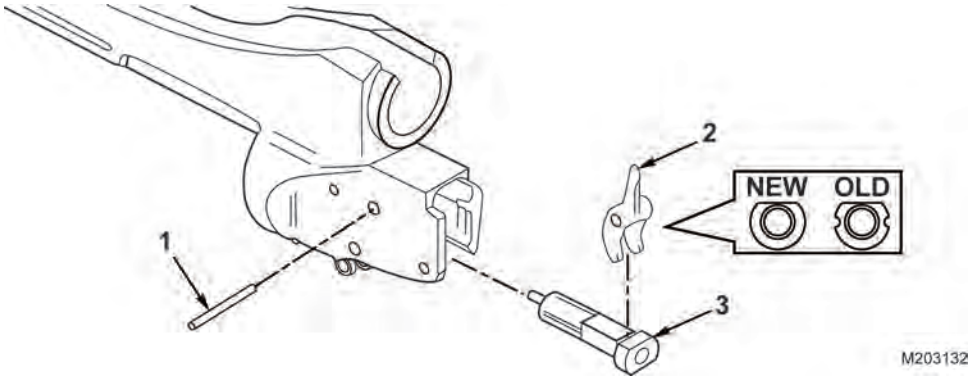


Figure 6. Spring Pin, Cocking Lever, and Firing Pin.

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

NOTE

Remove spring pin only when damaged.

7. Remove spring pin (Figure 7, Item 1) to release ejector retainer (Figure 7, Item 5), compression helical spring (Figure 7, Item 4), cartridge ejector (Figure 7, Item 3), and spring pin (Figure 7, Item 2). Discard compression helical spring.

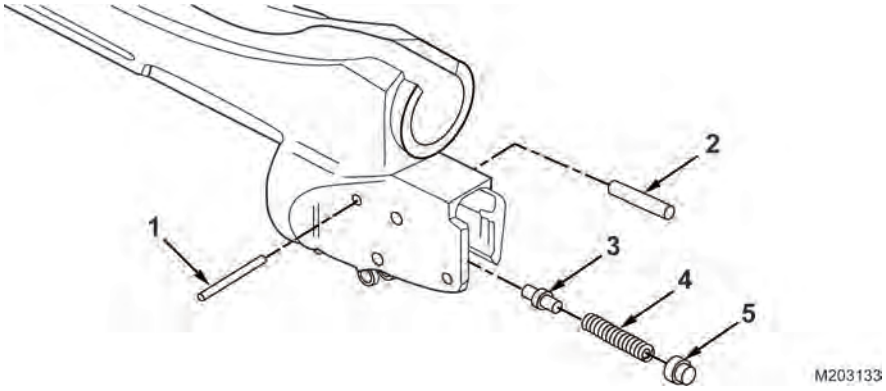


Figure 7. Ejector Retainer Removal.

DISASSEMBLY - Continued

8. Remove spring pin (Figure 8, Item 1) to release cartridge extractor (Figure 8, Item 2). Remove compression helical spring (Figure 8, Item 3). Discard compression helical spring.

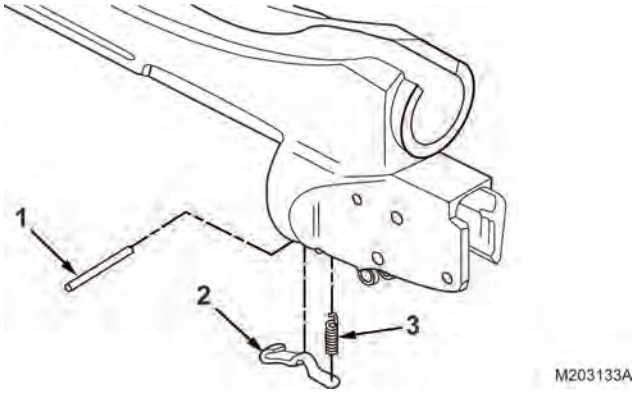


Figure 8. Cartridge Extractor Removal.

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

9. Remove spring pin (Figure 9, Item 1) to release grenade launcher safety (Figure 9, Item 4), safety detent (Figure 9, Item 3), and compression helical spring (Figure 9, Item 2). Discard compression helical spring.

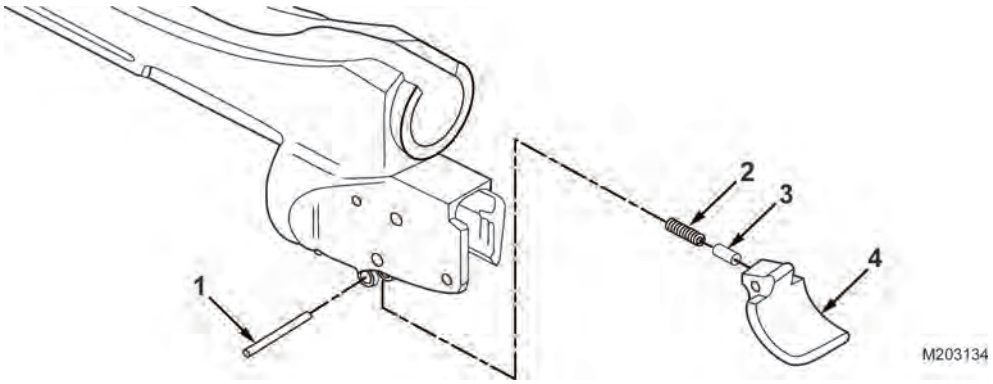


Figure 9. Safety and Safety Detent Removal.

END OF TASK

CLEANING

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

WARNING

CLEANER, LUBRICANT, AND PRESERVATIVE (CLP)

Clean parts of all grease, oil, water, and dirt using cleaning solvent. After cleaning, dry all parts with a wiping rag and lubricate with CLP.

END OF TASK

INSPECTION/REPAIR

1. Check all parts for damage. Replace all authorized unserviceable parts.
2. Inspect all remaining parts for burrs or deformation. Remove burrs and minor deformations with a fine stone.
3. Check that firing pin, safety, extractor, and extractor pin are not broken. Replace if broken.
4. Inspect the trigger and sear for damage and/or wear. If excessively worn, the trigger pull can be affected. Refer to Annual Gauging for trigger pull test. If old trigger assembly is unserviceable, replace it with trigger, sear, and compression helical spring. The new trigger pin and spring pin will also be required.

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

5. Inspect barrel latch. Use penetrant kit to check for cracks as follows:
    a. Ensure area to be inspected is clean and free of oil, etc., by using cleaning solvent. Spray a small amount of remover on the area to be inspected, let it dry, and wipe off with a wiping rag.
    b. Spray penetrant to wet component to be inspected.
    c. Spray developer over penetrant and let it work. Wherever there is crack, there will be a change in color. If there are cracks, the component is unserviceable.
    d. If no cracks are indicated, spray remover on area, let it dry, and wipe off with a wiping rag.

INSPECTION/REPAIR - Continued

CAUTION

Do not remove breech insert unless damaged or loose. Failure to comply may result in weapon damage.

NOTE

- For M203 receiver assemblies with serial numbers 39700 and above, go to step 7.
- For M203 receiver assemblies with serial numbers 39700 and below, refer to step 8.

6. Visually inspect the face of the breech insert (Figure 10, Item 3) for damage. Inspect the breech insert ; it should not protrude above the breech face and should not be more than 0.007 in. (0.18 mm) below the breech face. If the weapon fails any part of the above inspection, skip to step 9 for repair. If the weapon passes all of the above inspections, skip to Assembly.

NOTE

- There is no reverse torque requirement on receiver assemblies with serial numbers 39700 and above.
- Before inspecting an M203 with serial number 39700 and below, check records to see if it has previously had its breech insert repaired. If it has been repaired, inspect in accordance with step 7.

7. Use torque wrench adapter (Figure 10, Item 4) and torque wrench (Figure 10, Item 1) and apply 60 lb-in. (6.78 N•m) of reverse torque to the breech insert (Figure 10, Item 3). If insert indicates no movement and meets the acceptable criteria cited in step 7, it is acceptable; skip to Assembly. If it does not meet this criteria, continue with repair procedures in step 9.

INSPECTION/REPAIR - Continued

NOTE

A breech insert that has been repaired on receiver assemblies 39700 and below will no longer require a reverse check. Therefore, a record should be maintained to prevent a duplication of effort.

8. Use torque wrench adapter (Figure 10, Item 4) and remove breech insert (Figure 10, Item 3). Discard the breech insert if damaged. Examine the breech insert threads (Figure 10, Item 2) in the receiver assembly for damage. If the threads in the receiver assembly are not damaged, install the breech insert using the procedures in step 10. If the threads in the receiver assembly are damaged, install the breech insert using the procedures in step 11.

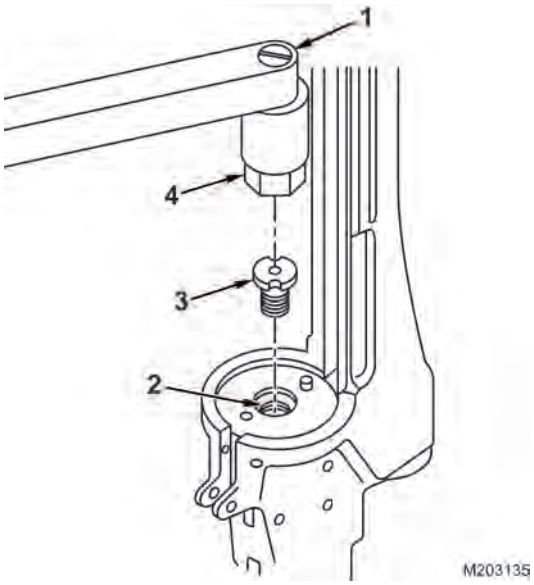


Figure 10. Breech Insert.

INSPECTION/REPAIR - Continued

9. Install breech insert (Figure 11, Item 2) in receiver assemblies with no thread damage as follows:

   a. Clean all sealing compound residue in the receiver assembly using an M16A1/M16A2 rifle chamber cleaning brush (TM 9-1005-249-10, TM 9-1005-319-10, or TM 05538/10012-IN (Marine Corps only)). Insert brush into the threaded hole and rotate several times.

   b. Clean the threads of the new breech insert (Figure 11, Item 2) thoroughly, using chamber cleaning brush (TM 9-1005-249-10, TM 9-1005-319-10, or TM 05538/10012-IN (Marine Corps only)).

   c. Remove all traces of oil and grease so the sealing compound will adhere properly.

   d. Use surface primer to remove oil and grease and to leave a clean, dry surface. Apply surface primer on the threads in the receiver assembly and on the breech insert (Figure 11, Item 2). Allow primer to dry completely.

CAUTION

Do not stake each insert. Failure to comply may result in weapon damage.

   e. Apply sealing compound to coat both the threads of the receiver assembly and the threads of the breech insert (Figure 11, Item 2). Install the breech insert in the receiver assembly. Tighten the breech insert, using torque wrench adapter (Figure 11, Item 3) and torque wrench (Figure 11, Item 1) to 50 ± 5 lb-in. (5.7 ± 0.6 N•m). Check the breech insert to make sure it is flush to 0.007 in. (0.18 mm) below the surface of the breech face. Turn the breech insert in as unserviceable if it protrudes above breech face or if it is more than 0.007 in. (0.18 mm) below the breech face.

   f. Allow the repaired grenade launcher to stand for 24 hours before using to permit the sealing compound to cure.

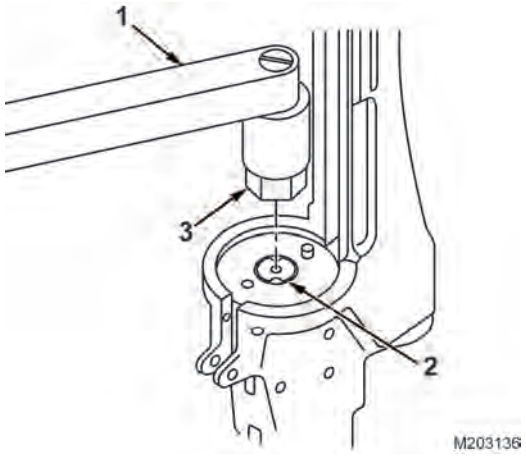


Figure 11. Breech Insert Installation — Without Thread Damage.

10. Install breech insert (Figure 12, Item 2) in receiver assemblies with damaged threads as follows:

WARNING

SOLVENT CLEANING COMPOUND MIL-PRF-680

INSPECTION/REPAIR - Continued

WARNING

CLEANER, LUBRICANT, AND PRESERVATIVE (CLP)

a. Remove the breech insert (Figure 12, Item 2) from the receiver assembly. Clean thoroughly using cleaning solvent. The threads must be free of all residue, including oils.

b. Clean the stripped hole in receiver assembly using a bore brush (TM 9-1005-249-10, TM 9-1005-319-10, or TM 05538/10012-IN (Marine Corps only)) to remove or loosen debris. Clean with cleaning solvent to remove debris and oils.

c. Apply surface primer to the breech insert (Figure 12, Item 2) threads and shoulder area as well as to the receiver assembly hole that has the stripped threads. The primer should be applied to the shoulder area of the hole as well. Allow the primer to dry completely.

d. Apply a coat of sealing compound, DEVCON F, to the breech insert (Figure 12, Item 2) and the hole area in the receiver assembly. Install the breech insert as if being threaded. When the breech insert is in the final assembled position, flush to 0.007 in. (0.18 mm) below the breech surface of the receiver assembly, remove all excess sealing compound from the breech insert face, including the notches in the breech insert for the torque wrench adapter (Figure 12, Item 4). Be sure all excess sealing compound is removed from the firing pin hole (Figure 12, Item 3) in the breech insert, including the rear area where the firing pin makes contact with the breech insert. Insert a pipe cleaner from the rear of the grenade launcher and through the firing pin hole.

e. Reassemble the back plate to the receiver assembly and place a C-clamp against the breech insert (Figure 12, Item 2) and the back plate. Tighten the C-clamp only enough to hold the breech insert in a tight position to the receiver assembly. Do not bend back plate inward. Let the sealing compound cure for 24 hours.

f. To be sure the repair is satisfactory, remove C-clamp. Use the torque wrench adapter (Figure 12, Item 4) and torque wrench (Figure 12, Item 1) and apply 55 lb-in. (6.22 N•m) reverse torque to the breech insert (Figure 12, Item 2). The breech insert should not move or loosen. If the breech insert loosens, turn the grenade launcher in as unserviceable.

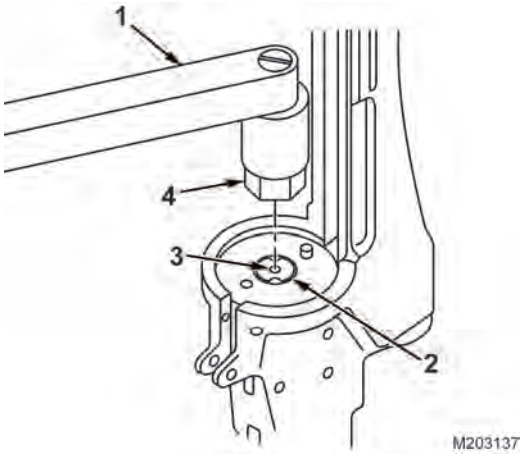


Figure 12. Breech Insert Installation — With Thread Damage.

END OF TASK

ASSEMBLY

1. Install spring pin (Figure 13, Item 5), new helical compression spring (Figure 13, Item 3), safety detent (Figure 13, Item 4), flat end first, and grenade launcher safety (Figure 13, Item 2), and secure with spring pin (Figure 13, Item 1). Spring pin should be equal distance to both sides.

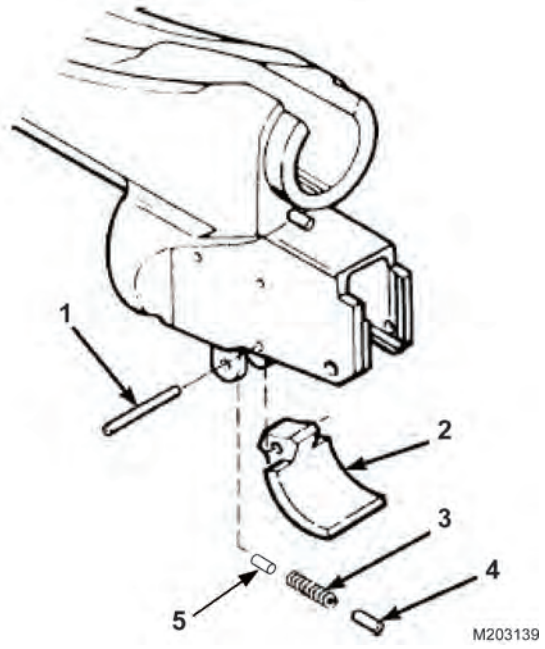


Figure 13. Safety and Safety Detent Installation.

2. Seat compression helical spring (Figure 14, Item 2) in hole in receiver. Install cartridge extractor (Figure 14, Item 3) and secure with spring pin (Figure 14, Item 1). Check that spring pin is equally positioned on both sides.

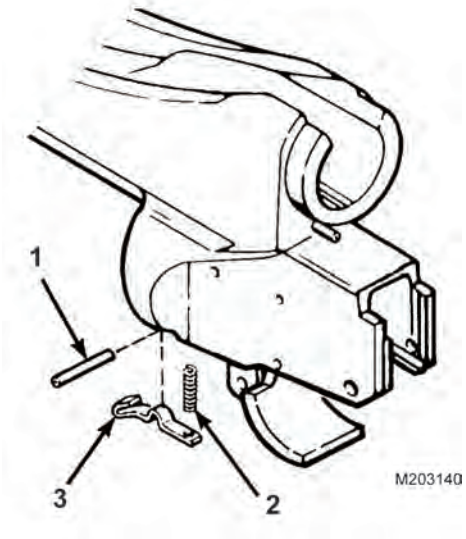


Figure 14. Cartridge Extractor Installation.

ASSEMBLY - Continued

3. Place compression helical spring (Figure 15, Item 3) on cartridge ejector (Figure 15, Item 2). Install cartridge ejector in middle hole of receiver as shown. Position ejector retainer (Figure 15, Item 4) on compression helical spring. Press on ejector retainer to compress compression helical spring and secure with spring pin (Figure 15, Item 5). If removed, install spring pin (Figure 15, Item 1).

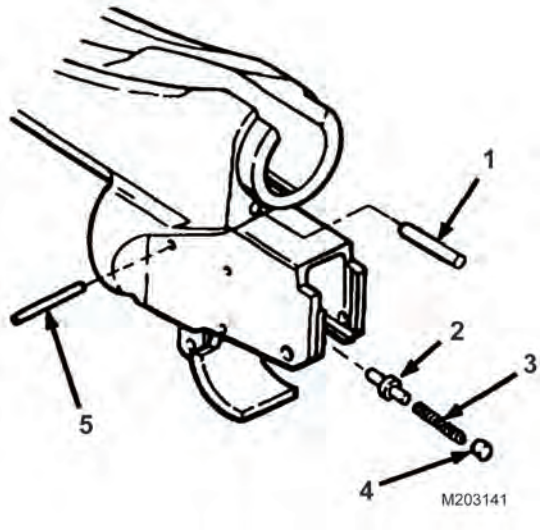


Figure 15. Cartridge Extractor Installation.

ASSEMBLY - Continued

WARNING

The old firing pin, Part Number 8448327 must be replaced by new firing pin Part Number 12002970. Failure to comply may result in damage to equipment and/or personnel injury or death.

NOTE

Install firing pin with flat side up. The cocking lever goes in slot in receiver.

4. Seat cocking lever (Figure 16, Item 2) on firing pin (Figure 16, Item 3) as shown. Install cocking lever and firing pin and secure with spring pin (Figure 16, Item 1).

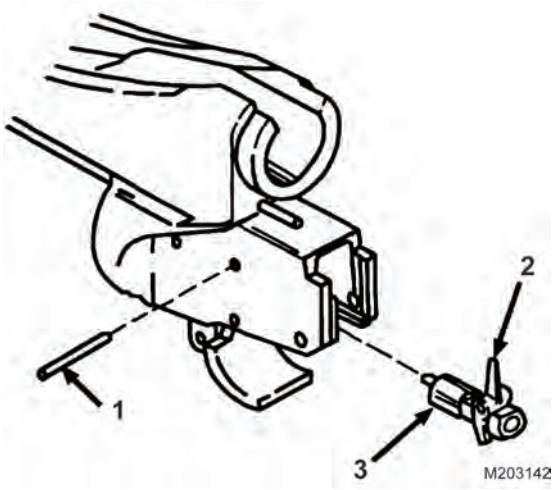


Figure 16. Cocking Lever and Firing Pin Installation.

NOTE

The new trigger pin for the receiver assembly is illustrated in this procedure. The old trigger pin is also illustrated here. When old trigger pin is unserviceable, replace with new old style trigger pin.

5. Install new compression helical spring (Figure 17, Item 2) into the back of the firing pin receiver.

ASSEMBLY - Continued

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

NOTE

A fabricated slave pin may be used to hold items helical spring, sear, and trigger together.

6. Install new trigger pin as follows:
   a. Place compression helical spring (Figure 17, Item 3) on trigger (Figure 17, Item 5).
   b. Position sear (Figure 17, Item 4) on compression helical spring (Figure 17, Item 3) and align trigger pin holes in trigger (Figure 17, Item 5) and sear.
   c. Install the trigger (Figure 17, Item 5) and secure with trigger pin (Figure 17, Item 1) and spring pin (Figure 17, Item 6). Check that head of trigger pin is located on right side of receiver.
7. Install old trigger pin as follows:
   a. Place new compression helical spring (Figure 17, Item 3) and sear (Figure 17, Item 4) on trigger (Figure 17, Item 5).
   b. Install trigger (Figure 17, Item 5) and secure with trigger pin (Figure 17, Item 8) and sleeve bushing (Figure 17, Item 7).

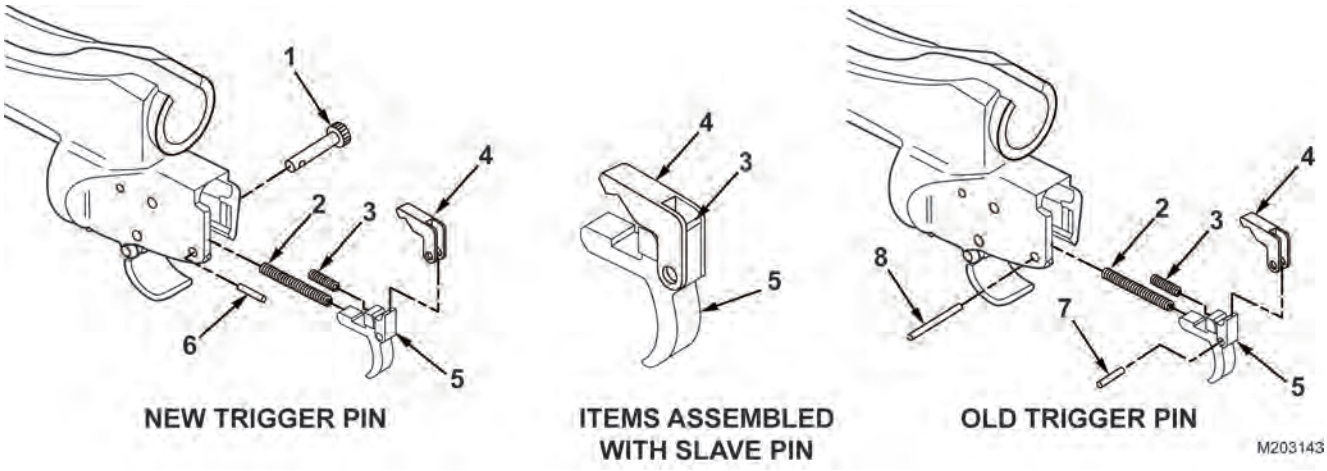


Figure 17. Trigger Pin Installation.

8. Refer to Annual Gauging for firing pin protrusion test procedures.

ASSEMBLY - Continued

9. Line up hole in trigger guard (Figure 18, Item 2) with holes in receiver and secure with spring pin (Figure 18, Item 1).

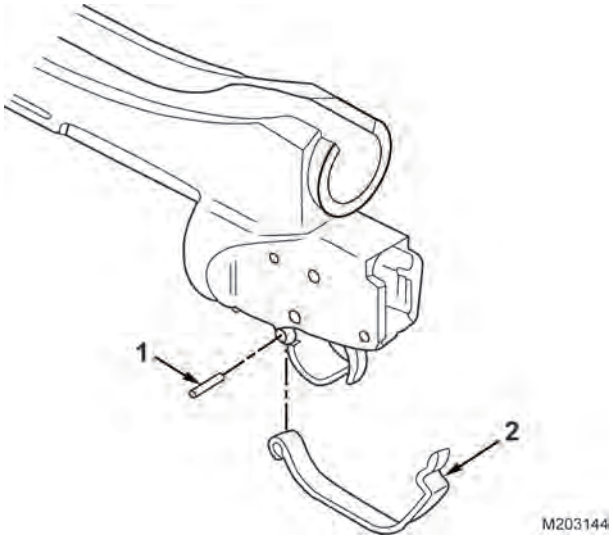


Figure 18. Trigger Guard Installation.

NOTE

Ensure follower guide assembly is installed as shown.

10. Insert follower guide assembly (Figure 19, Item 3) in receiver (Figure 19, Item 4), secure with back plate (Figure 19, Item 1) and new self-locking screw (Figure 19, Item 2).

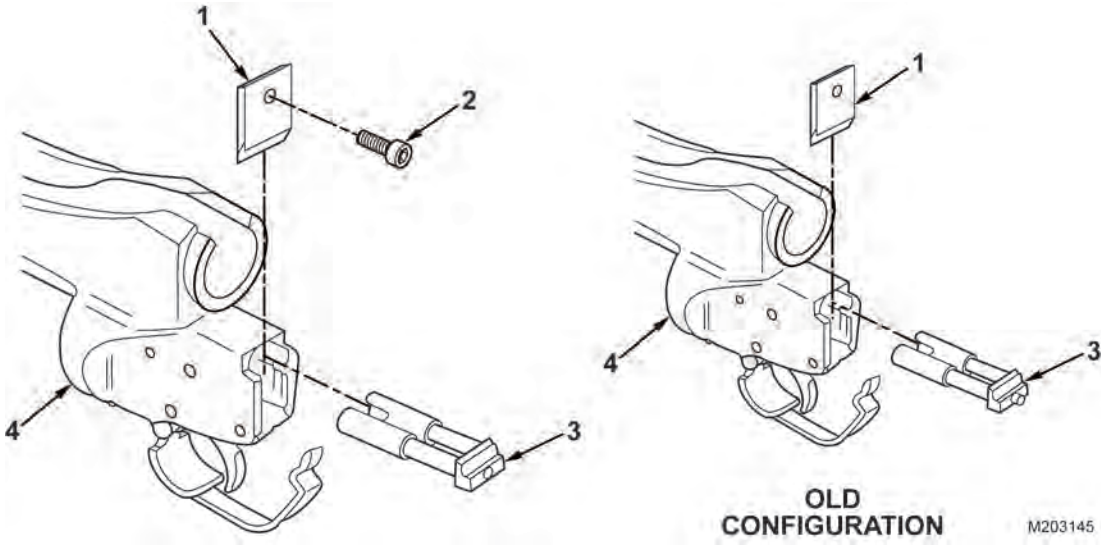


Figure 19. Follower Guide Assembly Installation.

11. Insert 3/32 in. drive pin punch (Figure 20, Item 1) into firing pin hole. To cock the grenade launcher, push punch until click is heard.

ASSEMBLY - Continued

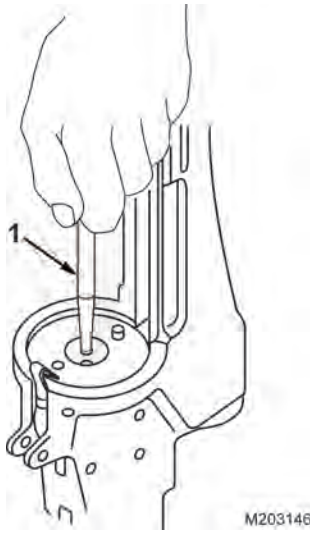


Figure 20. Cocking the Grenade Launcher.

12. Install new compression helical spring (Figure 21, Item 3) and barrel latch (Figure 21, Item 2). Secure with headless straight pin (Figure 21, Item 1) by installing headless straight pin flush to 0.030 in. (0.76 mm) slightly below the tip of the receiver. The headless straight pin must not be flush with or extend below the bottom surface.

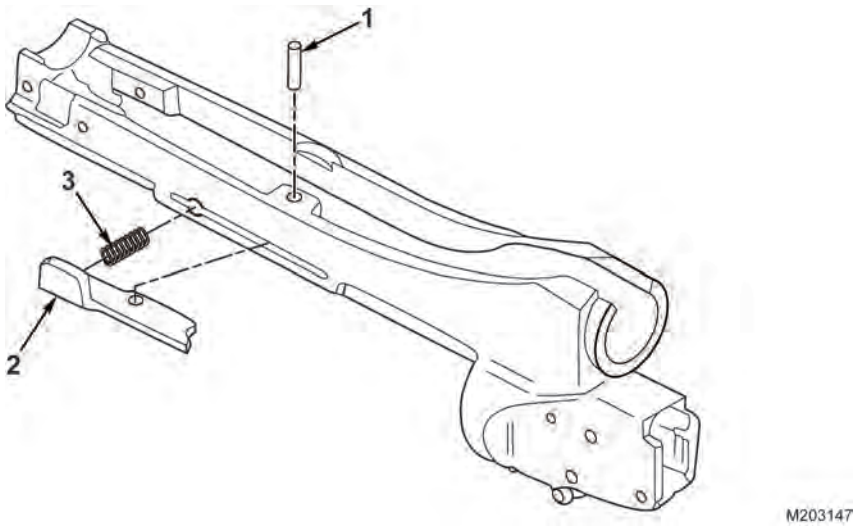


Figure 21. Helical Spring Installation.

ASSEMBLY - Continued

13. Stake headless straight pin in place as follows:
    1. Stake straight pin (Figure 22, Item 2) in place at top and bottom, 180 degrees opposed; do not allow punch to extend or slide into pinhole during staking.
    2. Receiver staking (Figure 22, Item 1) shall be limited to four, placed 90 degrees apart at 3, 6, 9, and 12 o'clock.
    3. Inspect staked area for cracked or separated material. Replace receivers that have cracked or separated material.

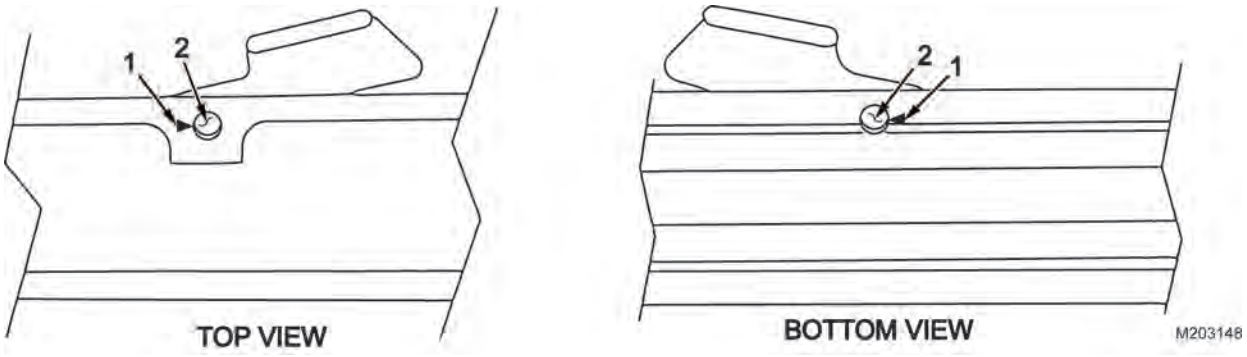


Figure 22. Staking Headless Straight Pin.

NOTE

M203A1 ONLY: Hand guard assembly does not cover barrel stop pin holes therefore one stake each side of receiver is required to retain barrel stop pin.

14. Place torsion helical spring (Figure 23, Item 1) on barrel stop (Figure 23, Item 2) and secure with headless straight pin (Figure 23, Item 3).

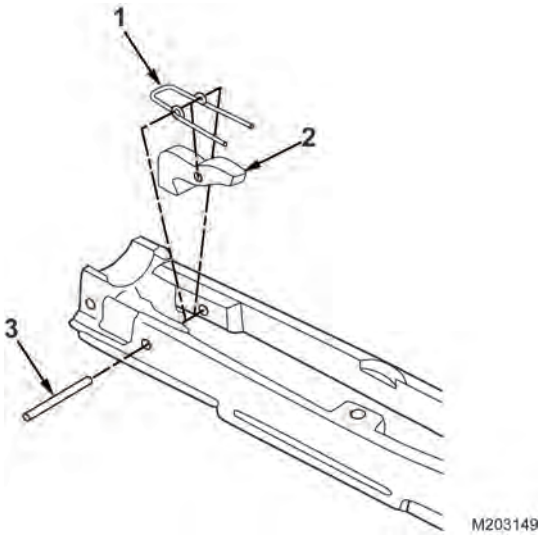


Figure 23. Torsion Helical Spring Installation.

15. Insert tracks on barrel assembly (Figure 24, Item 1) into tracks in receiver assembly (Figure 24, Item 3). Lift up on barrel assembly (Figure 24, Item 1) and compress barrel stop (Figure 24, Item 2). Pull barrel assembly rearward and barrel stop will snap in place.

ASSEMBLY - Continued

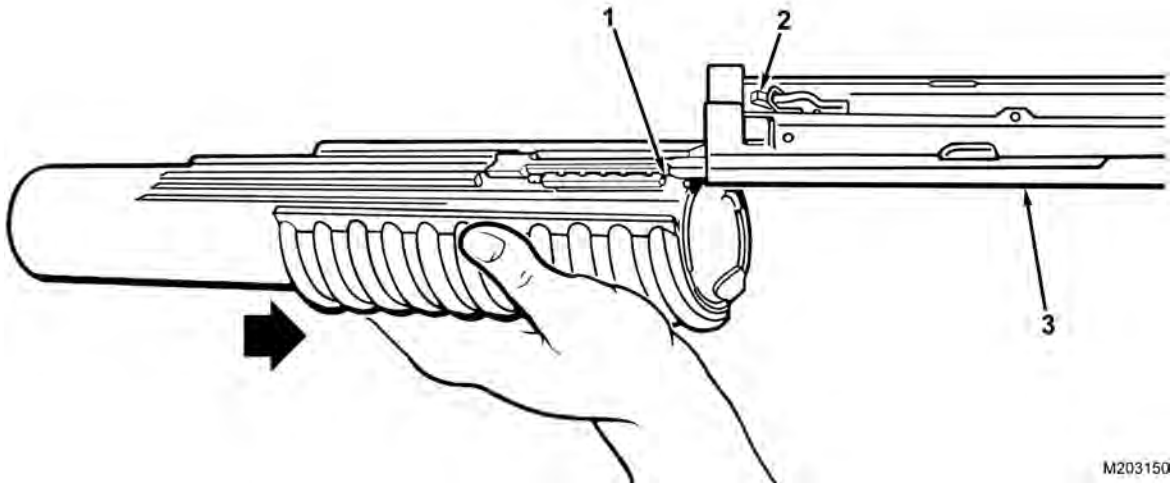


Figure 24. Barrel Assembly Installation.

16. Perform function checks in accordance with TM 9-1010-221-10.

END OF TASK

ANNUAL GAUGING

NOTE

Minimum trigger pull is 5 lbs (2.27 kg); maximum trigger pull is 11 lbs (4.99 kg).

1. Test trigger pull as follows:
   a. Cock grenade launcher.
   b. Place safety in FIRE position.
   c. Place grenade launcher on edge of table, barrel end up. Support grenade launcher firmly with hand.
   d. Place trigger pull measuring fixture rod (Figure 25, Item 2) on trigger and let it hang freely.
   e. Begin adding weights (Figure 25, Item 3) to the rod (Figure 25, Item 2) until trigger releases firing pin. Record the weight.

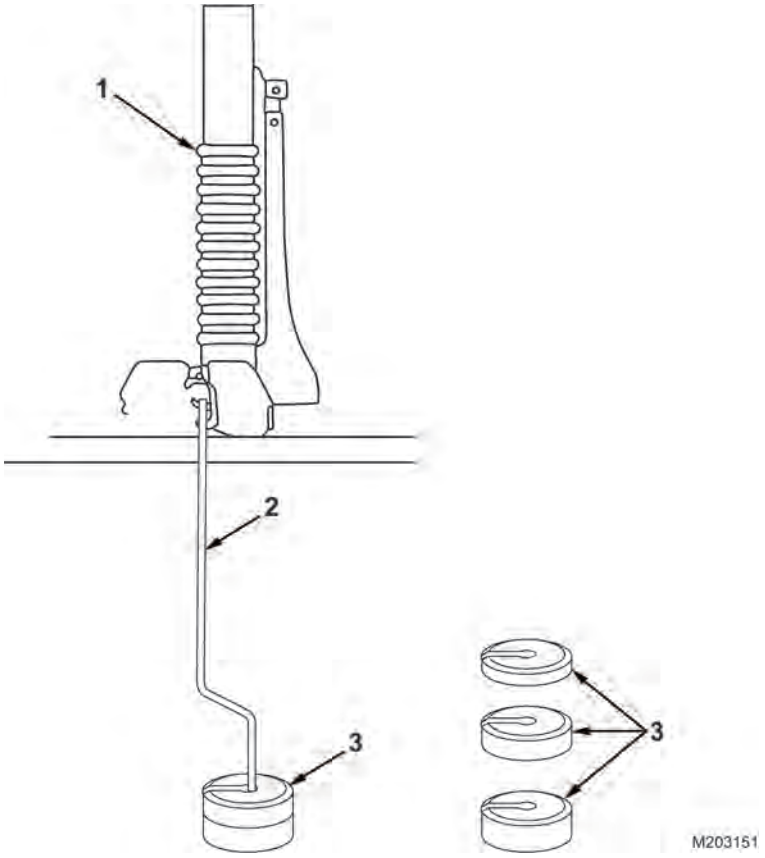


Figure 25. Trigger Pull Check.

ANNUAL GAUGING - Continued

WARNING

Wear eye protection to prevent eye injury when removing or installing spring-loaded parts. Failure to comply may result in personnel injury.

2. Test firing pin protrusion as follows:
    1. Cock grenade launcher.
    2. Move barrel to forward position.
    3. Remove self-locking screw (Figure 26, Item 2), back plate (Figure 26, Item 1), and follower guide assembly (Figure 26, Item 3). Discard locking screw.

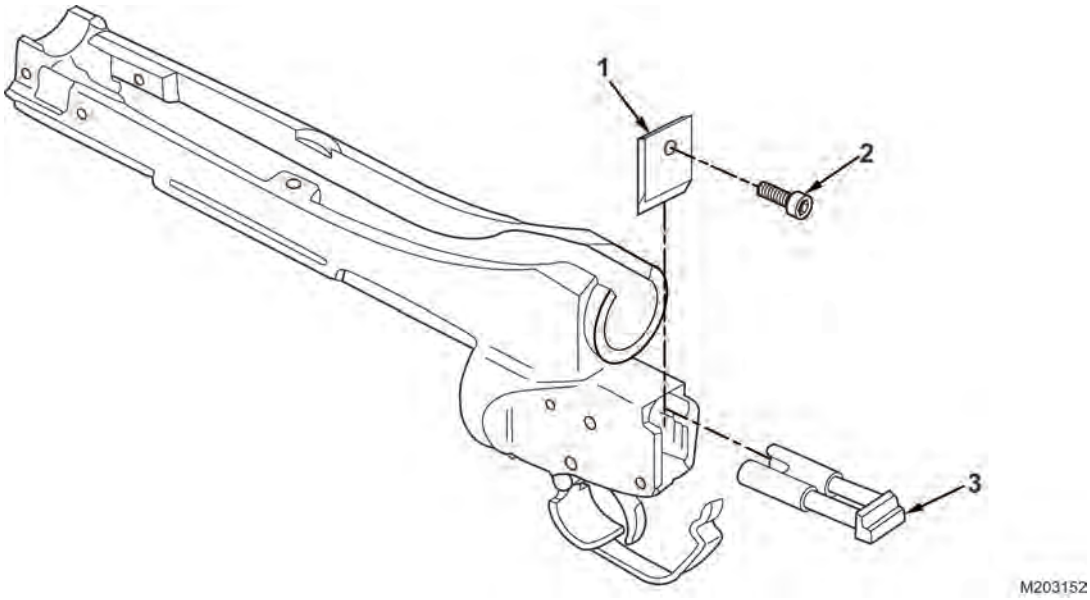


Figure 26. Testing Firing Pin Protrusion.

4. Squeeze the trigger and measure firing pin protrusion using firing pin protrusion gage (Figure 27, Item 1). If firing pin exceeds maximum limit, replace it and regauge.

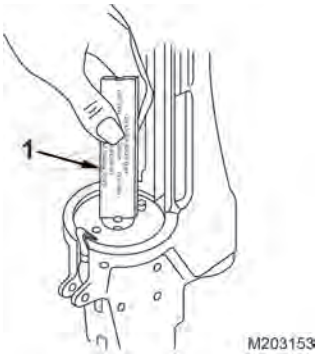


Figure 27. Measuring Firing Pin Protrusion.

ANNUAL GAUGING - Continued

5. Install follower guide assembly (Figure 28, Item 3) in receiver, secure back plate (Figure 28, Item 1) and new self-locking screw (Figure 28, Item 2).

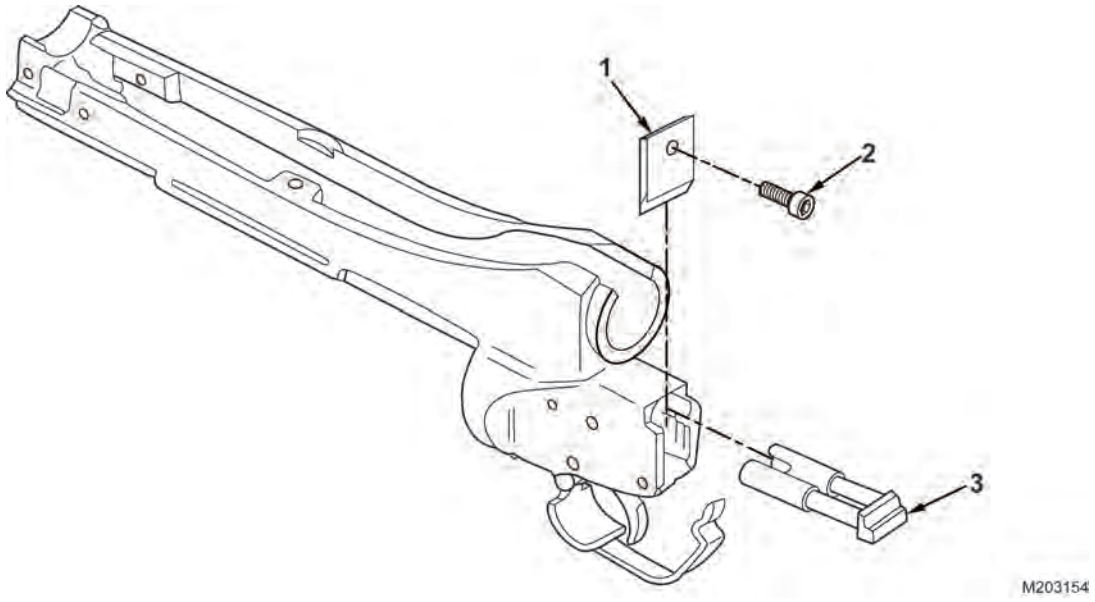


Figure 28. Follower Guide Installation.

3. Each weapon must be hand-functioned to check for unusual binding, positive cocking action, and general operation. Dummy ammunition can be used to be sure of positive chambering, extraction, and ejection action.
4. Check for bore constriction. Refer to Inspection in WP 0014.
5. Inspect the weapon for missing finish and touch up with SFL.

END OF TASK

FOLLOW-ON TASK

Install M203/M203A1 grenade launcher onto M16 Series Rifle/M4 Carbine (WP 0010).
Install M203A2 grenade launcher onto M16A4/M4 Carbine (WP 0011).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
QUADRANT SIGHT ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Materials/Parts
Helical Compression Spring (WP 0031, Figure 9, Item 10)

References
WP 0017

References (cont.)
WP 0018
WP 0019

Equipment Condition
Quadrant sight assembly removed from host weapon carrying handle (WP 0010)

DISASSEMBLY

NOTE

When replacing quadrant sight clamp below for the first time, also replace sight pivot screw (WP 0017). These are new parts and are not compatible with the parts they replace.

1. Unscrew mounting bolt (Figure 1, Item 1) and remove quadrant sight clamp (Figure 1, Item 2).
2. Unscrew sight pivot screw (Figure 1, Item 9) and separate sightarm assembly (Figure 1, Item 5) from range assembly quadrant (Figure 1, Item 3 or 4).
3. Slide latch assembly (Figure 1, Item 11) to the notch in the sightarm assembly (Figure 1, Item 5) and remove latch assembly and helical compression spring (Figure 1, Item 10). Discard helical compression spring.
4. Unscrew sight post (Figure 1, Item 12).

CAUTION

Sightarm assembly is made of light plastic. Take care when driving out spring pin. Failure to comply may result in weapon damage.

NOTE

Refer to WP 0019 for further breakdown of sight arm assembly, WP 0017 for range assembly quadrant, and WP 0018 for slide latch assembly.

5. Drive out spring pin (Figure 1, Item 6) and remove sight aperture retainer (Figure 1, Item 7) and sight aperture (Figure 1, Item 8) by pushing down on sight aperture retainer.

DISASSEMBLY - Continued

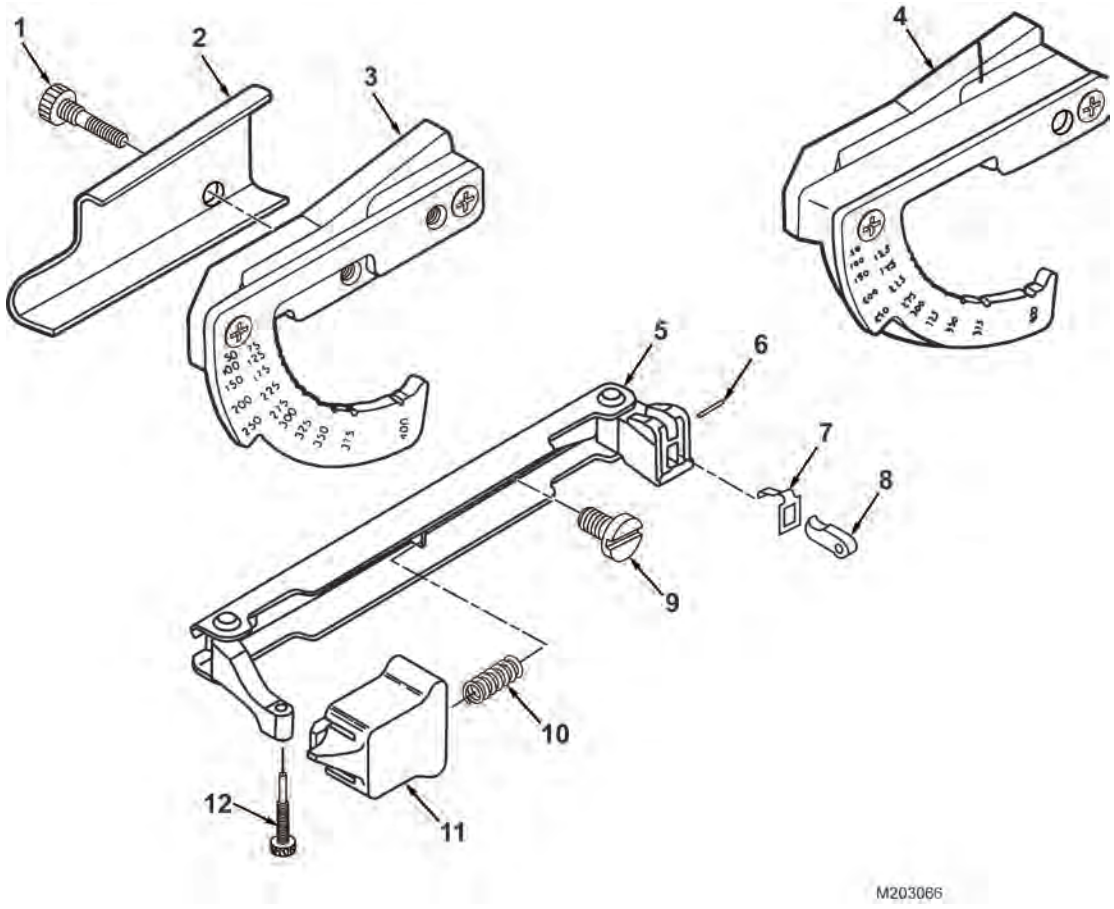


Figure 1. Quadrant Sight Assembly.

END OF TASK

INSPECTION/REPAIR

Inspect for worn or damaged parts. Replace authorized unserviceable components.

END OF TASK

ASSEMBLY

CAUTION

Sight aperture arm is made of light plastic. Take care when driving in spring pin. Failure to comply may result in weapon damage.

1. Place sight aperture (Figure 2, Item 8) and sight aperture retainer (Figure 2, Item 7) in place on sightarm assembly (Figure 2, Item 5) and drive in spring pin (Figure 2, Item 6).
2. Install sight post (Figure 2, Item 12).
3. Place new helical compression spring (Figure 2, Item 10) in latch assembly (Figure 2, Item 11). Insert latch assembly in notch of sightarm assembly (Figure 2, Item 5) and slide to the right.
4. Align the screw holes in sightarm assembly (Figure 2, Item 5) and range assembly quadrant (Figure 2, Item 3 or 4); install and tighten sight pivot screw (Figure 2, Item 9).
5. Align screw holes in quadrant sight clamp (Figure 2, Item 2) and range assembly quadrant (Figure 2, Item 3 or 4); install mounting bolt (Figure 2, Item 1).

ASSEMBLY - Continued

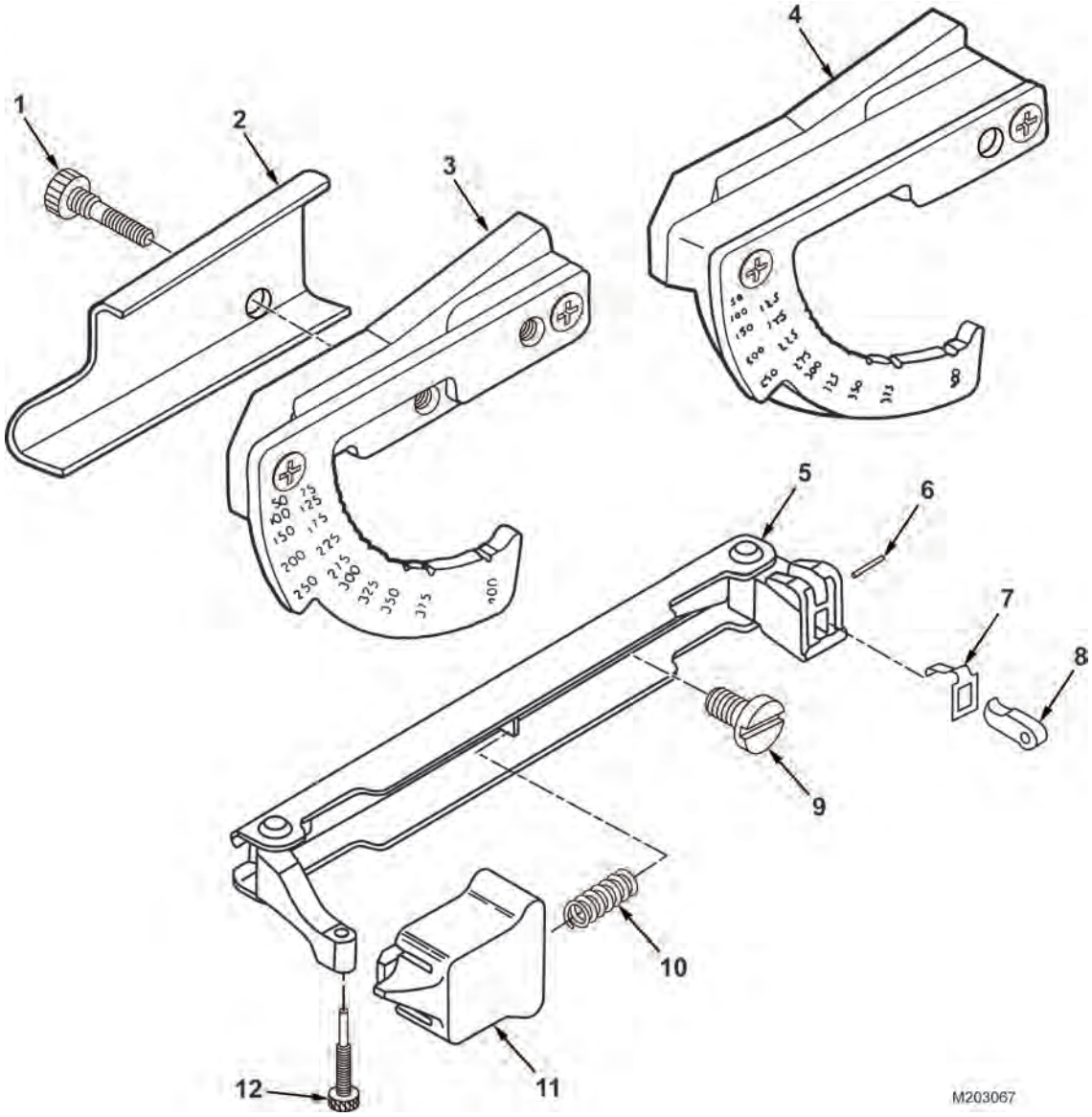


Figure 2. Quadrant Sight Assembly.

END OF TASK

FOLLOW-ON TASK

Attach quadrant sight assembly to host weapon carrying handle (WP 0010).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
RANGE ASSEMBLY QUADRANT MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Equipment Condition

Range assembly quadrant removed from quadrant sight assembly (WP 0016)

DISASSEMBLY

NOTE

- When replacing bracket assembly for the first time, also replace fire control quadrant (WP 0016). These are new parts and are not compatible with the parts they replace.
- Disassemble only to replace unserviceable components.

Remove two machine screws (Figure 1, Item 5) and separate fire control quadrant (Figure 1, Item 3) from bracket assembly (Figure 1, Item 1). This configuration is for use with M16A1/M16A2/M16A3 Rifles.

Remove two machine screws (Figure 1, Item 4) and separate fire control quadrant (Figure 1, Item 3) from spacer (Figure 1, Item 2) and bracket assembly (Figure 1, Item 1). This configuration is for use with M16A4 Rifles and M4/M4A1 Carbines.

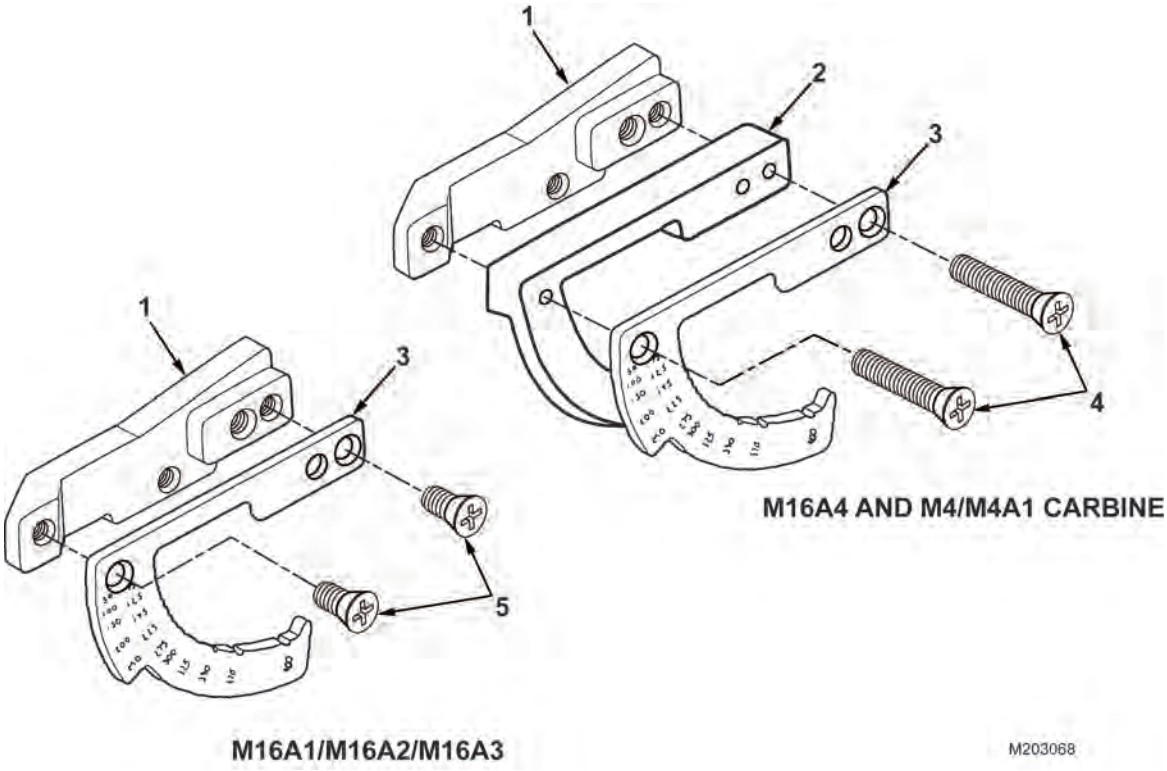


Figure 1. Range Assembly Quadrant.

END OF TASK

ASSEMBLY

Position fire control quadrant (Figure 2, Item 3) on bracket assembly (Figure 2, Item 1) or on spacer (Figure 2, Item 2) then on bracket assembly and secure with two machine screws (Figure 2, Item 4 or 5).

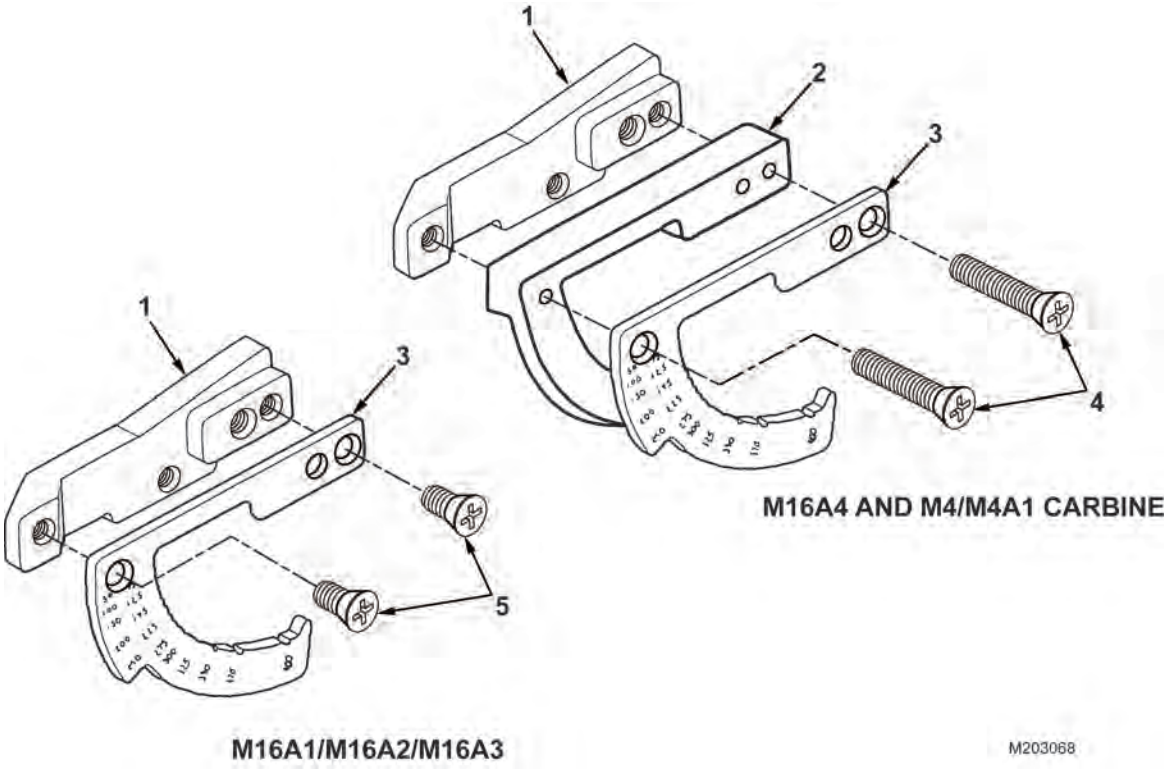


Figure 2. Range Assembly Quadrant.

END OF TASK

FOLLOW-ON TASK

Reinstall range assembly quadrant onto quadrant sight assembly (WP 0016).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LATCH ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Equipment Condition
Latch assembly removed from quadrant sight assembly (WP 0016)

DISASSEMBLY

NOTE

Disassemble only to replace unserviceable components.

Remove headless straight pin (Figure 1, Item 2) from sight latch (Figure 1, Item 1).

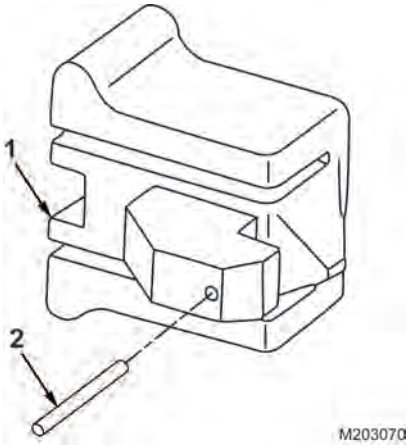


Figure 1. Latch Assembly.

END OF TASK

INSPECTION/REPAIR

1. Inspect for worn or damaged parts.
2. Replace authorized unserviceable components.

END OF TASK

ASSEMBLY

Drive headless straight pin (Figure 2, Item 2) into sight latch (Figure 2, Item 1).

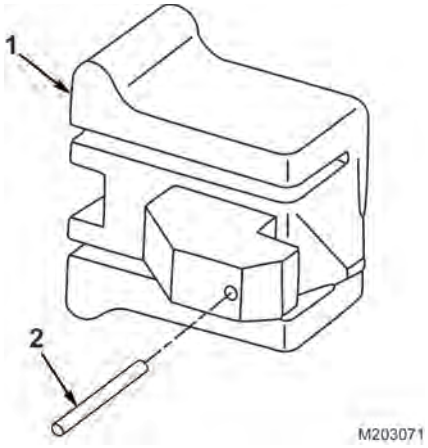


Figure 2. Latch Assembly.

END OF TASK

FOLLOW-ON TASK

Attach latch assembly to quadrant sight assembly (WP 0016).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SIGHTARM ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only) (WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

Materials/Parts
Rivet (WP 0034, Figure 12, Item 1) Qty: 2

Equipment Condition
Sightarm assembly removed from quadrant sight assembly (WP 0016)

DISASSEMBLY

NOTE

Disassemble only to replace unserviceable components.

1. File peened end from rivets (Figure 1, Item 1) or drive rivets from quadrant sightarm (Figure 1, Item 2) with punch and hammer. Discard rivets.
2. Remove sight post arm (Figure 1, Item 4) and sight aperture arm (Figure 1, Item 3).

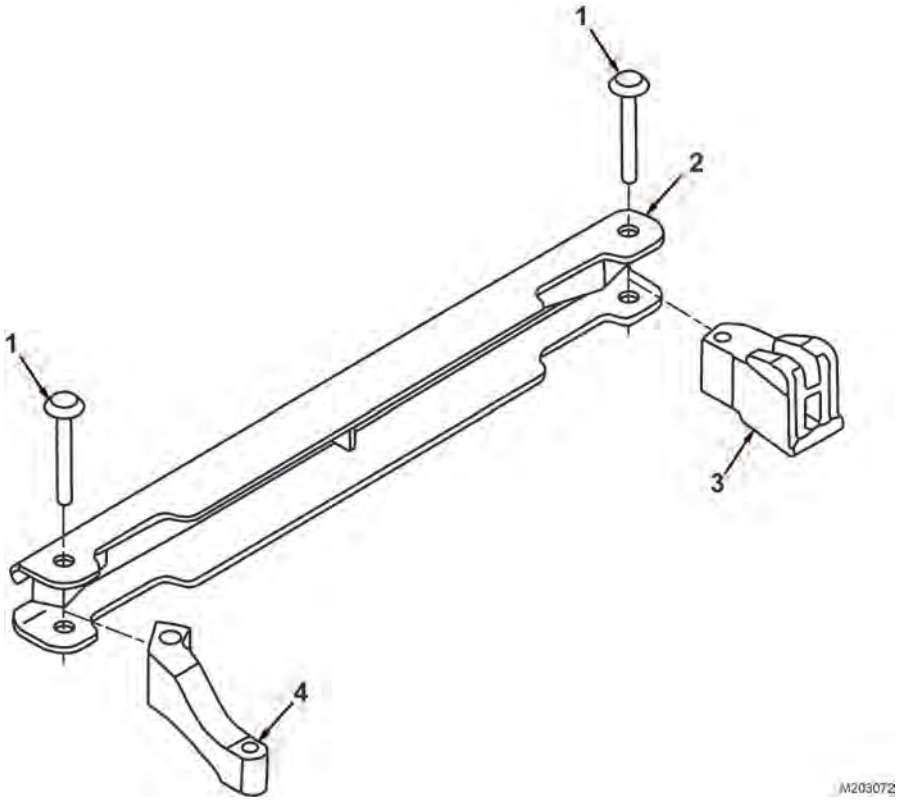


Figure 1. Sightarm Assembly.

END OF TASK

END OF TASK

INSPECTION/REPAIR

1. Inspect for worn or damaged parts.
2. Replace authorized unserviceable components.

END OF TASK

ASSEMBLY

1. Position sight post arm (Figure 2, Item 4) and sight aperture arm (Figure 2, Item 3) in quadrant sightarm (Figure 2, Item 2).
2. Drive new rivets (Figure 2, Item 1) through quadrant sightarm (Figure 2, Item 2), sight post arm (Figure 2, Item 4), and sight aperture arm (Figure 2, Item 3). Peen the rivets.

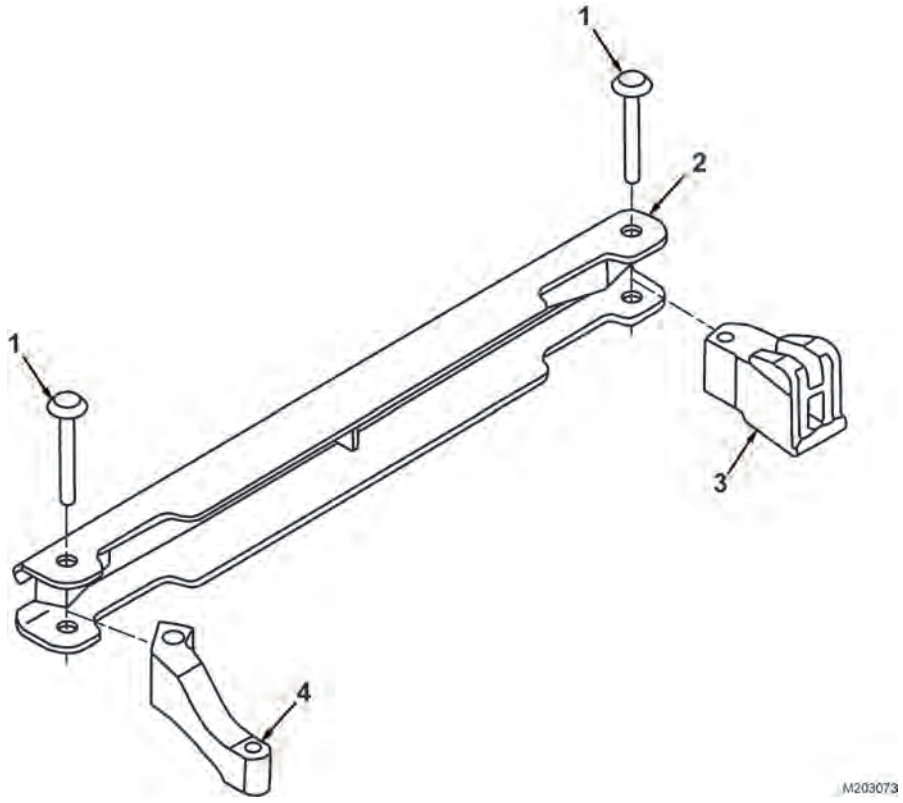


Figure 2. Sightarm Assembly.

END OF TASK

FOLLOW-ON TASK

Reinstall sightarm assembly to quadrant sight assembly (WP 0016).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ILLUSTRATED LIST OF MANUFACTURED ITEMS INTRODUCTION

INTRODUCTION

Scope

This work package includes complete instructions for making items authorized to be manufactured or fabricated at field maintenance.

How to Use the Index of Manufactured Items

A part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the information which covers fabrication criteria.

Explanation of the Illustrations of Manufactured Items

All instructions needed by maintenance personnel to manufacture the item are included on the illustrations.
All bulk materials needed for manufacture of an item are listed by part number or specification number in a tabular list on the illustration.

INDEX OF MANUFACTURED ITEMS

Table 1. Manufactured Items Materials.

ITEM NO.	PART NUMBER/ (CAGEC)	DESCRIPTION	DRAWING NUMBER	FIGURE NUMBER
1	ASTM-A547	Block, Wire, Steel Alloy, Grade 4140	2	
2	As Available	Block, Aluminum or Mild Steel Bar Stock,	3	
3	QQ-S-634	Mild Steel (1018) Bar Stock, 1-3/4 in. dia.	1	

END OF WORK PACKAGE

FIELD MAINTENANCE
ILLUSTRATED LIST OF MANUFACTURED ITEMS

INITIAL SETUP:

Tools and Special Tools
Small Arms Tool Kit (Army only)

Tools and Special Tools (cont.)
(WP 0040, Table 2, Item 4)
Small Arms Tool Kit (USMC only) (WP 0040, Table 2, Item 6)

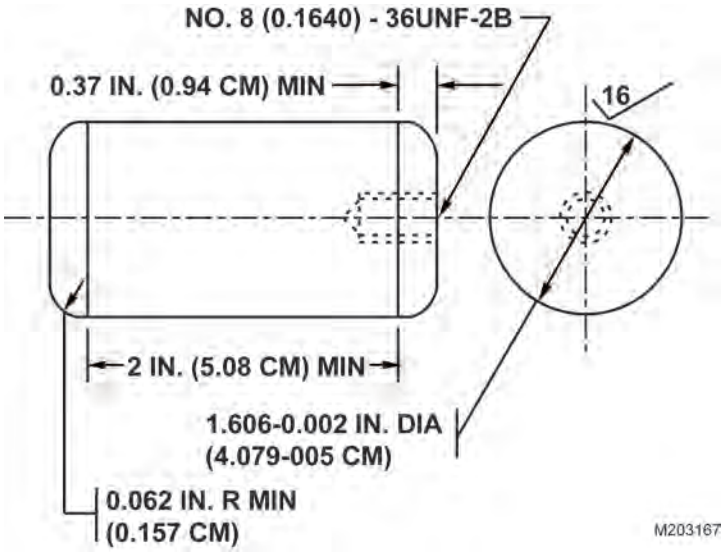


Figure 1. Fabrication of Bore Constriction Tool.

NOTES:
1. Material: Mild steel (1018) bar stock, 1-3/4 in. dia, NSN 9510-00-813-5335, Unit of Issue: Foot, QQ-S-634 or equivalent.
2. Purpose of tool: To detect dents and/or minor damage sufficient to impede forward progress of fired projectile.
3. Use handle section of small arms cleaning rod.
4. Tool must pass freely through entire barrel bore.

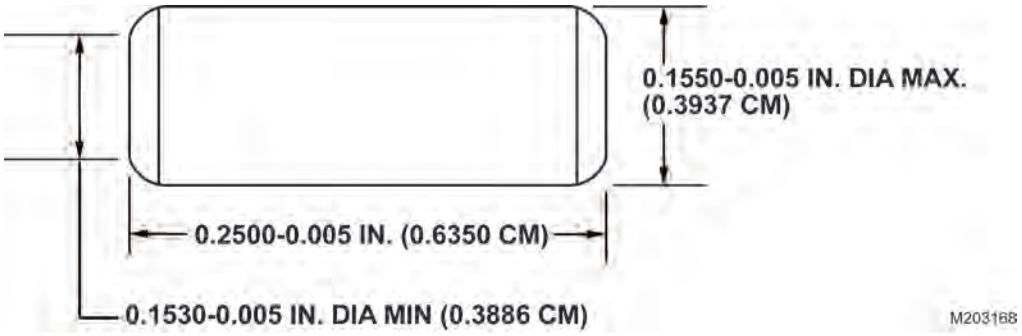


Figure 2. Slave Pin.

NOTES:

1. Fabricate slave pin from material block, wire, steel alloy, grade 4140, ASTM-A547 or equivalent.
2. Purpose of tool: To hold trigger parts assembled during installation.
3. All dimensions shown are in inches with the metric conversion to centimeters in parentheses.

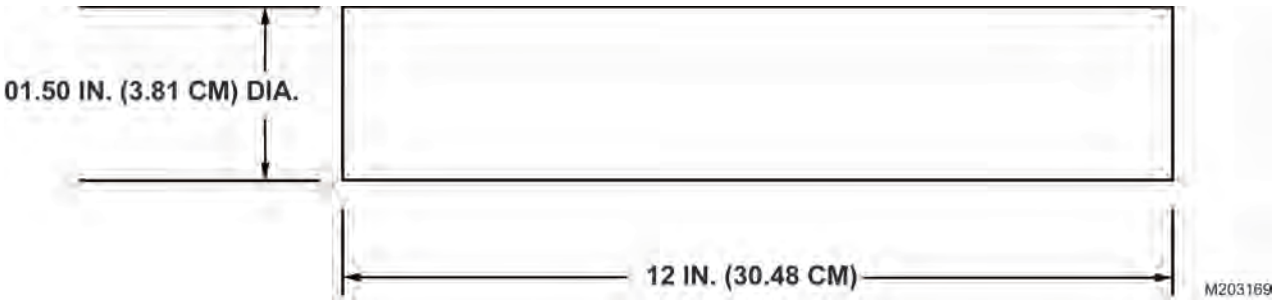


Figure 3. Barrel Extension Staking Support Tool.

NOTES:

1. Fabricate from material block, aluminum, or mild steel bar stock, as available.
2. Purpose of tool: For support during staking of barrel extension.
3. All dimensions shown are in inches with the metric conversion to centimeters in parentheses.

END OF WORK PACKAGE

CHAPTER 5

PARTS INFORMATION

FIELD MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION

SCOPE

This RPSTL lists and authorizes spares and repair parts; special tools; special Test, Measurement, and Diagnostic Equipment (TMDE); and other special support equipment required for performance of field maintenance of the M203/M203A1/M203A2 grenade launchers. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance, and Recoverability (SMR) codes.

GENERAL

In addition to the Introduction work package, this RPSTL is divided into the following work packages:

1. **Repair Parts List Work Packages.** Work packages containing lists of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in FIG. BULK at the end of the work package. Repair parts kits are listed separately in their own functional group and work packages. Repair for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.

2. **Special Tools List Work Packages.** Work packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) Column). Tools that are components of common tool sets and/or Class VII are not listed.

3. **Cross-Reference Indexes Work Packages.** There are two cross-reference indexes work packages in this RPSTL: the National Stock Number (NSN) Index work package, and the Part Number (P/N) Index work package. The NSN Index work package refers you to the figure and item number. The P/N Index work package refers you to the figure and item number.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES

ITEM NO (Column (1)). Indicates the number used to identify items called out in the illustration.

SMR CODE (Column (2)). The SMR code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout. This entry may be subdivided into four subentries, one for each service.

Table 1. SMR Code Explanation.

Source Code XX		Maintenance Code XX		Recoverability Code X
1st two positions: How to get an item.	3rd position: Who can install, replace, or use the item.	4th position: Who can do complete repair* on the item.		5th position: Who determines disposition action on unserviceable items.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

***Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.**

Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Source Code	Application/Explanation
PA PB PC PD PE PF PG PH PR PZ	**NOTE** Items coded PC are subject to deterioration. Stocked items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code.
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MF - Made at field MH - Made at below depot/sustainment level ML - Made at SRA MD - Made at depot MG - Navy only	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) Column and listed in the bulk material functional group of this RPSTL. If the item is authorized to you by the third position of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AF - Assembled by field AH - Assembled by below depot/sustainment level AL - Assembled by SRA AD - Assembled by depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the Commercial and Government Entity Code (CAGEC) and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer’s P/N.
XD	Item is not stocked. Order an "XD" coded item through local purchase or normal supply channels using the CAGEC and P/N given, if no NSN is available.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

Maintenance Code	Application/Explanation
C -	Crew maintenance can service, remove, replace, and use the item.
F -	Field maintenance can remove, replace, and use the item.
H -	Below Depot Sustainment maintenance can remove, replace, and use the item.
L -	Specialized Repair Activity (SRA) can remove, replace, and use the item.
G -	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only).
K -	Contractor facility can remove, replace, and use the item.
Z -	Item is not authorized to be removed, replaced, or used at any maintenance level.
D -	Depot can remove, replace, and use the item.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

Maintenance Code	Application/Explanation
F -	Field is the lowest level that can do complete repair of the item.
H -	Below Depot Sustainment is the lowest level that can do complete repair of the item.
L -	SRA is the lowest level that can do complete repair of the item.
D -	Depot is the lowest level that can do complete repair of the item.
G -	Both afloat and ashore intermediate levels are capable of complete repair of item (Navy only).

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

K -	Complete repair is done at contractor facility.
Z -	Nonreparable. No repair is authorized.
B -	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	Application/Explanation
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the field level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment level.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L -	Reparable item. Condemnation and disposal not authorized below SRA.
A -	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
G -	Field level repair item. Condemn and dispose at either afloat or ashore intermediate levels (Navy only).
K -	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Column (3)). The NSN for the item is listed in this column.

CAGEC (Column (4)). The CAGEC is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column (5)). 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.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different P/N from the number listed.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

DESCRIPTION AND USABLE ON CODE (UOC) (Column (6)).

This column includes the following information:

1. The federal item name and, when required, a minimum description to identify the item.

2. Part numbers of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.

3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from Electromagnetic Pulse (EMP) damage during a nuclear attack.

4. The statement END OF FIGURE appears just below the last item description in Column (6) for a given figure in both the repair parts list and special tools list work packages.

QTY (Column (7)). The QTY (quantity per figure) Column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. **NATIONAL STOCK NUMBER (NSN) INDEX Work Package.** NSNs in this index are listed in National Item Identification Number (NIIN) sequence.

   STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number. For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

   FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.

   ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. Column. This item is also identified by the NSN listed on the same line.

2. **PART NUMBER (P/N) INDEX Work Package.** Part numbers in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combination which places the first letter or digit of each group in order "A" through "Z," followed by the numbers "0" through "9" and each following letter or digit in like order).

   PART NUMBER Column. Indicates the part number assigned to the item.

   FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tools list work packages.

   ITEM Column. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC:…" in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the RPSTL are:

Code	Used On
401	M203 Grenade Launcher
BC7	M203A1 Grenade Launcher
BJ9	M203A2 Grenade Launcher

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. Part numbers for bulk material are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in WP 0021.

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the NSN/Part Number (P/N) Index Work Packages and the bulk material list in the repair parts list work package.

HOW TO LOCATE REPAIR PARTS

1. **When NSNs or P/Ns Are Not Known.**

   First. Use the table of contents to determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

   Second. Find the figure covering the functional group or subfunctional group to which the item belongs.

   Third. Identify the item on the figure and note the number(s).

   Fourth. Look in the repair parts list work packages for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

2. **When NSN Is Known.**

   First. If you have the NSN, look in the STOCK NUMBER column of the NSN index work package. The NSN Index is arranged in NIIN sequence. Note the figure and item number next to the NSN.

   Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

3. **When P/N Is Known.**

   First. If you have the P/N and not the NSN, look in the PART NUMBER Column of the Part Number (P/N) Index work package. Identify the figure and item number.

   Second. Look up the item on the figure in the applicable repair parts list work package.

HOW TO LOCATE REPAIR PARTS - Continued

4. **When Reference Designator Is Known.**

   First. If you know the reference designator, look in the REFERENCE DESIGNATOR column of the reference designator index work package. Note the figure and item number.

   Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

ABBREVIATIONS

Abbreviation	Explanation
BOI	Basis of Issue
EMP	Electromagnetic Pulse
RPSTL	Repair Parts and Special Tools Lists
SMR	Source, Maintenance, and Recoverability Code
SRA	Specialized Repair Activity
TMDE	Test, Measurement, and Diagnostic Equipment
U/M	Unit of Measure
UOC	Usable on Code

END OF WORK PACKAGE

FIELD MAINTENANCE
GROUP 0000 40MM GRENADE LAUNCHER M203/M203A1/M203A2 W/E

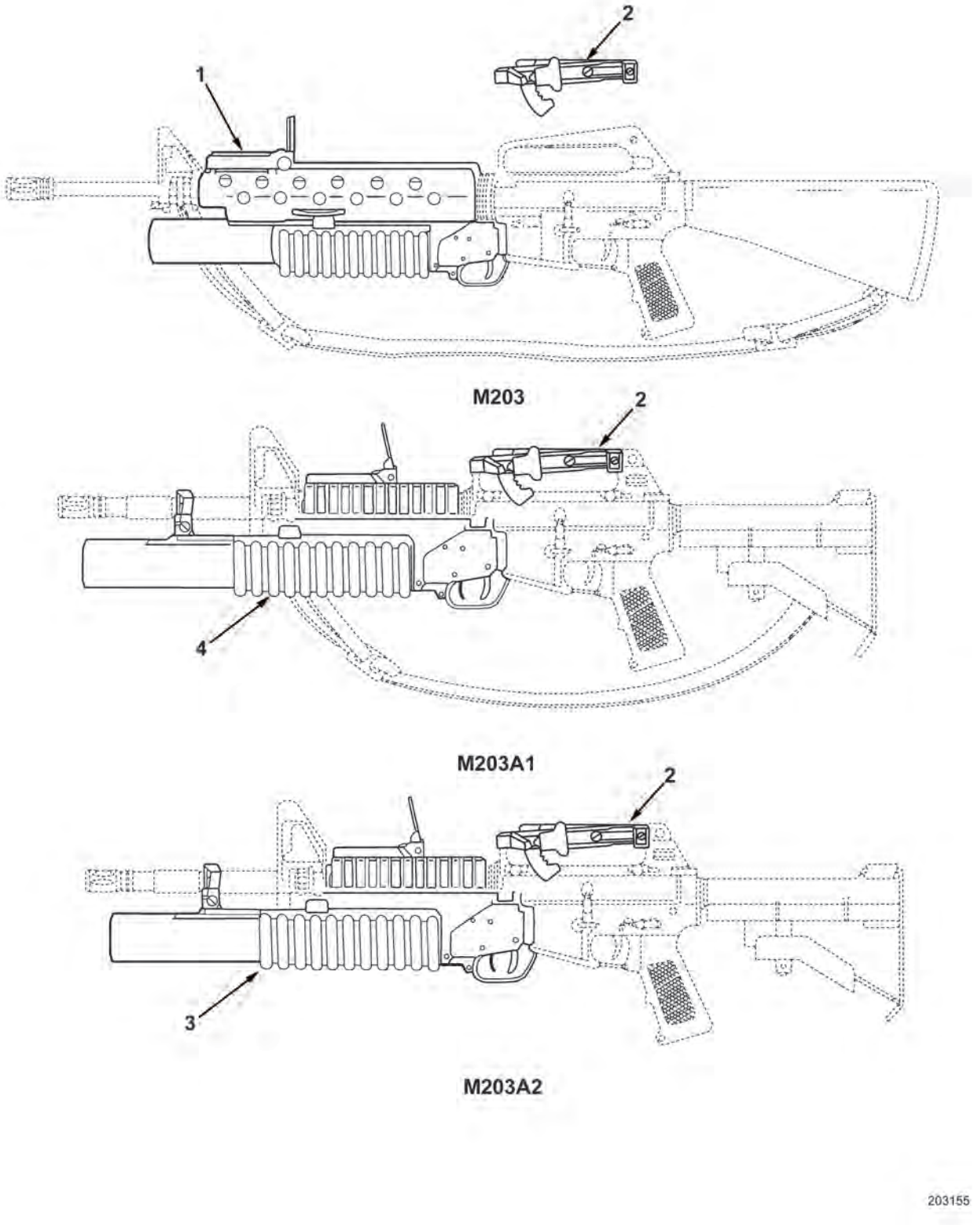


Figure 1. 40MM Grenade Launcher M203 W/E 11838703, M203A1 W/E 12597125, and M203A2 W/E 12999553.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0000 LAUNCHER, GRENADE, 40MM, M203/M203A1/M203A2 W/E	
					FIG. 1. 40MM GRENADE LAUNCHER M203 W/E 11838703, M203A1 W/E 12597125, AND M203A2 W/E 12999553.	
1	XAFFF		19204	8448300	LAUNCHER (M203) SEE FIG. 2 FOR BREAKDOWN UOC: 401	1
2	PAFFF	1010-01-442-2313	19200	12598114	SIGHT,GRENADE LAUN SEE FIG. 9 FOR BREAKDOWN UOC:	1
3	XAFFF		19200	12999552	LAUNCHER (M203A2) SEE FIG. 2 FOR BREAKDOWN UOC: BJ9	1
4	XAFFF		19200	12982965	LAUNCHER (M203A1) SEE FIG. 2 FOR BREAKDOWN UOC: BC7	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0100 40MM GRENADE LAUNCHER M203/M203A1/M203A2

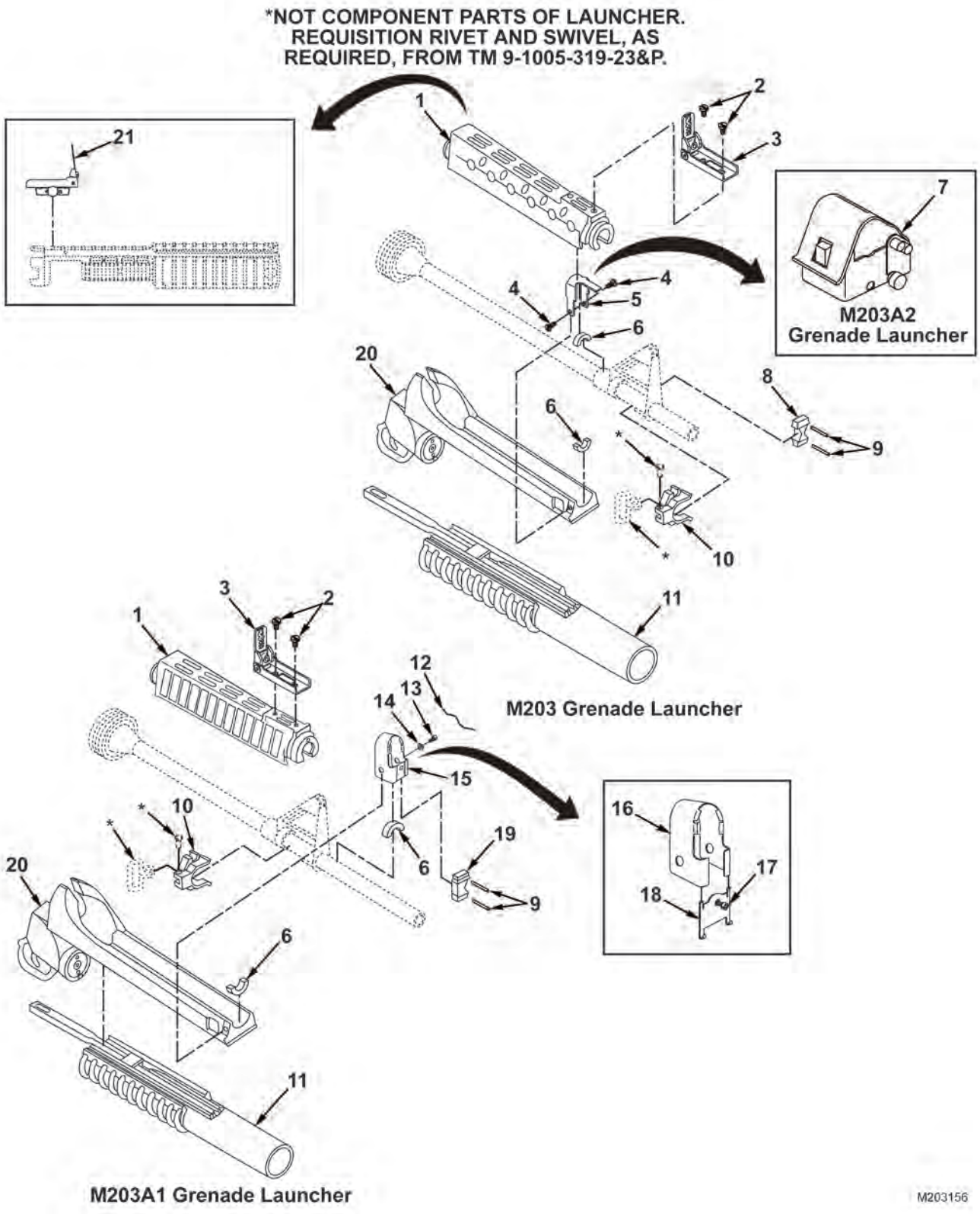


Figure 2. 40MM Grenade Launcher M203 8448300, M203A1 12982965, and M203A2 12999552.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0100 LAUNCHER, GRENADE, 40MM, M203/M203A1/M203A2 AND MOUNTING BRACKET ASSEMBLY	
					FIG. 2. 40MM GRENADE LAUNCHER M203 8448300, M203A1 12982965, AND M203A2 12999552.	
1	PAFZZ	1010-01-470-7105	19200	12990563	GUARD,HAND,GRENADE M203A1 UOC: BC7	1
1	PAFZZ	1010-00-438-7431	19204	8448377	GUARD,HAND,GRENADE (HAND GUARD ASSY) M203 UOC: 401	1
2	PAFZZ	5305-00-182-9265	96906	MS51957-43B	SCREW,MACHINE UOC: 401	2
3	PAFFF	1010-01-285-1019	19204	8448330	SIGHT ASSEMBLY,LEAF SEE FIG. 6 FOR BREAKDOWN UOC: 401,BC7	1
4	PAFZZ	5305-00-150-9212	88044	AN502-10-8	SCREW,MACHINE UOC: 401	2
5	PAFZZ	5340-01-376-0876	19200	12011998	BRACKET,MOUNTING UOC: 401	1
6	PAFZZ	3120-00-438-7332	19204	8448320	BUSHING HALF,SLEEVE UOC: 401, BC7	2
7	PAFFF	1005-01-452-3528	19200	12973116	BRACKET,QUICK RELEA SEE FIG. 3 FOR BREAKDOWN UOC: BJ9	1
8	PAFZZ	5340-01-440-7610	19200	12012059	CLAMP,SYNCHRO	1
9	PAFZZ	5315-00-690-0544	96906	MS39086-93	PIN,SPRING	2
10	PAFZZ	1010-01-264-6517	19200	12598617	MOUNT,SWIVEL	1
11	PAFFF	1010-01-376-3342	19200	12012005	BARREL,GRENADE LAUN SEE FIG. 7 FOR BREAKDOWN	1
12	PAFZZ	9505-00-293-4208	80205	MS20995C32	WIRE,NONELECTRICAL UOC: 401,BC7	1
13	PAFZZ	5305-01-442-0157	19200	12957129	SCREW,CAP,SOCKET HE UOC: BC7	2
14	PAFZZ	5310-00-160-9817	80205	NAS1149C0363B	WASHER,FLAT UOC: BC7	2
15	PAFFF	5340-01-442-0165	19200	12957126	BRACKET,MOUNTING UOC: BC7	1
16	XAFZZ		19200	12957127	.SUPPORT BRACKET UOC:BC7	1
17	PAFZZ	5305-01-442-0157	19200	12957129	.SCREW,CAP,SOCKET HE UOC: BC7	1
18	PAFZZ	1010-01-442-0156	19200	12957128	.CLAMP ASSEMBLY,BRAC UOC: BC7	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
19	PAFZZ	5340-01-474-2845	19200	12991254	CLAMP,SYNCHRO UOC: BC7,BJ9	1
20	XAFFF		19204	8448380-1	RECEIVER ASSEMBLY (M203) UOC: 401	1
20	XAFFF		19200	8448380-2	RECEIVER ASSEMBLY (M203A1) UOC: BC7	1
20	XAFFF		19200	8448380-3	RECEIVER ASSEMBLY (M203A2) UOC: BJ9	1
21	PAFFF	1010-01-453-5387	19200	12598117	SEE FIG. 5 FOR BREAKDOWN LEAF SIGHT AND GRAB SEE FIG. 5 FOR BREAKDOWN UOC: BJ9	1

END OF FIGURE

FIELD MAINTENANCE
GROUP 0200 QUICK RELEASE BRACKET

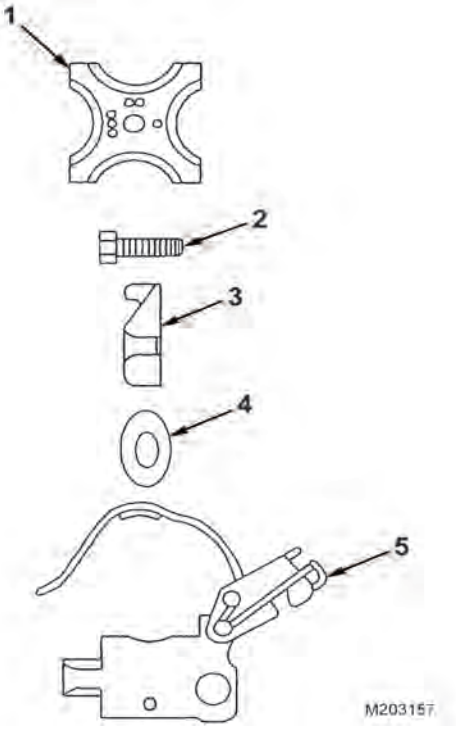


Figure 3. Quick Release Bracket 12973116.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0200 QUICK RELEASE BRACKET	
					FIG. 3. QUICK RELEASE BRACKET 12973116	
1	PAFZZ	5365-01-453-9287	19200	12973129	SPACER,PLATE UOC: BJ9	1
2	PAFZZ	5305-01-452-9639	19200	12973130	SCREW,CLOSE TOLERAN UOC: BJ9	2
3	PAFZZ	1005-01-453-1634	19200	12973127	BASE,RIGHT HALF UOC: BJ9	1
4	PAFZZ	5310-01-452-9635	19200	12973140	WASHER,SPRING TENSI UOC: BJ9	2
5	XAFFF		19200	12973117	BRACKET,LEFT SEE FIG.4 FOR BREAKDOWN UOC: BJ9	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0201 LEFT BRACKET ASSEMBLY

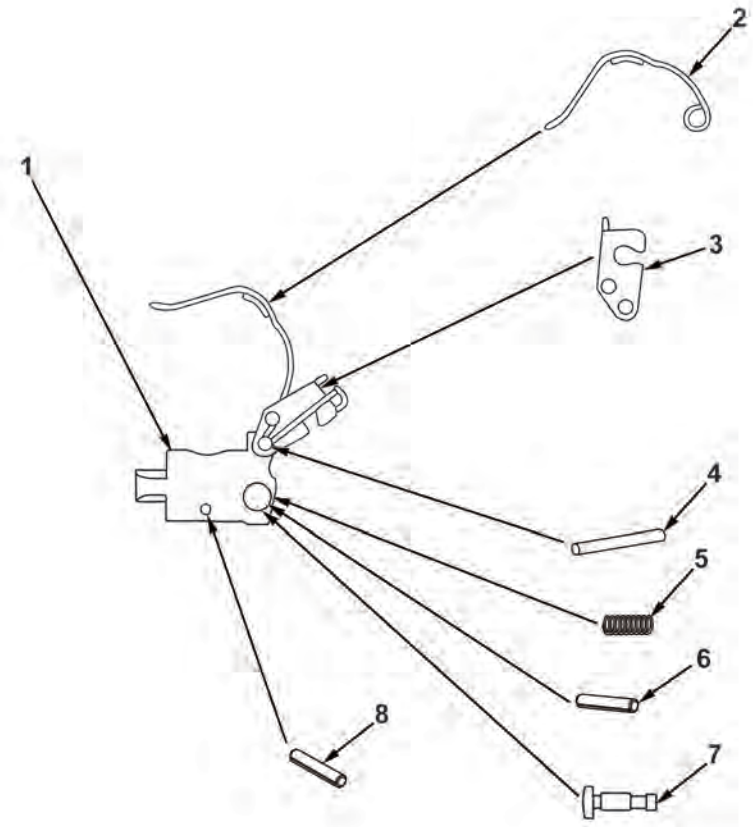


Figure 4. Left Bracket Assembly 12973117.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0201 LEFT BRACKET ASSEMBLY	
					FIG. 4. LEFT BRACKET ASSEMBLY 12973117.	
1	XAFZZ		19200	12973118	LEFT HALF BASE UOC: BJ9	1
2	XAFZZ		19200	12973121	LATCH ARM ASSEMBLY UOC: BJ9	1
3	XAFZZ		19200	12973120	LATCH LEVER UOC: BJ9	1
4	XAFZZ		19200	12973124	RIVET UOC: BJ9	2
5	PAFZZ	5360-01-502-5468	19200	12999210	SPRING,HELICAL,COMP UOC: BJ9	1
6	PAFZZ	5315-00-847-3735	80205	MS16562-190	PIN,SPRING UOC: BJ9	1
7	PAFZZ	5340-01-502-5471	19200	12999211	PLUNGER,DETENT UOC: BJ9	1
8	PAFZZ	5315-00-823-8743	80205	MS16562-219	PIN,SPRING UOC: BJ9	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0300 LEAF SIGHT AND RAIL GRABBER ASSEMBLY

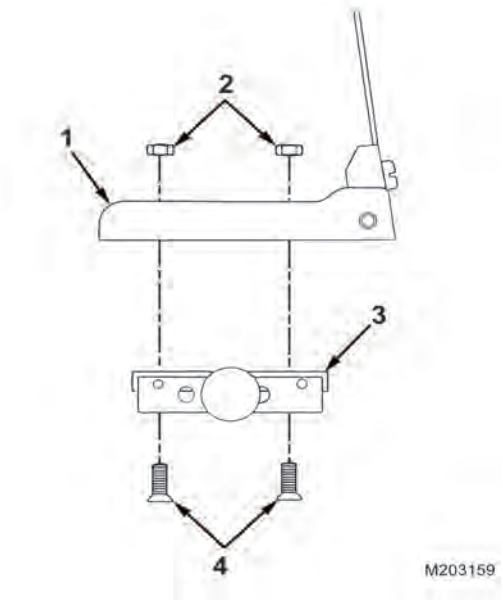


Figure 5. Leaf Sight and Rail Grabber Assembly 12598117.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0300 LEAF SIGHT AND RAIL GRABBER ASSEMBLY	
					FIG. 5. LEAF SIGHT AND RAIL GRABBER ASSEMBLY 12598117.	
1	PAFFF	1010-01-453-5384	19200	12598115	SIGHT,LEAF ASSEMBLY SEE FIG. 6 FOR BREAKDOWN UOC: BJ9	1
2	PAFZZ	5310-00-420-0737	80205	MS35649-284B	NUT,PLAIN,HEXAGON UOC: BJ9	2
3	PAFZZ	5340-01-466-7727	19200	12598130	BRACKET,MOUNTING UOC: BJ9	1
4	PAFZZ	5305-01-463-3305	96906	MS24671-13B	SCREW,CAP,SOCKET HE UOC: BJ9	2
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0400 LEAF SIGHT ASSEMBLY M203/M203A1/M203A2

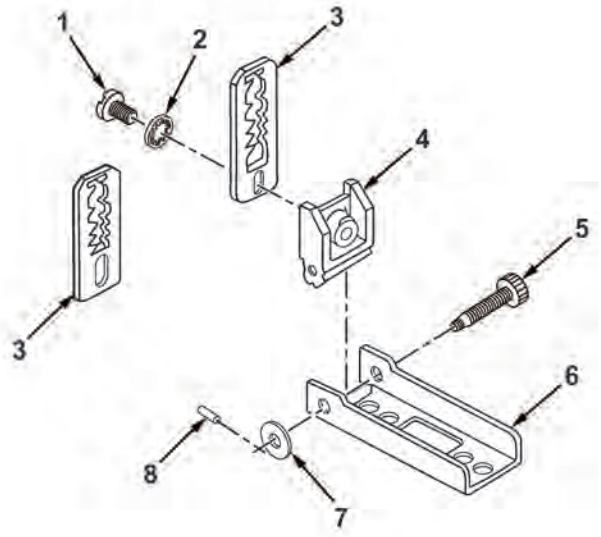


Figure 6. Leaf Sight Assembly M203 and M203A1 8448330, M203A2 12598115.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0400 LEAF SIGHT ASSEMBLY	
					FIG. 6. LEAF SIGHT ASSEMBLY M203 AND M203A1 8448330, M203A2 12598115.	
1	PAFZZ	5305-00-182-9241	19200	8448331	SCREW,MACHINE	1
2	PAFZZ	5310-00-176-6362	19204	8448328	WASHER,LOCK	1
3	PAFZZ	1010-00-438-7343	19204	8448322	LEAF,SIGHT M203/M203A1 UOC: 401,BC7	1
3	PAFZZ	1005-01-454-5541	19200	12598129	SIGHT,LEAF M203A2 UOC: BJ9	1
4	PAFZZ	5340-00-438-7337	19200	8448321	BRACKET,MOUNTING	1
5	PAFZZ	5305-00-492-8196	19200	8448340	SETSCREW	1
6	PAFZZ	1010-01-441-5507	19200	12012037	BASE,LEAF SIGHT	1
7	PAFZZ	5310-01-396-2208	80205	NAS1149CN632B	WASHER,FLAT	1
8	PAFZZ	5315-01-475-3483	80205	NASM39086-66	PIN,SPRING	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0500 BARREL ASSEMBLY

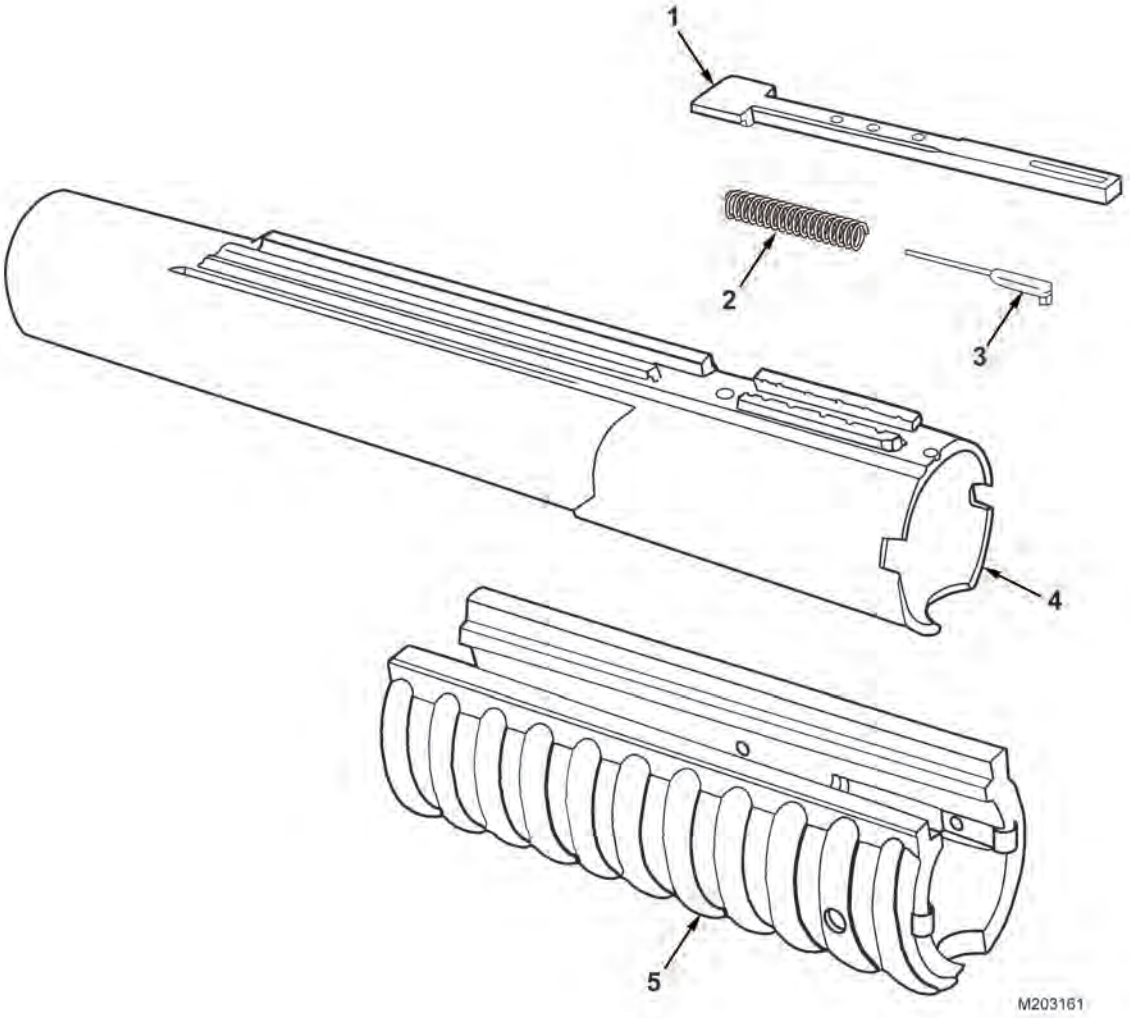


Figure 7. Barrel Assembly 12012005.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0500 BARREL ASSEMBLY	
					FIG. 7. BARREL ASSEMBLY 12012005.	
1	PAFZZ	1005-00-438-7321	19204	8448315	BARREL,EXTENSION	1
2	PAFZZ	5360-00-177-4220	19204	8448306	SPRING,HELICAL,COMP	1
3	PAFZZ	1010-00-438-7274	19204	8448312	LOCATOR,CARTRIDGE	1
4	XAFZZ		19200	12012006	BARREL	1
5	PAFZZ	1010-01-384-3618	19200	12012007	GRIP,GRENADE LAUNCH	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0600 RECEIVER ASSEMBLY M203/M203A1/M203A2

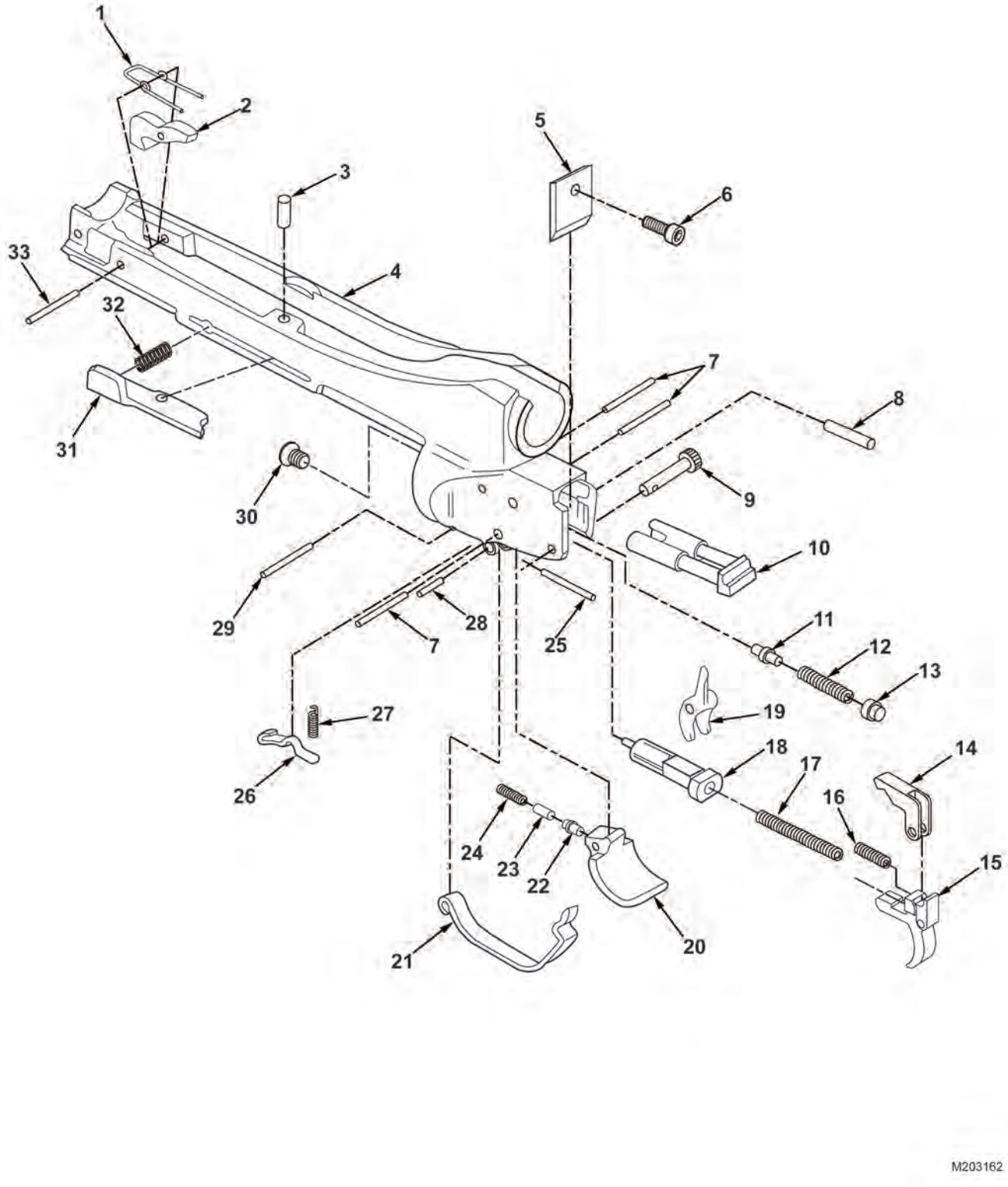


Figure 8. Receiver Assembly M203 8448380-1, M203A1 8448380-2, and M203A2 8448380-3.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0600 RECEIVER ASSEMBLY	
					FIG. 8. RECEIVER ASSEMBLY M203 8448380-1, M203A1 8448380-2, AND M203A2 8448380-3.	
1	PAFZZ	5360-00-182-4798	19204	8448326	SPRING,HELICAL,TORS	1
2	PAFZZ	1010-00-438-7375	19204	8448348	PAWL	1
3	PAFZZ	5315-00-176-6387	19204	8448350	PIN,STRAIGHT,HEADLE	1
4	XAFFF		19200	8448338-3	RECEIVER (M203A2) UOC: BJ9	1
4	XAFFF		19200	8448338-2	RECEIVER (M203A1) UOC: BC7	1
4	XAFDD		19204	8448338-1	RECEIVER,CARTRIDGE (M203) UOC: 401	1
5	PAFZZ	1010-00-888-1078	19204	8448776	PLATE,BACK	1
6	PAFZZ	5305-01-213-9942	80205	NAS1352-06LB4P	SCREW,CAP,SOCKET HE	1
7	PAFZZ	5315-00-103-7099	19204	8448781	PIN,SPRING	3
8	PAFZZ	5315-00-903-7200	80205	MS39086-163	PIN,SPRING (BARREL NUT)	1
9	PAFZZ	5315-00-237-1896	19200	12002921	PIN,STRAIGHT,HEADED (TRIGGER PIN)	1
10	PAFZZ	1010-00-888-1077	19204	8448775	FOLLOWER GUIDE ASSE	1
11	PAFZZ	1010-00-438-7271	19204	8448302	EJECTOR,CARTRIDGE	1
12	PAFZZ	5360-01-113-6247	19204	12006355	SPRING,HELICAL,COMP	1
13	PAFZZ	5340-00-438-7292	19200	8448313	DISK,SOLID,PLAIN	1
14	PAFZZ	1010-00-181-3413	19204	8448342	SEAR	1
15	PAFZZ	1010-00-439-1773	19204	8448341	TRIGGER	1
16	PAFZZ	5360-01-567-1835	19200	MS24585-1026	SPRING,HELICAL,COMP	1
17	PAFZZ	5360-00-007-4866	19204	8448777	SRPING,HELICAL,COMP	1
18	PAFZZ	1010-00-348-8433	19204	12002970	PIN,FIRING	1
19	PAFZZ	1010-00-438-7358	19200	8448332	LEVER,COCKING	1
20	PAFZZ	1055-00-888-1072	19204	8448773	SAFETY,GRENADE LAUN	1
21	PAFZZ	1010-00-439-1788	19204	8448375	GUARD,TRIGGER	1
22	PAFZZ	5340-00-438-7356	19200	8448324	PLUNGER,DETENT	1
23	PAFZZ	5315-00-176-6551	96906	MS39086-39	PIN,SPRING	1
24	PAFZZ	5360-01-037-6448	96906	MS24585-1025	SPRING,HELICAL,COMP	1
25	PAFZZ	5315-00-282-3642	80205	MS16562-96	PIN,SPRING	1
26	PAFZZ	1010-00-618-1483	19204	8448386	EXTRACTOR,CARTRIDGE	1
27	PAFZZ	5360-00-112-9415	86906	MS24585-1051	SPRING,HELICAL,COMP	1
28	PAFZZ	5315-00-843-7986	80205	MS16562-33	PIN,SPRING	2
29	PAFZZ	5315-00-616-4261	80205	MS16562-28	PIN,SPRING	1
30	PAFZZ	1010-00-438-7272	19200	8448303	INSERT,BREECH	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
31	PAFZZ	5340-00-438-7376	19200	8448349	LEVER,LOCK-RELEASE	1
32	PAFZZ	5360-00-177-4217	19204	8448304	SPRING,HELICAL,COMP	1
33	PAFZZ	5315-00-844-5599	96906	MS16555-632	PIN,STRAIGHT,HEADLE	1

END OF FIGURE

FIELD MAINTENANCE
GROUP 0700 QUADRANT SIGHT ASSEMBLY M203/M203A1/M203A2

NOTE

When replacing item 2 for the first time, also replace item 1, Figure 10. These are new parts and are not compatible with the parts they replace.

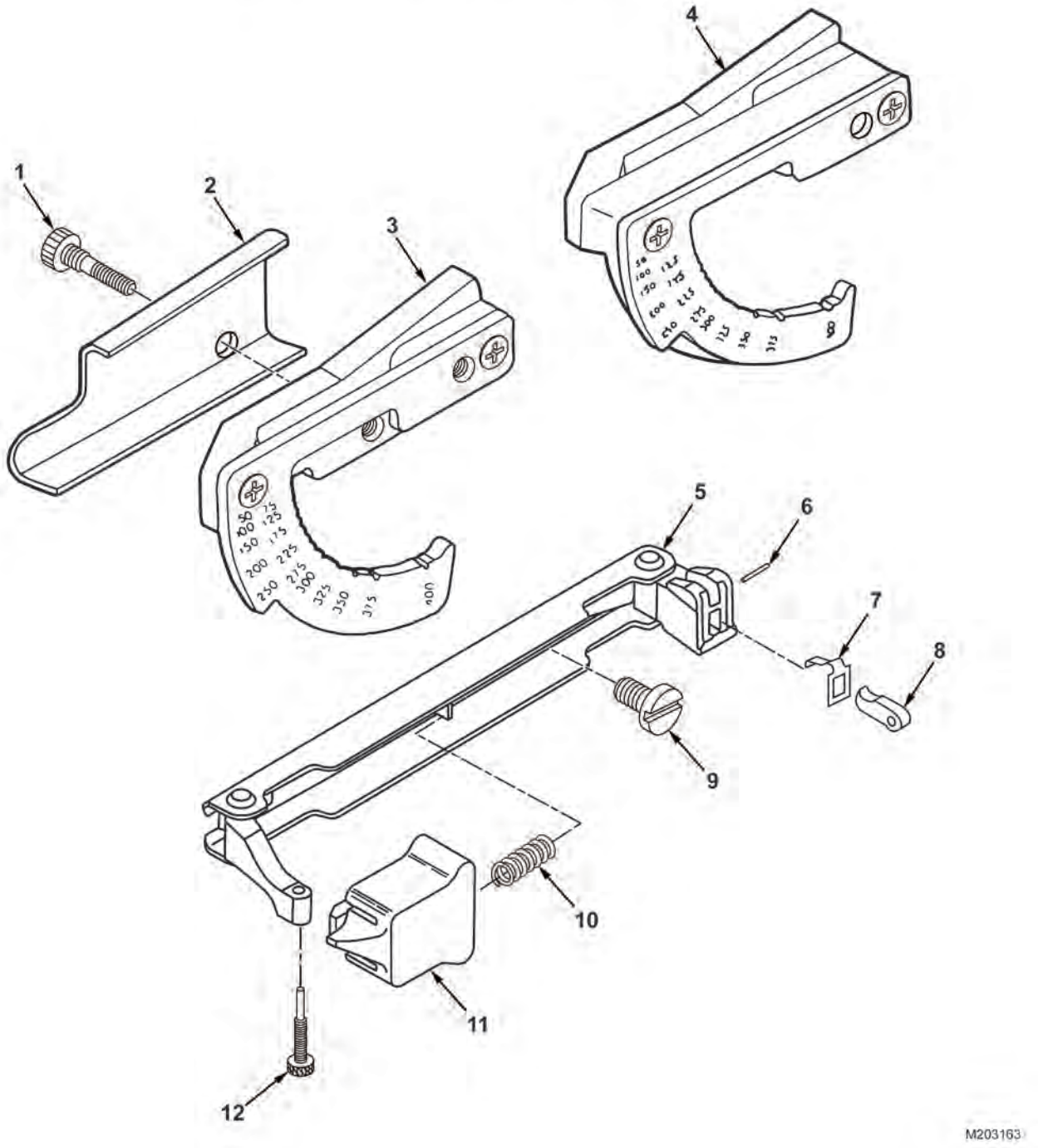


Figure 9. Quadrant Sight Assembly M203, M203A1, and M203A2 12598114.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0700 QUADRANT SIGHT ASSEMBLY	
					FIG. 9. QUADRANT SIGHT ASSEMBLY M203, M203A1, AND M203A2 12598114.	
1	PAFZZ	5306-00-185-8016	19200	12002880	BOLT,SHOULDER (MOUNTING)	1
2	PAFZZ	5340-01-475-4291	19200	12991504	CLAMP,SYNCHRO	1
3	AFFFF		19200	9346305	QUADRANT,RANGE SEE FIG. 10 FOR BREAKDOWN UOC: 401	1
4	AFFFF		19200	12598116	QUAD RANGE ASSEMBLY (M203A1) SEE FIG. 10 FOR BREAKDOWN	1
5	PAFFF	1010-01-285-1016	19204	12002885	SIGHT ARM ASSEMBLY SEE FIG. 12 FOR BREAKDOWN	1
6	PAFZZ	5315-01-013-2553	80205	MS39086-4	PIN,SPRING	1
7	PAFZZ	5340-01-122-9409	19200	12002876	CLIP,SPRING TENSION	1
8	PAFZZ	1010-01-122-9679	19200	12002878	APERTURE,SIGHT	1
9	PAFZZ	5305-01-135-9500	19204	12002875	SCREW,SHOULDER	1
10	PAFZZ	5360-01-135-3710	19204	12002874	SPRING,HELICAL,COMP	1
11	PAFFF	1010-01-441-1621	19200	9346306	LATCH ASSEMBLY SEE FIG. 11 FOR BREAKDOWN	1
12	PAFZZ	1010-00-438-7385	19200	8448360	SIGHT,FRONT	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0701 RANGE QUADRANT ASSEMBLY M203/M203A1/M203A2

NOTE

When replacing item 1 for the first time, also replace item 2, Figure 9. These are new parts and are not compatible with the parts they replace.

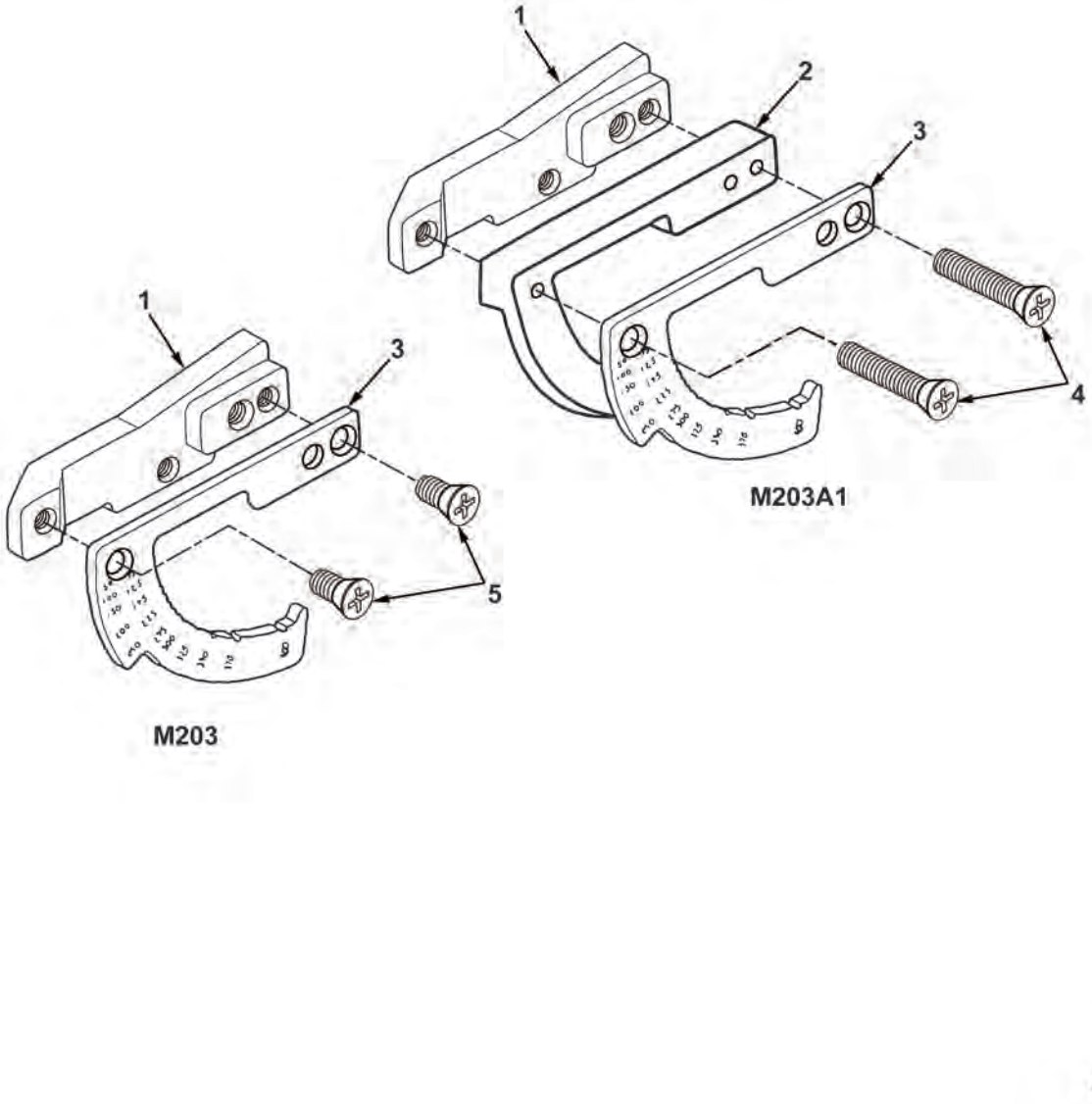


Figure 10. Quadrant, Range Assembly M203 9346305 and M203A1/M203A2 12598116.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00701 QUADRANT, RANGE ASSEMBLY	
					FIG. 10. QUADRANT, RANGE ASSEMBLY M203 9346305 AND M203A1/M203A2 12598116.	
1	PAFZZ	5340-01-474-9020	19200	12991510	CLAMP,SYNCHRO	1
2	PAFZZ	5365-01-441-7384	19200	12598113	SPACER,SPECIAL SHAP QUADRANT SIGHT	1
3	PAFZZ	1290-01-124-5213	19200	9346309	QUADRANT,FIRE CONTR	1
4	PAFZZ	5305-00-455-2550	80205	MS51959-28B	SCREW,MACHINE UOC: 401	2
5	PAFZZ	5305-00-417-5264	80205	MS51959-34B	SCREW,MACHINE	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0702 LATCH ASSEMBLY

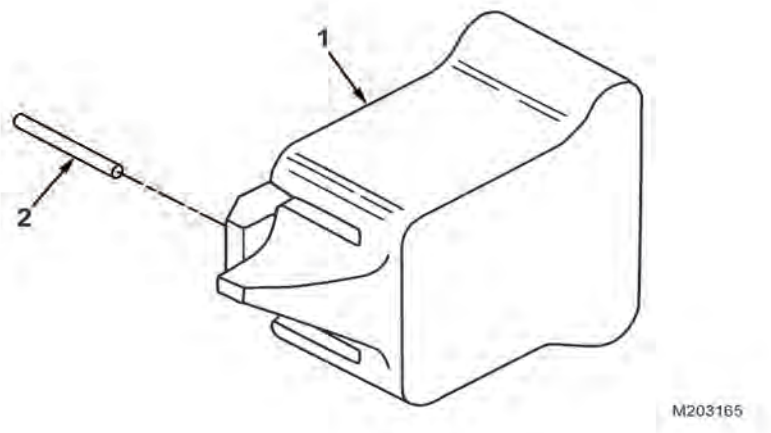


Figure 11. Latch Assembly 9346306.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0702 LATCH ASSEMBLY	
					FIG. 11. LATCH ASSEMBLY 9346306.	
1	XAFZZ		19200	9346307	LATCH,SIGHT	1
2	PAFZZ	5315-01-137-7188	19204	9346311	PIN,STRAIGHT,HEADLE	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 0703 SIGHTARM ASSEMBLY

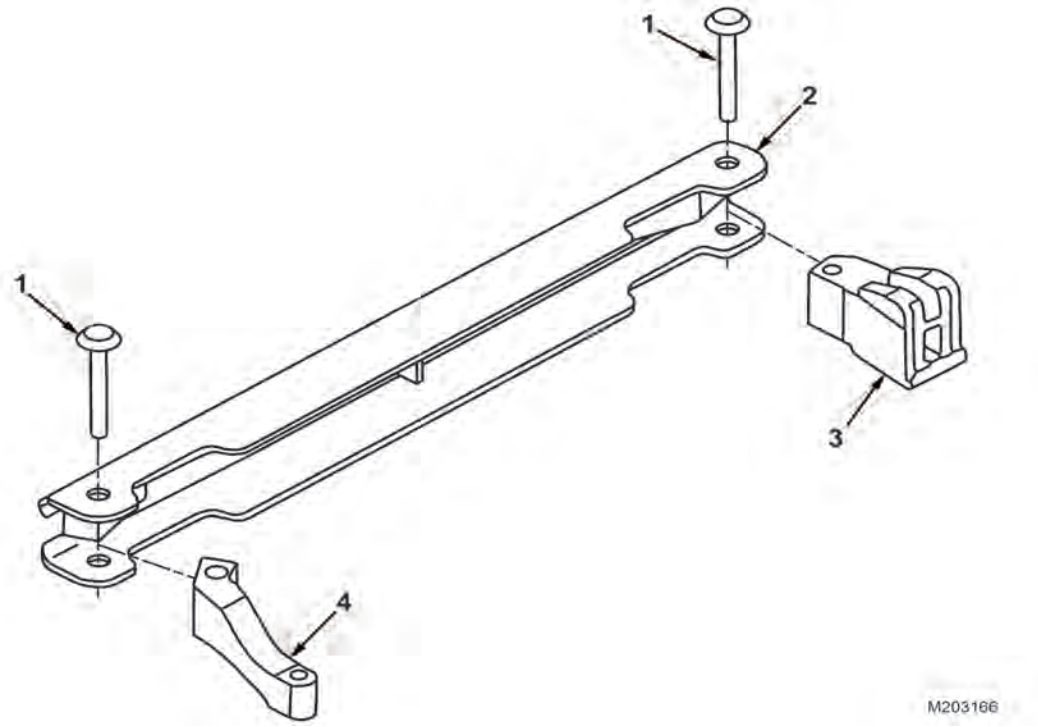


Figure 12. Sightarm Assembly 12002885.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0703 SIGHTARM ASSEMBLY	
					FIG. 12. SIGHTARM ASSEMBLY 12002885.	
1	PAFZZ	5320-01-136-7161	19204	12002884	RIVET,TUBULAR	2
2	XAFZZ		19200	12002881	ARM,QUADRANT SIGHT	1
3	PAFZZ	1010-01-122-9410	19200	12002877	ARM,SIGHT APERTURE	1
4	PAFZZ	1010-01-122-9408	19200	12002873	ARM,SIGHT POST	1
					END OF FIGURE	

FIELD MAINTENANCE
GROUP 2604 SPECIAL TOOLS

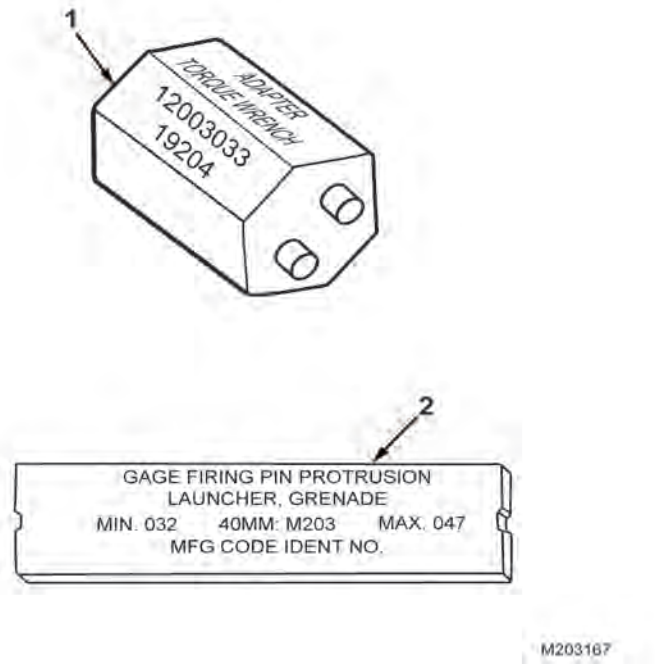


Figure 13. Special Tools.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 2604 SPECIAL TOOLS	
					FIG. 13. SPECIAL TOOLS.	
1	PAFZZ	5120-01-047-3294	19204	12003033	ADAPTER,TORQUE WREN	1
2	PAFZZ	5220-00-348-8434	19204	12002976	GAGE,FIRING PIN PRO	1
					END OF FIGURE	

FIELD MAINTENANCE
NATIONAL STOCK NUMBER (NSN) INDEX

STOCK NUMBER	FIG.	ITEM
5360-00-007-4866	8	17
5315-00-103-7099	8	7
5360-00-112-9415	8	27
5305-00-150-9212	2	4
5310-00-160-9817	2	14
5310-00-176-6362	6	2
5315-00-176-6387	8	3
5315-00-176-6551	8	23
5360-00-177-4217	8	32
5360-00-177-4220	7	2
1010-00-181-3413	8	14
5360-00-182-4798	8	1
5305-00-182-9241	6	1
5305-00-182-9265	2	2
5306-00-185-8016	9	1
5315-00-237-1896	8	9
5315-00-282-3642	8	25
9505-00-293-4208	2	12
1010-00-348-8433	8	18
5220-00-348-8434	13	2
5305-00-417-5264	10	5
5310-00-420-0737	5	2
1010-00-438-7271	8	11
1010-00-438-7272	8	30
1010-00-438-7274	7	3
5340-00-438-7292	8	13
1005-00-438-7321	7	1
3120-00-438-7332	2	6
5340-00-438-7337	6	4
1010-00-438-7343	6	3
5340-00-438-7356	8	22
1010-00-438-7358	8	19
1010-00-438-7375	8	2
5340-00-438-7376	8	31
1010-00-438-7385	9	12
1010-00-438-7431	2	1
1010-00-439-1773	8	15
1010-00-439-1788	8	21
5305-00-455-2550	10	4
5305-00-492-8196	6	5
5315-00-616-4261	8	29
1010-00-618-1483	8	26
5315-00-690-0544	2	9
5315-00-843-7986	8	28
5315-00-844-5599	8	33
5315-00-847-3735	4	6
1055-00-888-1072	8	20
1010-00-888-1077	8	10
1010-00-888-1078	8	5
5315-00-903-7200	8	8
5315-00â823â8743	4	8
5315-01-013-2553	9	6
5360-01-037-6448	8	24
5120-01-047-3294	13	1
5360-01-113-6247	8	12
1010-01-122-9408	12	4
5340-01-122-9409	9	7
1010-01-122-9410	12	3
1010-01-122-9679	9	8
1290-01-124-5213	10	3
5360-01-135-3710	9	10
5305-01-135-9500	9	9
5320-01-136-7161	12	1
5315-01-137-7188	11	2
5305-01-213-9942	8	6
1010-01-264-6517	2	10
1010-01-285-1016	9	5
1010-01-285-1019	2	3
5340-01-376-0876	2	5
1010-01-376-3342	2	11
1010-01-384-3618	7	5
5310-01-396-2208	6	7
5340-01-440-7610	2	8
1010-01-441-1621	9	11
1010-01-441-5507	6	6
5365-01-441-7384	10	2
1010-01-442-0156	2	18
5305-01-442-0157	2	13
	2	17
5340-01-442-0165	2	15
1010-01-442-2313	1	2
1005-01-452-3528	2	7
5310-01-452-9635	3	4
5305-01-452-9639	3	2
1005-01-453-1634	3	3
1010-01-453-5384	5	1
1010-01-453-5387	2	21
5365-01-453-9287	3	1
1005-01-454-5541	6	3
5305-01-463-3305	5	4
5340-01-466-7727	5	3
1010-01-470-7105	2	1
5340-01-474-2845	2	19
5340-01-474-9020	10	1
5315-01-475-3483	6	8
5340-01-475-4291	9	2

STOCK NUMBER	FIG.	ITEM
5360-01-502-5468	4	5
5340-01-502-5471	4	7
5360-01-567-1835	8	16

END OF WORK PACKAGE

FIELD MAINTENANCE
PART NUMBER (P/N) INDEX

PART NUMBER	FIG.	ITEM
AN502-10-8	2	4
MS16555-632	8	33
MS16562-190	4	6
MS16562-28	8	29
MS16562-33	8	28
MS16562-96	8	25
MS16562â219	4	8
MS20995C32	2	12
MS24585-1025	8	24
MS24585-1026	8	16
MS24585-1051	8	27
MS24671-13B	5	4
MS35649-284B	5	2
MS39086-163	8	8
MS39086-39	8	23
MS39086-4	9	6
MS39086-93	2	9
MS51957-43B	2	2
MS51959-28B	10	4
MS51959-34B	10	5
NAS1149C0363B	2	14
NAS1149CN632B	6	7
NAS1352-06LB4P	8	6
NASM39086-66	6	8
12002873	12	4
12002874	9	10
12002875	9	9
12002876	9	7
12002877	12	3
12002878	9	8
12002880	9	1
12002881	12	2
12002884	12	1
12002885	9	5
12002921	8	9
12002970	8	18
12002976	13	2
12003033	13	1
12006355	8	12
12011998	2	5
12012005	2	11
12012006	7	4
12012007	7	5
12012037	6	6
12012059	2	8
12598113	10	2
12598114	1	2
12598115	5	1
12598116	9	4
12598117	2	21
12598129	6	3
12598130	5	3
12598617	2	10
12957126	2	15
12957127	2	16
12957128	2	18
12957129	2	13
	2	17
12973116	2	7
12973117	3	5
12973118	4	1
12973120	4	3
12973121	4	2
12973124	4	4
12973127	3	3
12973129	3	1
12973130	3	2
12973140	3	4
12982965	1	4
12990563	2	1
12991254	2	19
12991504	9	2
12991510	10	1
12999210	4	5
12999211	4	7
12999552	1	3
8448300	1	1
8448302	8	11
8448303	8	30
8448304	8	32
8448306	7	2
8448312	7	3
8448313	8	13
8448315	7	1
8448320	2	6
8448321	6	4
8448322	6	3
8448324	8	22
8448326	8	1
8448328	6	2
8448330	2	3
8448331	6	1
8448332	8	19
8448338-1	8	4
8448338-2	8	4
8448338-3	8	4

PART NUMBER	FIG.	ITEM
8448340	6	5
8448341	8	15
8448342	8	14
8448348	8	2
8448349	8	31
8448350	8	3
8448360	9	12
8448375	8	21
8448377	2	1
8448380-1	2	20
8448380-2	2	20
8448380-3	2	20
8448386	8	26
8448773	8	20
8448775	8	10
8448776	8	5
8448777	8	17
8448781	8	7
9346305	9	3
9346306	9	11
9346307	11	1
9346309	10	3
9346311	11	2

END OF WORK PACKAGE

CHAPTER 6

SUPPORTING INFORMATION

FIELD MAINTENANCE
REFERENCES

SCOPE

This Work Package (WP) lists all field manuals, forms, technical manuals/technical orders, miscellaneous publications, and pamphlets referenced in this manual.

FIELD MANUALS

AFMAN 44-163(I)	Air Force First Aid
FM 4-25.11	Army First Aid
MCRP 3-02G	Marine Corps First Aid
NTRP 4-02.1.1	Navy First Aid

FORMS

AFTO Form 22	Technical Manual (TM) Change Recommendation and Reply
DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2404	Equipment Inspection and Maintenance Worksheet
NAVMC 10722	Recommended Changes to Publications/Logistics-Maintenance Data Coding
SF 364	Report of Discrepancy (ROD)
SF 368	Product Quality Deficiency Report (PQDR)

TECHNICAL MANUALS/TECHNICAL ORDERS

TM 4700-15/1H	Ground Equipment Record Procedures Manual
TM 750-244-7	Procedures for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090, and 1095 to Prevent Enemy Use
TM 9-1005-249-10	Operator's Manual for Rifle, 5.56-MM, M16 (NSN 1005-00-856-6885) Rifle, 5.56MM, M16A1 (1005-00-073-9421)
TM 9-1005-249-23&P	Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Rifle, 5.56MM, M16 (NSN 1005-00-856-6885) (EIC: 4F7), Rifle, 5.56MM, M16A1 (1005-00-073-9421) (EIC: 4FC)
TM 9-1005-319-10	Operator's Manual for Rifle, 5.56 MM, M16A2 W/E (NSN 1005-01-128-9936) (EIC: 4GM); Rfle, 5.56 MM, M16A3 (1005-01-357–5112); Rifle, 5.56 MM, M16A4 (1005-01-383-2872) (EIC: 4F9); Carbine, 5.56 MM, M4 W/E

TECHNICAL MANUALS/TECHNICAL ORDERS - Continued

	(1005-01-231-0973) (EIC: 4FJ); Carbine, 5.56 MM, M4A1 (1005-01-382-0953) (EIC: 4GC)
TM 9-1005-319-23&P	Field Maintenance Manual (Including Repair Parts and Special Tools List) for Rifle, 5.56MM, M16A2 W/E PN 9349000 (NSN 1005-01-128-9936) (EIC: 4GM); Rifle, 5.56MM, M16A3 W/E, PN 12012000 (1005-01-357-5112) Rifle, 5.56MM, M16A4, W/E PN 12973001 (1005-01-383-2872) (EIC: 4F9); Carbine, 5.56MM, M4 PN 9390000 (1005-01-231-0973) (EIC: 4FJ) Carbine, 5.56MM, M4A1, PN 12972700 (1005-01-382-0953) (EIC: 4GC)
TM 9-1010-221-10	Operator's Manual for Grenade Launcher, 40-MM: M203 (NSN 1010-00-179-6447); Grenade Launcher, 40-MM M203A1 (1010-01-434-9028); Headquarters, Department of the Army, Air Force, Marine Corps, and Navy
TM 05538C-10/1A	Operator's Manual w/Components List for Rifle, 5.56MM, M16A2 W/E and Carbine, 5.56-MM M4 W/E
TM 05538/10012-IN	Organizational and Intermediate Maintenance Manual with Repair Parts List (RPL)
TO 00-35D-54	USAF Deficiency Reporting, Investigation, and Resolution
TO 00-5-1	AF Technical Order System
TO 33K-1-100	Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries

MISCELLANEOUS PUBLICATIONS

AFI 21-101	Aircraft and Equipment Maintenance Management
AR 700-138	Army Logistics Readiness and Sustainability
AR 750-1	Army Materiel Maintenance Policy and Retail Maintenance Operations
CTA 8-100	Army Medical Department Expendable/Durable Iterms
CTA 50-909	Field and Garrison Furnishings and Equipment
CTA 50-970	Expendable/Durable Items (Except: Medical, Class V Repair Parts, and Heraldic Items)
DOD Directive 5230.25	Withholding of Unclassified Technical Data From Public Disclosure
DTR 4500.9-R	Defense Transportation Regulation (DTR)
MCO 4855.10B	Product Quality Deficiency Report (PQDR)
MCO P4450.7	Marine Corps Warehousing Manual
SPI 00-856-6885	Special Packaging Instructions for Corrugated and Fiberboard Boxes

PAMPHLETS

DA PAM 25-30	Consolidated Index of Army Publications and Blank Forms
PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in Column (4) as:

Field – includes two subcolumns, Crew (C) and Maintainer (F).
Sustainment – includes two subcolumns, Below Depot (H) and Depot (D).

The maintenance to be performed at field and sustainment levels is described as follows:

1. Crew maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "C" in the third position of the SMR code. A "C" appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.

2. Maintainer maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the field maintenance level. Items are returned to the user after maintenance is performed at this level.

3. Below depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level.

4. Depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this level.

The Tools and Test Equipment Requirements Table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

INTRODUCTION - Continued

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gaugings and evaluation of cannon tubes.

2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.

3. Service. Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:

    a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.

    b. Repack. To return item to packing box after service and other maintenance operations.

    c. Clean. To rid the item of contamination.

    d. Touch up. To spot paint scratched or blistered surfaces.

    e. Mark. To restore obliterated identification.

4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

8. Paint (ammunition only). To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.

9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the SMR code.

INTRODUCTION - Continued

10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly. The step-by-step breakdown (taking apart) of a spare/functional-group-coded item to the level of its least component that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance-significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance Function. Column (3) lists the functions to be performed on the item listed in Column (2). (For a detailed explanation of these functions, refer to "Maintenance Functions" outlined above.)

Column (4) Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in Column (3), by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time),

INTRODUCTION - Continued

troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

C Crew maintenance
F Maintainer maintenance

Sustainment:

L Specialized Repair Activity (SRA)
H Below depot maintenance
D Depot maintenance

NOTE

The "L" maintenance level is not included in Column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" Column of Column (4), and an associated reference code is used in Column (6). This code is keyed to the remarks, and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement, and Diagnostic Equipment (TMDE), and special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to the entries in the Tools and Test Equipment Requirements Table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the Remarks Table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in Column (5) of the MAC.

Column (2) Maintenance Category. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) Nomenclature. Name or identification of the tool or test equipment.

Column (4) National Stock Number. The NSN of the tool or test equipment.

Column (5) Tool Number. The manufacturer’s part number.

Explanation of Columns in the Remarks

Column (1) Remarks Code. The code recorded in Column (6) of the MAC.

Column (2) Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC)

Table 1. MAC for 40MM GRENADE LAUNCHER M203/M203A1/M203A2 W/E.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0000-00	PMCS QUARTERLY	Inspect		1.8				
		Service		0.9			3, 4, 6	
0000-01	LAUNCHER, GRENADE, 40MM, M203/ M203A1/ M203A2 W/E	Repair		1.8			4, 6	A, B
0100-00	LAUNCHER, GRENADE, 40MM, M203/ M203A1/ M203A2	Repair		2.0				A, D
0100-01	MOUNTING BRACKET ASSEMBLY	Repair		0.4			4, 6	
0200-00	QUICK RELEASE BRACKET	Repair		0.5			4, 6	A
0201-00	LEFT BRACKET ASSEMBLY	Repair		0.2			4, 6	A, B
0300-00	LEAF SIGHT AND RAIL GRABBER ASSEMBLY	Repair		0.2			4, 6	A, B
0400-00	LEAF SIGHT ASSEMBLY	Repair		0.2			4, 6	
0500-00	BARREL ASSEMBLY	Repair		0.6			4, 6, 7, 8	E

Table 1. MAC for 40MM GRENADE LAUNCHER M203/M203A1/M203A2 W/E - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0600-00	RECEIVER ASSEMBLY	Test		0.1			1, 5	
		Repair		1.2			2, 4, 5, 6, 9	
0700-00	QUADRANT SIGHT ASSEMBLY	Replace	0.1					D
		Repair		0.5			4, 6	C, D
0701-00	QUADRANT, RANGE ASSEMBLY	Repair		0.1			4, 6	
0702-00	LATCH ASSEMBLY	Repair		0.1			4, 6	
0703-00	SIGHT ARM ASSEMBLY	Repair		0.1			4, 6	

Table 2. Tools and Test Equipment for 40MM GRENADE LAUNCHER M203/M203A1/M203A2 W/E.

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Gage, Firing Pin Protusion	5220-00-348-8434	12002976
2	F	Adapter, Torque Wrench	5120-01-047-3294	12003033
3	C	Brush, Cleaning, Tool and Parts	7920-00-205-2401	7920-00-205-2401
4	F	Tool Kit, Small Arms (Army only)	5180-01-506-8287	GOV 92608
5	F	Shop Set, Small Arms: Field Maintenance, Basic Less Power (Army only)	4933-00-754-0664	SC 4933-95-CL-A11
6	F	Tool Kit, Small Arms (USMC only)	5180-01-504-5663	SC 5180-95CLA07
7	F	Barrel Extension Staking Support Tool		
8	F	Bore Constriction Tool		
9	F	Slave Pin		

Table 3. Remarks for 40MM GRENADE LAUNCHER M203/M203A1/M203A2 W/E.

REMARK CODE	REMARKS
A	Repair and replacement of parts performed by field maintenance is limited to authorized items listed in WP 0023 through WP 0034. Except for swivel (8448571) and tubular rivet (8448697) listed in TM 9-1005-319-23&P.
B	Except for swivel (8448571) and tubular rivet (8448697) listed in TM 9-1005-319-23&P or TM 05538C-23P/2A (USMC only).
C	Field maintenance is authorized to install and remove the Quick Release Bracket to the M203A2. All levels of maintenance are authorized to mount and dismount the M203A2 W/Quick Release Bracket to and from host weapon.
D	Crew maintenance is authorized M203A2 to remove/install the quadrant sight assembly.
E	Bore constriction tool, manufactured from NSN 9510-00-813-5335.

END OF WORK PACKAGE

FIELD MAINTENANCE
EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the M203 Grenade Launcher. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., Use brake fluid (WP 0098, item 5)).

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item. C = Crew, F = Maintainer.

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
1	F	8040-00-043-1717	ADHESIVE: 2 oz tube MMM-A-189 (81348)	TU
2	F	8040-00-680-1080	ADHESIVE: 3.75 oz tube PLIOBOND20 (34897)	TU
3	F	8040-00-266-7429	ADHESIVE: 8 oz can A-A-863 (58536)	PT
4	F	8040-01-486-1862	SCOTCHGRIP 1099: 5 oz tube 62-1099-2631-1 (04963)	TU
5	C	1005-00-242-5687	BOTTLE, ASSEMBLY CYLINDRICAL: 8448444 (19204)	AY
6	F	8020-00-244-0153	BRUSH, ARTISTS: 8020-00-244-0153 (80244)	EA
7	F	7920-00-205-2401	BRUSH, CLEANING, TOOLS AND PARTS: 7920-00-205-2401 (81349)	EA
8	C	9150-01-102-1473	CLEANER, LUBRICANT, AND PRESERVATIVE: 1/2 oz (14.79 ml) bottle MIL-PRF-63460 (81349)	BT
9	F	9150-01-054-6453	CLEANER, LUBRICANT, AND PRESERVATIVE: 1 pt (0.48 l) can CLP-5 (65983)	PT
10	F	9150-01-053-6688	CLEANER, LUBRICANT, AND PRESERVATIVE: 1 gal. (3.78 l) container MIL-PRF-63460 (81349)	GL
11	F	9920-00-292-9946	CLEANER, TOBACCO PIPE: 9920-00-292-9946 (64067)	BX
12	C	6850-00-224-6656	CLEANING COMPOUND, RIFLE BORE: small arms bore cleaning solution (RBC) 2 fl. oz (59.15 ml) bottle MIL-PRF-372 (81349)	BT
13	C	6850-00-224-6657	CLEANING COMPOUND, RIFLE BORE: small arms bore cleaning solution (RBC) 8 oz (236.6 ml) can MIL-PRF-372 (81349)	CN
14	F	5350-00-221-0872	CLOTH, ABRASIVE: ANSI B74.18 (80204)	PG
15	F	6850-01-474-2319	CLEANING SOLVENT: type II 1 gal. (3.78 l) MIL-PRF-680 (81349)	GL
16	F	6850-01-474-2317	CLEANING SOLVENT: type II 5 gal. (18.93 l) MIL-PRF-680 (81349)	CO
17	F	6850-01-474-2316	CLEANING SOLVENT: type II 55 gal. (208.18 l) MIL-PRF-680 (81349)	DR
18	F	8415-00-823-7458	GLOVES, RUBBER: Size 9 MIL-DTL-32066 (81349)	PR

Table 1. Expendable and Durable Items List - Continued.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
19	F	8415-00-823-7459	GLOVES, RUBBER: Size 10 MIL-DTL-32066 (81349)	PR
20	F	8415-00-823-7460	GLOVES, RUBBER: Size 11 MIL-DTL-32066 (81349)	PR
21	F	9150-01-260-2534	LUBRICANT, SOLID FILM: 16 oz (0.45 kg) spray can MIL-L-23398 (81349)	CN
22	C	9150-00-292-9689	LUBRICATING OIL, WEAPONS: (LAW) 1 qt (0.95 l) can MIL-PRF-14107 (81349)	QT
23	C	9150-00-935-6597	LUBRICATING OIL, WEAPONS: (LSA), SEMIFLUID 2 fl oz (59.15 ml) plastic bottle MILL46000 (81349)	BT
24	C	9150-00-889-3522	LUBRICATING OIL, WEAPONS: (LSA), SEMIFLUID 4 fl oz (118.30 ml) bottle MILL46000 (81349)	BT
25	F	6850-00-826-0981	PENETRANT KIT: AMS 2644 (81343)	KT
26	F	8030-00-181-8372	PRIMER: 6 oz (170 g) can 747-56 (05972)	CN
27	C	7920-00-205-1711	RAG, WIPING: 50 lb. (22.68 kg) bale 7920-00-205-1711 (64067)	BE
28	F	8030-00-051-4011	SEALING COMPOUND: DEVCON F 1 lb. (454 gm) (16059)	KT
29	F	8030-00-081-2335	SEALING COMPOUND: locking torque 3/8 bolt 70/175, viscosity 100-200, yellow 10 cc bottle 085-21 (05972)	BX
30	F	9505-00-293-4208	WIRE, NONELECTRICAL: 0.032 in. MS20995C32 (80205)	LB
31	F	9150-01-360-1906	LUBRICANT, SOLID FILM: 16 oz can MIL-PRF-46147 (81349)	CN
32	F	9150-01-360-1908	LUBRICANT, SOLID FILM: 1 qt can MIL-PRF-46147 (81349)	QT
33	F	9150-00-142-9361	LUBRICANT, SOLID FILM: 1 gal. can MIL-PRF-46147 (81349)	GL

END OF WORK PACKAGE

FIELD MAINTENANCE
TOOL IDENTIFICATION LIST

Scope

This Work Package (WP) lists all common tools and supplements and special tools/fixtures needed to maintain the M203/M203A1/M203A2 grenade launchers.

Explanation of Columns in the Tool Identification List

Column (1) - Item No. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Extractor (WP 0090, item 32)).

Column (2) - Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gage, belt tension).

Column (3) - National Stock Number (NSN). This is the NSN assigned to the item; use it to requisition the item.

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.

Column (5) - Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this work package.

Table 1. Tool Identification List.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
1	Barrel Extension Staking Support Tool			Illustrated List of Manufactured Items
2	Bore Constriction Tool			Illustrated List of Manufactured Items
3	Trigger Pull Measuring Fixture	4933-00-647-3696	7274758 (19204)	SC 4933-95-CL-A11

END OF WORK PACKAGE

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Subject **WP Sequence No.-Page No.**

Miscellaneous

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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA.	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE *Date you filled out this form.*
TO *(Forward to proponent of publication or form) (Include ZIP Code)* U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000	**FROM** *(Activity and location) (Include ZIP Code)* *Your mailing address*	

PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-1010-221-23&P	*Date of the TM*	*Title of the TM*

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact work\ding of recommended change must be given)
						SAMPLE

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
Your Name	*Your Phone Number*	*Your Signature*

DA FORM 2028, FEB 74 REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED. APD V4.00

TO *(Forward direct to addressee listed in publication)*	**FROM** *(Activity and location) (Include ZIP Code)*	**DATE**
U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000	*Your Address*	*Date you filled out this form*

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE
TM 9-1010-221-23&P	*Date of the TM*	*Title of the TM*

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS *(Any general remarks, or recommendations, or suggestions for improvement of publications and* blank forms. Additional blank sheets may be used if more space is needed.)

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
Your Name	*Your Phone Number*	*Your Signature*

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	**DATE**
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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-1010-221-23&P	30 November 2012	Field Maintenance Including RPSTL, Launcher, Grenade, 40 mm, M203, M203A1, M203A2

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO *(Forward direct to addressee listed in publication)*	**FROM** *(Activity and location) (Include ZIP Code)*	**DATE**
U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000		

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS *(Any general remarks, or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

APD V4.00

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	**DATE**
TO *(Forward to proponent of publication or form) (Include ZIP Code)* U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000	**FROM** *(Activity and location) (Include ZIP Code)*	

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ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

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U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000		

PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

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TYPED NAME, GRADE OR TITLE	**TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION**	**SIGNATURE**

APD V4.00

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	**DATE**
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ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

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TYPED NAME, GRADE OR TITLE	**TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION**	**SIGNATURE**

APD V4.00

By Order of the Secretary of the Army:

RAYMOND T. ODIERNO
General, United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army

1226101

By Order of the Secretary of the Air Force:

T. Michael Moseley
General, United States Air Force
Chief of Staff

Bruce Carlson
General, United States Air Force
Commander, AFMC

By order of the Secretary of the Marine Corps:

T.J. Tafolla
Program Manager, Infantry Weapons
Marine Corps System Command

By Order of the Secretary of the Navy:

Jerry Gaskill
Small Arms Program Manager
Naval Sea Systems Command

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 400545 requirements for TM 9-1010-221-23&P

Marine Corps Distribution
PCN 184 077002 00

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meter = 0.3937 Inch
1 Decimeter = 10 Centimeters = 3.94 Inches
1 Meter =10 Decimeters = 100 Centimeters
= 1000 Millimeters = 39.37 Inches
1 Dekameter = 10 Meters = 32.8 Feet
1 Hectometer =10 Dekameters = 328.08 Feet
1 Kilometer =10 Hectometers = 1000 Meters
= 0.621 Mile = 3,280.8 Feet
Millimeters = Inches times 25.4
Inches = Millimeters divided by 25.4

WEIGHTS

1 Centigram = 10 Milligrams = 0.154 Grain
1 Decigram = 10 Centigrams = 1.543 Grains
1 Gram = 0.001 Kilogram = 10 Decigrams
=1000 Milligrams = 0.035 Ounce
1 Dekagram = 10 Grams = 0.353 Ounce
1 Hectogram = 10 Dekagrams = 3.527 Ounces
1 Kilogram = 10 Hectograms = 1000 Grams
= 2.205 Pounds
1 Quintal = 100 Kilograms = 220.46 Pounds
1 Metric Ton = 10 Quintals = 1000 Kilograms
= 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liter = 0.034 Fluid Ounce
1 Centiliter = 10 Milliliters = 0.34 Fluid Ounce
1 Deciliter = 10 Centiliters = 3.38 Fluid Ounces
1 Liter = 10 Deciliters = 1000 Milliliters
= 33.82 Fluid Ounces
1 Dekaliter = 10 Liters = 2.64 Gallons
1 Hectoliter = 10 Dekaliters = 26.42 Gallons
1 Kiloliter = 10 Hectoliters = 264.18 Gallons

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inch
1 Sq Decimeter = 100 Sq Centimeters = 15.5 Sq Inches
1 Sq Meter (Centare) = 10 Sq Decimeters
= 10,000 Sq Centimeters = 10.764 Sq Feet
1 Sq Dekameter (Are) = 100 Sq Meters = 1,076.4 Sq Feet
1 Sq Hectometer (Hectare) = 100 Sq Dekameters
= 2.471 Acres
1 Sq Kilometer = 100 Sq Hectometers
= 1,000,000 Sq Meters = 0.386 Sq Mile

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.061 Cu Inch
1 Cu Decimeter = 1000 Cu Centimeters = 61.02 Cu Inches
1 Cu Meter = 1000 Cu Decimeters
= 1,000,000 Cu Centimeters= 35.31 Cu Feet

TEMPERATURE

5/9 (°F - 32°) = °C
(9/5 x °C) + 32° = °F
-35° Fahrenheit is equivalent to -37° Celsius
0° Fahrenheit is equivalent to -18° Celsius
32° Fahrenheit is equivalent to 0° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
100° Fahrenheit is equivalent to 38° Celsius
212° Fahrenheit is equivalent to 100° Celsius

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square 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-Inches	Newton-Meters	0.11375
Pounds per Square Inch	Kilopascals	6.895
Ounce-Inches	Newton-Meters	0.007062
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
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square 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 Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621
°Fahrenheit	°Celsius	°C = (°F-32)x5/9
°Celsius	°Fahrenheit	°F = (9/5x°C)+32

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