

**ARMY TM 9-1005-319-23&P
AIR FORCE TO 11W3-5-5-42
NAVY SW370-BU-MMI-010**

MAINTAINER MAINTENANCE MANUAL

**RIFLE, 5.56MM, M16A2
NSN 1005-01-128-9936 (EIC 4GM)
P/N 9349000**

**RIFLE, 5.56MM, W/E, M16A3
NSN 1005-01-357-5112
P/N 12012000**

**RIFLE, 5.56MM, W/E, M16A4
NSN 1005-01-383-2872 (EIC 4F9)
P/N 12973001**

**CARBINE, 5.56MM, M4
NSN 1005-01-231-0973 (EIC 4FJ)
P/N 9390000**

**CARBINE, 5.56MM, M4A1
NSN 1005-01-382-0953 (EIC 4GC)
P/N 12972700**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY,
AIR FORCE, AND NAVY
15 APRIL 2019**

WARNING SUMMARY

This warning summary contains general safety warning and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. All warnings in this technical manual pertain to both the rifles and the carbines unless otherwise specified. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical manual.

FIRST AID

For first aid information, refer to TC 4-02.1, First Aid.

Air Force users will refer to AFMAN 44-163(I), First Aid Manual.

EXPLANATION OF SAFETY WARNING ICONS



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



FLYING PARTICLES - arrows bouncing off face shows that particles flying through the air will harm face.



WEAPON FIRE - weapon could accidentally discharge causing serious injury or death.

GENERAL SAFETY WARNINGS DESCRIPTION

WARNING



Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

WARNING



Before starting an inspection, be sure to clear the weapon. Do not pull the trigger until the weapon has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING

The lock plate prevents the selector lever from being placed in BURST/AUTO and will be installed at the discretion of the unit commander. It is mandatory for use in civil disturbance (riot control).

WARNING

If the weapon fails function tests, perform required maintenance. Continued use of weapon could result in death or injury to personnel.

WARNING

All M16 series Rifles and M4 series Carbines must be inspected and gauged at least once annually for safety and serviceability. Initial gauging is required one year from receipt of the weapons. Failure to comply may result in injury to personnel. Air Force users refer to inspection requirements in the Air Force Instruction (AFI) 36-2654. Navy users shall refer to the applicable Maintenance Requirement Card (MRC) pursuant to the Navy's 3M Planned Maintenance System (PMS) or the small arms gauging requirements pursuant to NAVSEAINST 8370.2.

WARNING

It is recommended that training units inspect/gauge all rifles and carbines at the end of each training cycle. Training units will inspect/gauge all rifles and carbines annually. Failure to comply may result in injury to personnel.

WARNING

Bolt cam pin must be installed or rifle/carbine will blow up while firing the first round. If the bolt cam pin is not installed, injury or death to personnel may result.

WARNING

Only blank cartridge M200 is to be used when the Blank Firing Attachment (BFA) is attached to the carbine/rifle. Ensure that the BFA is removed before using live ammo. Use of live ammo with the BFA attached will result in catastrophic failure to a weapon and could result in death or injury to personnel.

WARNING

For further information on safety, care, and handling of ammunition, Army users will refer to TM 9-1005-319-10. Air Force users should refer to AFI 21-201, Munitions management, and AFMAN 91-201, Explosives Safety Standards. Navy users shall refer to NAVSEA OP 5 Volume 1, Ammunition and Explosive Safety Ashore. Failure to comply may result in injury to personnel.

WARNING

Any screw longer than 1 1/8 inch used could cause a hazardous situation. Longer screws impede trigger function. Failure to comply may result in death or injury to personnel.

WARNING SUMMARY - Continued

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.



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



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



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

HAZARDOUS MATERIALS DESCRIPTION

WARNING



EXPLOSION

Ammunition can explode. Do not keep live ammunition near work area. Failure to comply may result in injury or death to personnel.

WARNING



The weapon **MUST** be cleared to be considered safe before disassembling, cleaning, inspecting, transporting, or storing.

Ensure weapon is always pointed in a safe direction.

Failure to comply with above warnings may result in injury or death to personnel. Seek medical attention if injury occurs.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTION - Continued

WARNING



DRY CLEANING SOLVENT

Dry cleaning solvent is flammable and toxic and should be used in a well-ventilated area. Do not clean parts near an open flame or in a smoking area. Cleaning solvent evaporates quickly and has a drying effect on the skin. The use of protective gloves is necessary to protect the skin when cleaning weapon parts. Failure to comply may result in death or injury to personnel.

WARNING



SOLID FILM LUBRICANT

The ingredient Antimony Trioxide is considered carcinogenic. Wear eye and skin protection and be sure the area is well-ventilated. Wash exposed skin thoroughly with soap and water. Failure to comply may result in death or injury to personnel.

WARNING



DICHLOROMETHANE

The ingredient methylene chloride is considered carcinogenic. Wear eye and skin protection and be sure the area is well-ventilated. Wash exposed skin thoroughly with soap and water. Failure to comply may result in death or injury to personnel.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS DESCRIPTION - Continued

WARNING



CARBON REMOVING COMPOUND

Carbon removing compound is hazardous material. If carbon removing compound comes in contact with the skin, wash thoroughly with running water. Using a good lanolin base cream after exposure to the compound is helpful. The use of gloves and protective equipment is required. Failure to comply may result in death or injury to personnel.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supersedes TM 9-1005-319-23&P, 11W3-5-5-42, and SW370-BU-MMI-010 dated 28 November 2008, including all changes. Zero in the "Change No." column indicates an original page or work package.

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FOR

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HOW TO USE THIS MANUAL

The safest, easiest, and best way to maintain the M16 series Rifle and M4 series Carbine is to use this manual. Learning to use this Technical Manual (TM) is as easy as reading through the next few pages of this section. Knowing what is in this manual and how to use it will save you time and work, and will help you to avoid exposing yourself to unnecessary hazards while performing your job.

This manual covers the maintenance of the M16 series Rifle and M4 series Carbine. The manual is divided into seven chapters. Chapters are divided into Work Packages (WP). The seven chapters and what they contain are found in the Table of Contents in the front of this manual.

Each maintenance task has an initial setup containing a list of the following things that will be needed to do the maintenance task:

1. Tools and Special Tools. For standard and special tools, see (WP 0049). Army users will use the Tool Set, Gauge Set, and/or Shop Set listed in the initial setup.
2. Materials/Parts. Expendable materials and 100 percent replaceable parts are listed. Each material or part is followed by a work package reference.
3. References. Other publications or work packages containing necessary information are listed.
4. Equipment Condition. Conditions to be met before starting the procedure are listed.

Air Force Only: Air Force Specialty Code 3POXXB, Special Experience Identifier (SEI) 312 or civilian equivalent, and gunsmith are the only personnel authorized to perform maintenance procedures contained in this manual.

Illustrations for the maintenance procedures show only the parts affected by the procedure being performed. If the task in the work package pertains to both the M16 series Rifle and M4 series Carbine, only the Carbine will be shown. If a procedure is not common to all weapons, the procedure will be appropriately illustrated.

In the back of this manual, you will find Chapter 7, Supporting Information. The chapter provides specific information that will assist you in performing the various operational tasks. The work packages provide such information as additional references (i.e., other TMs or TCs), as in WP 0045. Become familiar with all work packages and what they contain before beginning any operational or maintenance task.

This TM has been arranged with you, the user, in mind. Your safety and ability to perform the operational and maintenance tasks in the most efficient manner hinge on your ability to perform and understand the information contained in this manual. If you fully understand the arrangement and purpose of this TM, and have taken the time to read through this section, you will have no trouble operating and maintaining this weapon in the manner for which it was designed.

CHAPTER 1

GENERAL INFORMATION

M16 SERIES RIFLES AND M4 SERIES CARBINES

MAINTAINER GENERAL INFORMATION

SCOPE

This Technical Manual contains maintenance instructions for the M16A2, M16A3, and M16A4 Rifles and the M4 and M4A1 Carbines to provide a stable weapon support system for use in various training applications of small arms weapon systems. The M16A2, M16A3, and M16A4 Rifles and the M4 and M4A1 Carbines are used as individual defensive or offensive weapons against direct targets.

Type of manual

Maintainer maintenance manual.

Model Numbers and Equipment Names

M16A2, M16A3, and M16A4 Rifles and M4 and M4A1 Carbines.

Purpose of Equipment

To provide personnel offensive/defensive capabilities for engagement of targets in the field.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual; DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability.

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: Department of Navy organizations and commands will follow OPNAVINST 4790.16 Condition-Based Maintenance and Condition-Based Maintenance Plus Policy regarding the implementation of local maintenance policy.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your M16 series Rifle or M4 series Carbine 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/>. 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.

Air Force: Air Force Personnel will submit any Material Deficiency Report (MDR) or Product Quality Deficiency Report (PQDR) through the JDRS at <https://jdrs.mil> in accordance with Technical Order (TO) 00-35D-54, USAF Deficiency Reporting Investigation and Resolution.

Navy: EIRs shall be submitted to NAVY 311 at www.navy311.navy.mil, or by calling 1-855-NAVY-311 (1-855-628-9311) or submit via email: smallarms@navy.mil.

HAND RECEIPT (HR) MANUALS

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). TM 9-1005-319-10-HR consists of preprinted hand receipts that list end item related equipment (e.g., Components of End Item (COEI), Basic Issue Items (BII), and Additional Authorization List (AAL)) that must be

HAND RECEIPT (HR) MANUALS - Continued

accounted for. As an aid to property accountability, additional HR manuals may be requisitioned through normal publication channels.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control of Army material 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. The term "corrosion" means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. 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 (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The US Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It is usually identified by a black powder corrosion product or pits on the surface.

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue.

Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/performing maintenance.

If a corrosion problem is identified, it can be reported as an EIR or PQDR. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. SF Form 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

Navy users shall submit letter or SF 368 (Product Quality Deficiency Report) directly to: Commander, Code JXN, Bldg 3422, NAVSURFWARCENDIV, 300 Hwy 361, Crane, IN 47522-5001, smallarms@navy.mil.

HAZARDOUS WASTE DISPOSAL INFORMATION

CORROSION PREVENTION AND CONTROL (CPC) - Continued

When servicing this weapon, performing maintenance, or disposing of materials such as: cleaning fluids, dry cleaning solvents, lubricants, waste thread locking compounds, and waste Chemical Agent Resistant Coating (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 Command at 1-855-846-3940, OCONUS: 210-466-1590, or online at <https://aec.army.mil/.php/AskAEC>. 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 MATERIAL TO PREVENT ENEMY USE

Refer to TM 750-244-7 and DOD Manual 4160.28.

PREPARATION FOR STORAGE OR SHIPMENT

See (WP 0027).

LIST OF ABBREVIATIONS/ACRONYMS

Table 1. List of Abbreviations/Acronyms.

Abbreviation	Acronym
AAL	Additional Authorization List
AF	Air Force
AFI	Air Force Instruction
AFJMAN	Air Force Joint Manual
AFMAN	Air Force Manual
AFTO	Air Force Technical Order
AMC PAM	Army Materiel Command Pamphlet
AR	Army Regulation
ARMS	Army Master Data File Retrieval Microform System
BFA	Blank Firing Attachment
BII	Basic Issue Items
BOI	Basis of Issue
BUIS	Back-Up Iron Sight
BX	Box
CAGEC	Commercial and Government Entity Code

LIST OF ABBREVIATIONS/ACRONYMS - Continued

Table 1. List of Abbreviations/Acronyms - Continued.

CARC	Chemical Agent Resistant Coating
CLP	Cleaner, Lubricant, and Preservative
cm	centimeter
CN	Can
CODR	Conventional Ordnance Deficiency Reports
COEI	Components of End Item
CONUS	Contiguous United States
CPC	Corrosion Prevention and Control
CTA	Common Table of Allowances
DA	Department of Army
DA PAM	Department of Army Pamphlet
DR	Drum
DRWEB	Deficiency Report System
EA	Each
EIR	Equipment Improvement Recommendation
EMP	Electromagnetic Pulse
FGC	Functional Group Code
FIG.	Figure
fps	Feet Per Second
ft-lb	foot pound
GL/gal.	Gallon
HR	Hand Receipt
HCI	Hardness Critical Item
in.	inch
in-lb	inch pound

LIST OF ABBREVIATIONS/ACRONYMS - Continued

Table 1. List of Abbreviations/Acronyms - Continued.

kg	kilogram
KT	Kit
LAW	Lubricating Oil, Weapons
lb/LB	pound(s)
LSA	Lubricating Oil, Weapons
m	meter
MAC	Maintenance Allocation Chart
MAJCOM	Major Command
MAP	Maintenance Assistance Program
MAS	Maintenance Assistance Service
MDR	Material Deficiency Report
MIL-STD	Military Standard
MIM	Maintenance Information Message
MIP	Maintenance Index Pages
mm	millimeter
ml	milliliter
MRC	Maintenance Requirement Card
MTOE	Modified Table of Organization and Equipment
MWO	Modification Work Order
NAVSEA	Naval Sea Systems Command
NAVSEAINST	Naval Sea Systems Command Instruction
NHA	Next Higher Assembly
NIIN	National Item Identification Number
N-m	Newton meter
NMC	Not mission capable

LIST OF ABBREVIATIONS/ACRONYMS - Continued

Table 1. List of Abbreviations/Acronyms - Continued.

NO.	Number
NSN	National Stock Number
OZ/oz	Ounce
P/N	Part Number
PDREP	Product Data Reporting and Evaluation Program
PDS	Packaging Data Sheet
pkg	Package
PMCS	Preventive Maintenance Checks and Services
PMS	Planned Maintenance System
PQDR	Product Quality Deficiency Report
psi	pounds per square inch
PT	Pint
QDR	Quality Deficiency Report
qt	Quart
QTY	Quantity
RBC	Rifle Bore Cleaner
RH	right hand
rpm	rounds per minute
RPSTL	Repair Parts and Special Tools
SB	Service Bulletin
SDR	Supply Discrepancy Report
SEI	Special Experience Identifier
SF	Standard Form
SFL	Solid Film Lubricant
SH	Sheet or Shortcoming

LIST OF ABBREVIATIONS/ACRONYMS - Continued**Table 1. List of Abbreviations/Acronyms - Continued.**

SMR	Source, Maintenance, and Recoverability
SPI	Special Packaging Instruction
SRA	Specialized Repair Activity
TACOM	Tank-Automotive and Armaments Command
TAMMS	The Army Maintenance Management System
TAMMS-A	The Army Maintenance Management System – Aviation
TB	Technical Bulletin
TC	Training Circular
TM	Technical Manual
TMDE	Test, Measurement and Diagnostic Equipment
TMDER	Technical Manual Deficiency/Evaluation Report
TO	Technical Order
TULSA	TACOM Unique Logistics Support Applications
U/I	unit of issue
UOC	Usable On Code
VCI	Volatile Corrosion Inhibitor
W/E	with equipment
WP	Work Package

QUALITY OF MATERIAL

Material used for replacement, repair, or modification must meet the requirements of this TM 9-1005-319-23&P. If quality of material requirements is not stated in this TM 9-1005-319-23&P, the material must meet the requirements of the drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment.

SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT**Common Tools and Equipment**

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE); CTA 50-970, Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items); CTA

**SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT
- Continued**

50-909, Field and Garrison Furnishings and Equipment; or CTA 8-100, Army Medical Department Expendable/Durable Items, as applicable to your unit.

Air Force users should maintain the following common tools:

Ball-peen hammer
Combination wrench
Flat file
Flat-tip screwdriver
Hammer
Machinist's vise
Needle nose pliers
Punch
Retaining ring pliers
Socket wrench handle and socket head screw socket wrench
Solid center punch
Torque wrench
Trigger pull test fixture rod and weights
Tweezers/round nose pliers
Vise jaw caps
3-ounce soft-brass hammer
1/16-inch drive pin punch
5/64-inch drive pin punch
3/32-inch drive pin punch
1/8-inch drive pin punch
8-inch adjustable wrench (2)

Special Tools

**SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT
- Continued**

Special tools required for maintenance are listed in (WP 0042). Manufactured items (fabricated tools) are listed in (WP 0034).

END OF WORK PACKAGE

**MAINTAINER
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES**Characteristics**

The M16A2, M16A3, and M16A4 Rifles and the M4 and M4A1 Carbines are lightweight, gas-operated, air-cooled, magazine-fed, shoulder-fired weapons that fire in semiautomatic, three-round burst (M16A2, M16A4, M4), and automatic (M16A3, M4A1).

Capabilities

The rifles and carbines provide personnel with an offensive/defensive capability to engage targets with direct small arms fire. The portability and logistical values are greatly increased particularly when air transport is used.

Features

The receivers are made of light-weight aluminum alloys; however, the safety, durability, and function of the rifles/carbines are in no way reduced.

The bolt locking action is one of the mechanical features of the rifle/carbine. The bolt assembly and barrel extension contain locking lugs that engage and lock the bolt assembly firmly in the barrel extension.

The initial force of the explosion of the cartridge is absorbed by the barrel, barrel extension, and bolt assembly.

The trigger guard is easily adaptable to winter operations. A spring-loaded retaining pin is depressed to allow ready access to the trigger when wearing arctic mittens.

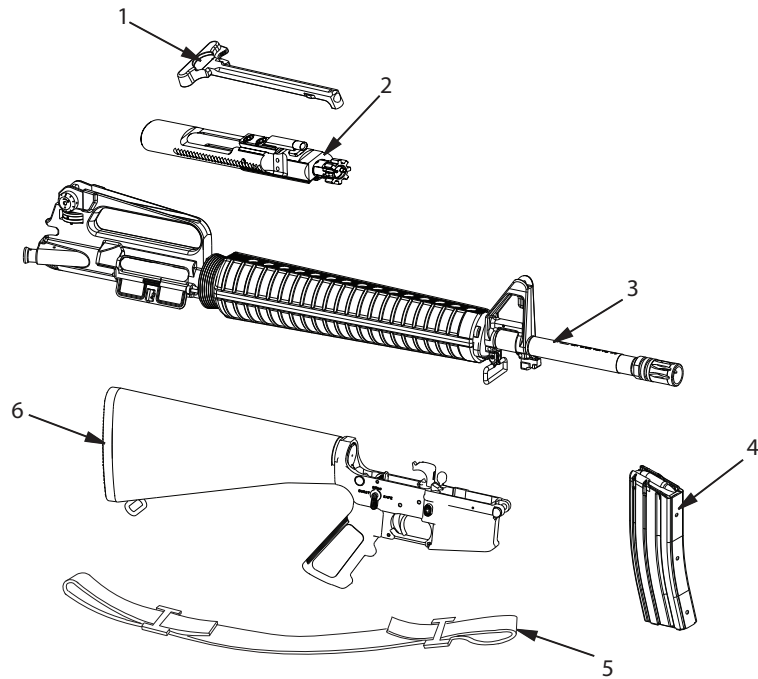
The ejection port cover prevents dirt or sand from getting into the ejection port. The ejection port cover must be closed during periods when firing is not anticipated. The ejection port cover opens automatically with the forward or rearward movement of the bolt carrier assembly.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Table 1. Major Components of M16A2.

Component	Description
Charging Handle Assembly	(Figure 1, Item 1) provides initial charging of weapon. Locks forward during sustained fire.
Bolt and Bolt Carrier Assembly	(Figure 1, Item 2) provides feeding, chambering, locking, firing, extracting, and ejecting of cartridges using the buffer spring and projectile propelling gases for power.
Upper Receiver and Barrel Assembly	(Figure 1, Item 3) provides support for bolt carrier assembly. The barrel chambers the cartridge for firing and directs the projectile.
Cartridge Magazine	(Figure 1, Item 4) holds 30 cartridges and positions the rounds for feeding.
Small Arms Sling	(Figure 1, Item 5) is used as a means to carry the weapon.
Lower Receiver and Buttstock Assembly	(Figure 1, Item 6) assists in basic function of weapon and shoulders the weapon.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued



M16000335

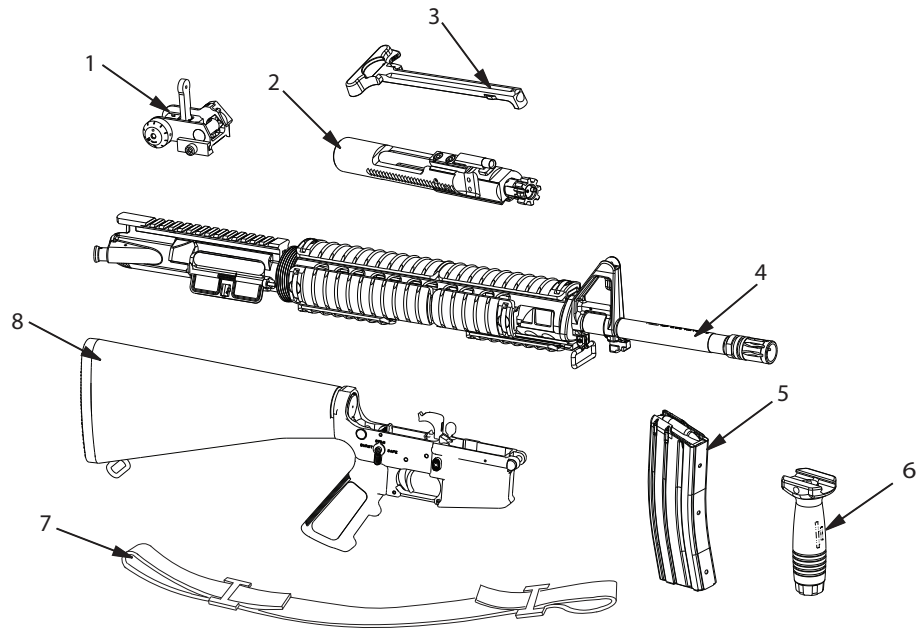
Figure 1. Major Components of M16A2.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

Table 2. Major Components of M16A3 and M16A4.

Component	Description
Back-Up Iron Sight	(Figure 2, Item 1) is used to aim weapon if optics are not present or inoperable.
Bolt and Bolt Carrier Assembly	(Figure 2, Item 2) provides feeding, chambering, locking, firing, extracting, and ejecting of cartridges using the buffer spring and projectile gases for power.
Charging Handle Assembly	(Figure 2, Item 3) provides initial charging of weapon. Locks forward during sustained fire.
Upper Receiver and Barrel Assembly	(Figure 2, Item 4) provides support for bolt carrier assembly. The barrel chambers the cartridge for firing and directs the projectile.
Cartridge Magazine	(Figure 2, Item 5) holds 30 cartridges and positions the rounds for feeding.
Forward Pistol Grip Assembly	(Figure 2, Item 6) is used to increase stability of weapon when firing.
Small Arms Sling	(Figure 2, Item 7) is used as a means to carry the weapon.
Lower Receiver and Buttstock Assembly	(Figure 2, Item 8) assists in basic function of the weapon and shoulders the weapon.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued



M16000336

Figure 2. Major Components of M16A3 and M16A4.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

Table 3. Major Components of M4 and M4A1.

Component	Description
Charging Handle Assembly	(Figure 3, Item 1) provides initial charging of weapon. Locks forward during sustained fire.
Bolt and Bolt Carrier Assembly	(Figure 3, Item 2) provides feeding, chambering, locking, firing, extracting, and ejecting of cartridges using the buffer spring and projectile propelling gases for power.
Upper Receiver and Barrel Assembly	(Figure 3, Item 3) provides support for bolt carrier assembly. The barrel chambers the cartridge for firing and directs the projectile.
Forward Pistol Grip Assembly	(Figure 3, Item 4) is used to increase stability of weapon when firing.
Cartridge Magazine	(Figure 3, Item 5) holds 30 cartridges and positions rounds for feeding.
Small Arms Sling	(Figure 3, Item 6) is used as a means to carry the weapon.
Lower Receiver and Buttstock Assembly	(Figure 3, Item 7) assists in basic function of weapon and shoulders the weapon.
Back-Up Iron Sight	(Figure 3, Item 8) is used to aim weapon if optics are not present or inoperable.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

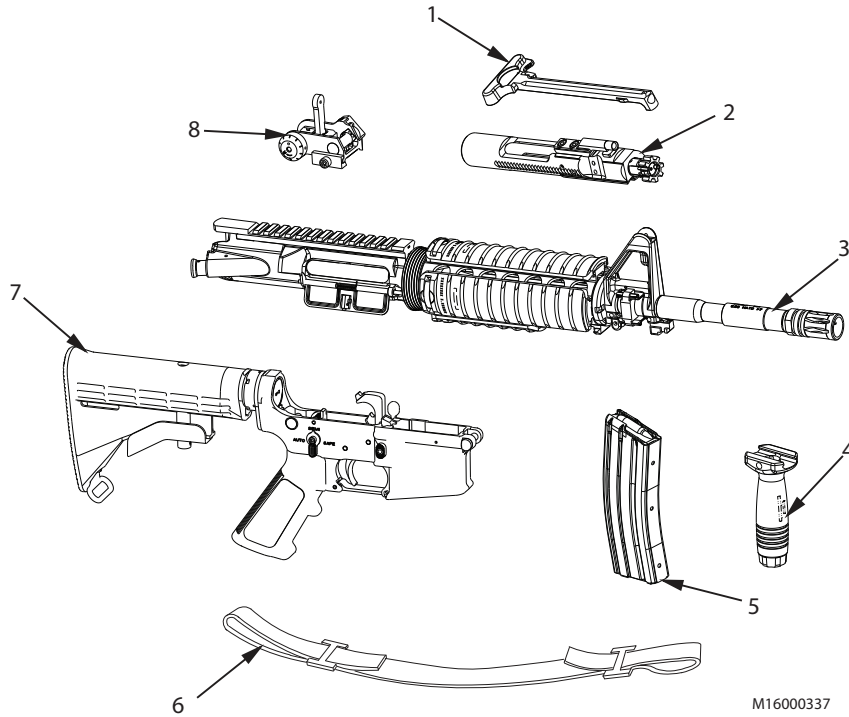


Figure 3. Major Components of M4 and M4A1.

EQUIPMENT DATA

Table 4. M16A2.

Caliber	5.56mm
Weight (with sling and loaded 30 round magazine)	7.96 lb
Length (with compensator)	39 5/8 in.
Mechanical Features	Rifling (RH 1/7 twist) 6 grooves
Firing Characteristics:	
Muzzle Velocity	3,100 fps
Chamber Pressure	52,000 psi
Cyclic Rate of Fire	700-900 rpm
Maximum Effective Rates of Fire:	
Semi	45 rpm
Burst	90 rpm

EQUIPMENT DATA - Continued

Table 4. M16A2 - Continued.

Sustained Rate of Fire	12-15 rpm
Maximum Effective Range:	
Individual/Points Targets	550 m
Area Targets	800 m
Max Range	3,600 m
Fire Selector	SAFE, SEMI, BURST

Table 5. M16A3 and M16A4.

Caliber	5.56mm
Weight (with sling and loaded 30 round magazine) (M16A3)	9.86 lb
Weight (with sling and loaded 30 round magazine) (M16A4)	9.87 lb
Length (with compensator)	39 5/8 in.
Mechanical Features	Rifling (RH 1/7 twist)
Firing Characteristics:	
Muzzle Velocity	3,100 fps
Chamber Pressure	52,000 psi
Cyclic Rate of Fire	700-900 rpm
Max Effective Rates of Fire:	
Semi	45 rpm
Burst/Auto	90 rpm
Sustained Rate of Fire	12-15 rpm
Max Effective Range:	
Individual/Points Targets	550 m
Area Targets	800 m
Max Range	3600 m

EQUIPMENT DATA - Continued**Table 5. M16A3 and M16A4 - Continued.**

Fire Selector (M16A3)	SAFE, SEMI, AUTO
Fire Selector (M16A4)	SAFE, SEMI, BURST

Table 6. M4 and M4A1.

Caliber	5.56mm
Weight (with sling and loaded 30 round magazine) (M4)	7.26 lb
Weight (with sling and loaded 30 round magazine) (M4A1)	7.62 lb
Length (buttstock closed)	29.75 in.
Length (buttstock open)	33 in.
Mechanical Features	Rifling (RH 1/7 twist)
Firing Characteristics:	
Muzzle Velocity	2,970 fps
Chamber Pressure	52,000 psi
Cyclic Rate of Fire	700-970 rpm
Max Effective Rates of Fire:	
Semi	45 rpm
Burst/Auto	90 rpm
Sustained Rate of Fire	12-15 rpm
Max Effective Range:	
Individual/Point Targets	500 m
Area Targets	600 m
Max Range	3,600 m
Fire Selector (M4)	SAFE, SEMI, BURST
Fire Selector (M4A1)	SAFE, SEMI, AUTO

END OF WORK PACKAGE

**MAINTAINER
THEORY OF OPERATION**

GENERAL

Squeezing the trigger releases the hammer. The hammer strikes the firing pin, which strikes the primer and ignites the propellant. Gases from the burning propellant push the projectile through the barrel of the weapon. Barrel rifling rotates the projectile providing stability during flight. When the round reaches the approximate end of barrel, expanding gases from the burning propellant pass through the gas port, gas tube, and into the bolt carrier assembly forcing it to the rear, which causes the bolt to extract and eject the spent cartridge case. The action spring then forces the bolt carrier assembly forward and chambers a new round.

Table 1. Operation of Rifles and Carbines.

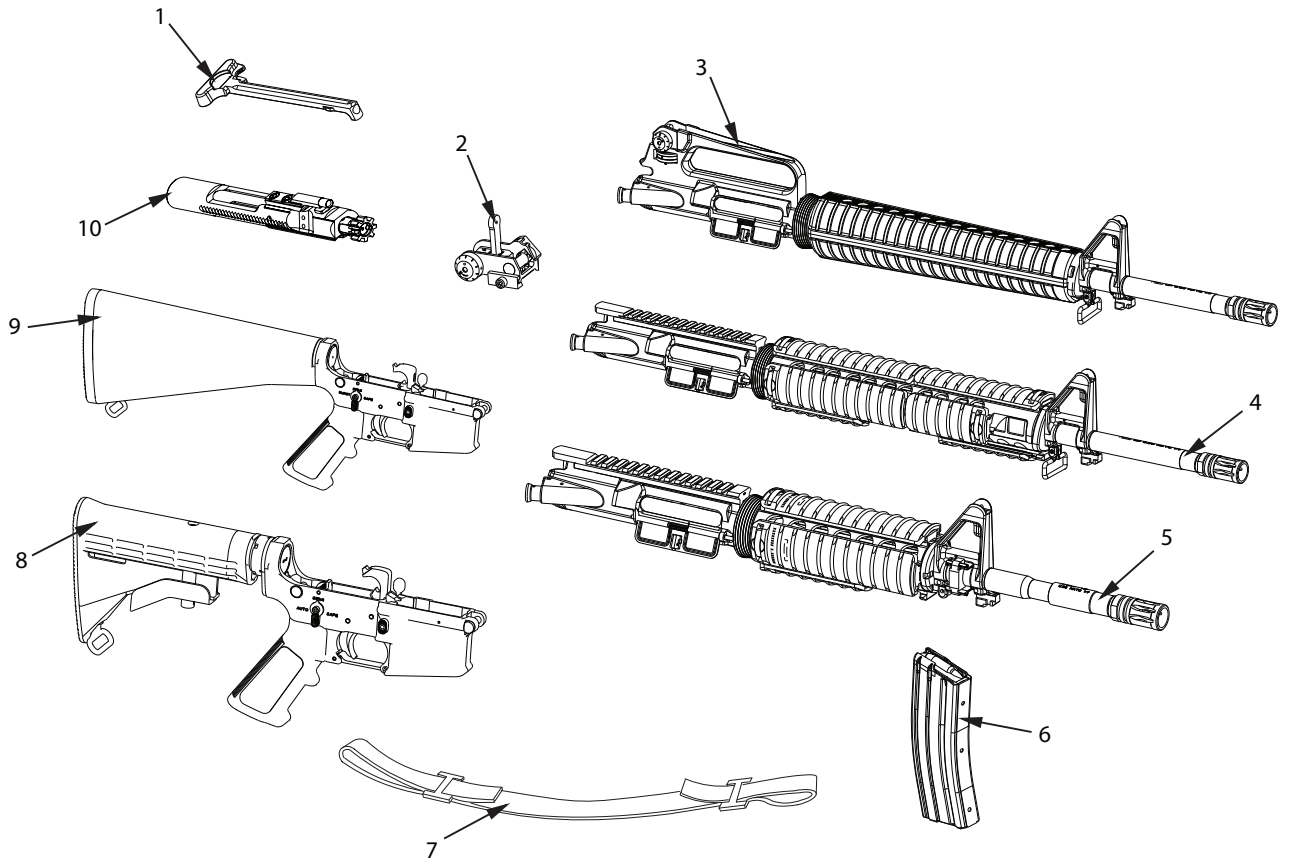
Charging Handle Assembly	(Figure 1, Item 1) This assembly is used by the operator to manually draw the bolt and bolt carrier assembly to the rear when initially charging or clearing the weapon. It must be locked forward when firing the weapon.
Back-Up Iron Sight (BUIS)	(Figure 1, Item 2) The BUIS, in conjunction with the front sight, provides the operator a means to aim the weapon when optics are inoperable or not installed. The sight cam and windage knob can be adjusted to change the point of impact.
M16A2 Upper Receiver and Barrel Assembly	(Figure 1, Item 3) The upper receiver and barrel assembly supports and guides the bolt and bolt carrier assembly, supports the charging handle assembly and barrel extension with locking lugs, and incorporates the forward assist assembly, ejection port, ejection port cover, and carrying handle with integrated rear sight. The barrel directs the fired projectile, incorporates the chamber, which supports the cartridge during firing, and the rifling, which imparts rotation to the projectile for improved range and accuracy, and supports the front sight assembly and the compensator.
M16A3 and M16A4 Upper Receiver and Barrel Assembly	(Figure 1, Item 4) The upper receiver supports and guides the bolt and bolt carrier assembly, supports the charging handle assembly and barrel extension with locking lugs, and incorporates the forward assist assembly, ejection port, ejection port cover, and MIL-STD-1913 rail. The barrel directs the fired projectile, incorporates the chamber, which supports the cartridge during firing, and the rifling, which imparts rotation to the projectile for improved range and accuracy, and supports the front sight assembly and the compensator.
M4/M4A1 Upper Receiver and Barrel Assembly	(Figure 1, Item 5) The upper receiver supports and guides the bolt and bolt carrier assembly, supports the charging handle assembly and barrel extension with

GENERAL - Continued

Table 1. Operation of Rifles and Carbines - Continued.

	locking lugs, and incorporates the forward assist assembly, ejection port, ejection port cover, and MIL-STD-1913 rail. The barrel directs the fired projectile, incorporates the chamber, which supports the cartridge during firing, and the rifling, which imparts rotation to the projectile for improved range and accuracy, and supports the front sight assembly and the compensator.
Cartridge Magazine	(Figure 1, Item 6) The cartridge magazine holds 30 cartridges and positions the cartridges for feeding. After the last cartridge is fired, the magazine follower presses upward on the bolt catch to hold the bolt to the rear.
Small Arms Sling	(Figure 1, Item 7) The small arms sling provides the operator a means to transport the weapon and stabilize the weapon when firing.
M4/M4A1 Lower Receiver and Buttstock Assembly	(Figure 1, Item 8) This assembly supports the upper receiver and barrel assembly, buffer assembly, and action spring, and incorporates the fire control group, trigger, selector lever, magazine well, magazine catch, and bolt catch, and provides the operator a means of stabilizing the carbine. Length is adjustable by the operator.
M16A2, M16A3, and M16A4 Lower Receiver and Buttstock Assembly	(Figure 1, Item 9) This assembly supports the upper receiver and barrel assembly, buffer assembly, and action spring, and incorporates the fire control group, trigger, selector lever, magazine well, magazine catch, and bolt catch, and provides the operator a means of stabilizing the rifle. Storage for basic cleaning materials is provided in the M16A2, M16A3, and M16A4 rifles.
Bolt Carrier Assembly	(Figure 1, Item 10) This assembly provides feeding, chambering, locking, firing, extracting, and ejecting of cartridges using the projectile propelling gases and action spring for power.

GENERAL - Continued



M16000331

Figure 1. Operation of Rifles and Carbines.

GENERAL - Continued**NOTE**

- First become familiar with the functioning of the firing mechanism, especially when in the SAFE and SEMI positions. Also understand the role that the automatic sear plays when firing in the BURST position. Functioning of the mechanism is explained below in a step by step manner. The diagrams on the following pages do not show the associated springs for the sake of simplicity. The positioning of the burst cam is shown in detail.
- The following is a description of the functional theory of three-round burst.
- Assume the rifle is fully loaded with a live round in the chamber and the selector lever on BURST.
- Trigger theory of operation is only applicable to the BURST trigger.

1. Hammer (Figure 2, Item 1) is cocked.
2. Front hook of burst lever (Figure 2, Item 2) is in stop notch.

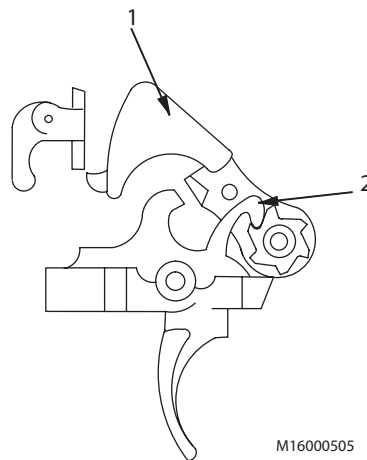


Figure 2. Beginning Position in Three-Round Burst.

3. Trigger is pulled.
4. Trigger nose drops and hammer falls firing the FIRST ROUND.

NOTE

Anytime the hammer falls forward, the clutch spring releases the burst cam and allows the front hook of the burst disconnector to keep it in place.

5. Front hook (Figure 3, Item 1) of burst disconnector holds burst cam (Figure 3, Item 2) in place as hammer falls.

GENERAL - Continued

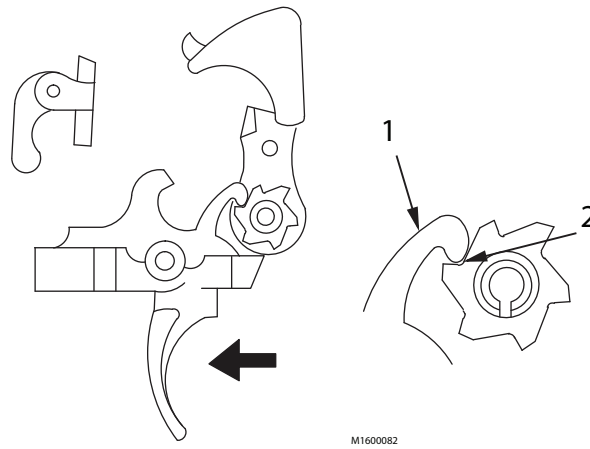


Figure 3. Firing of First Round.

6. As the key and bolt carrier assembly moves to the rear, the hammer (Figure 4, Item 1) is forced to the rear.

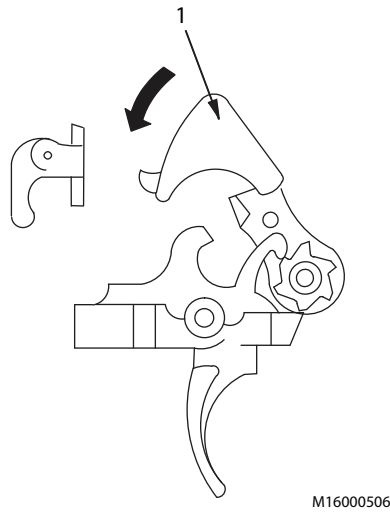


Figure 4. Movement of Key and Bolt Carrier Assembly.

GENERAL - Continued

- 7. The clutch spring of the burst cam clutches the burst cam (Figure 5, Item 1) and causes it to rotate one notch as the hammer is forced back.

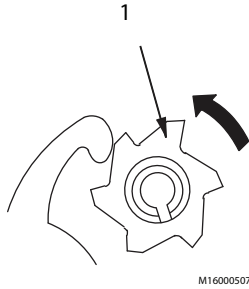


Figure 5. First Rotation of Burst Cam.

- 8. When hammer (Figure 6, Item 2) is fully to the rear, the automatic sear (Figure 6, Item 1) catches it.

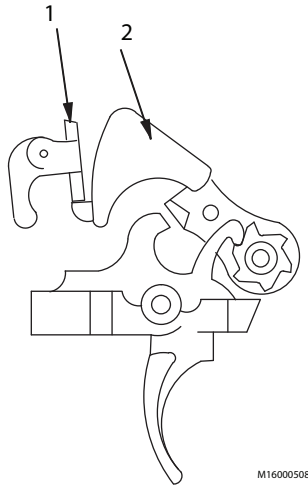


Figure 6. Action of Automatic Sear.

- 9. The front hook of the burst disconnector (Figure 7, Item 1) is now fully in the second notch.

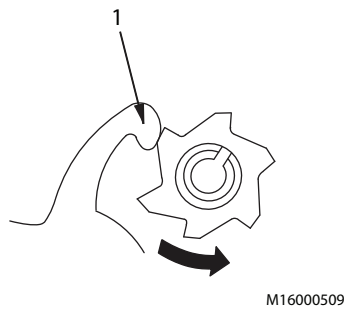


Figure 7. Burst Disconnector in Second Notch.

GENERAL - Continued

10. As the key and bolt carrier assembly travels forward, the automatic sear (Figure 8, Item 1) releases the hammer (Figure 8, Item 2) and the hammer falls.

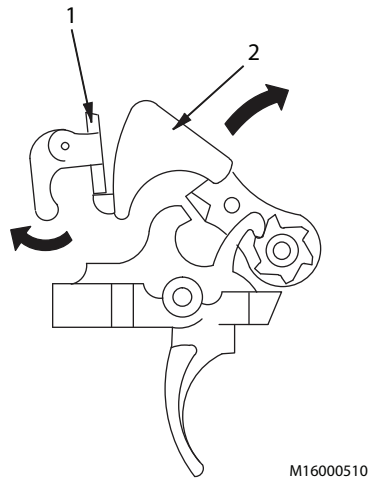


Figure 8. Forward Travel of Key and Bolt Carrier Assembly.

11. When the hammer (Figure 9, Item 1) falls, the SECOND ROUND is fired.

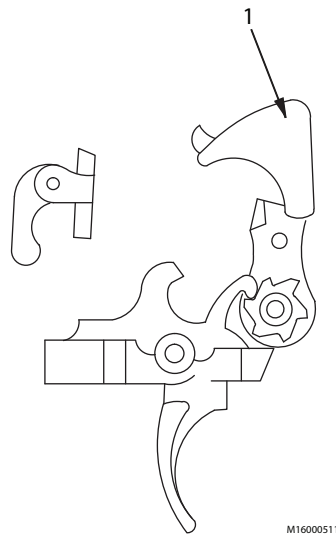
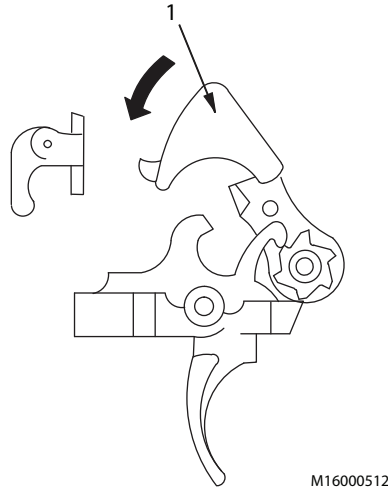


Figure 9. Firing of Second Round.

GENERAL - Continued

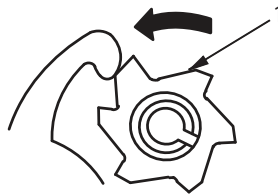
12. As the key and bolt carrier assembly moves to the rear, the hammer (Figure 10, Item 1) is forced back to the rear.



M16000512

Figure 10. Rearward Movement of Key and Bolt Carrier Assembly.

13. The clutch spring of the burst cam clutches against the burst cam (Figure 11, Item 1) and causes it to rotate one notch as the hammer is forced back.

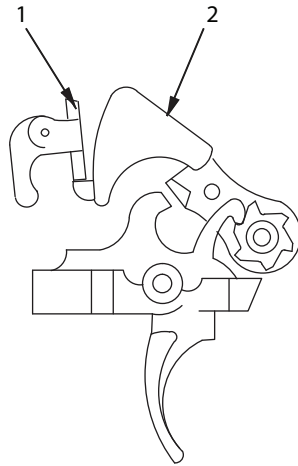


M16000513

Figure 11. Second Rotation of Burst Cam.

14. When hammer (Figure 12, Item 2) is fully to the rear, the automatic sear (Figure 12, Item 1) catches it.

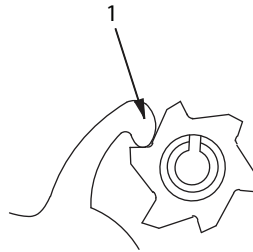
GENERAL - Continued



M16000514

Figure 12. Second Round Action of Automatic Sear.

15. The front hook of the burst disconnector (Figure 13, Item 1) is now fully in the third notch.



M16000515

Figure 13. Burst Disconnector in Third Notch.

GENERAL - Continued

16. As the key and bolt carrier assembly travels forward, the automatic sear (Figure 14, Item 1) releases the hammer (Figure 14, Item 2) and the hammer falls.

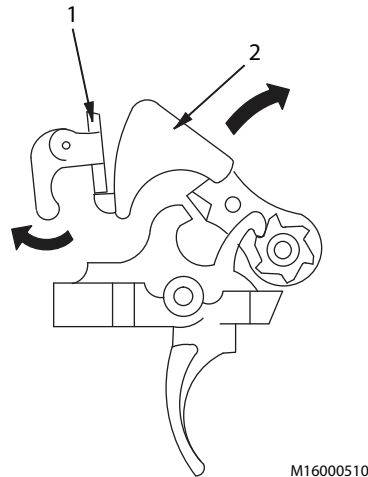


Figure 14. Release of Hammer Assembly.

17. When the hammer (Figure 15, Item 1) falls, the THIRD ROUND is fired.

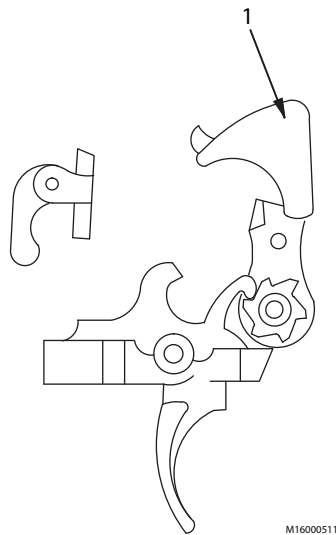


Figure 15. Firing of Third Round.

18. As the key and bolt carrier assembly moves to the rear, the hammer (Figure 16, Item 1) is forced back to the rear.

GENERAL - Continued

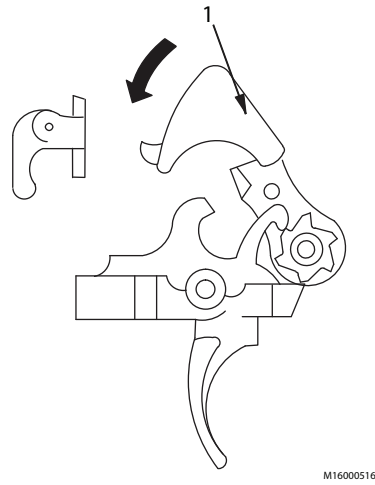


Figure 16. Final Movement of Key and Bolt Carrier Assembly.

19. The clutch spring of the burst cam clutches against the burst cam (Figure 17, Item 1) and causes it to rotate one notch as the hammer is forced back.

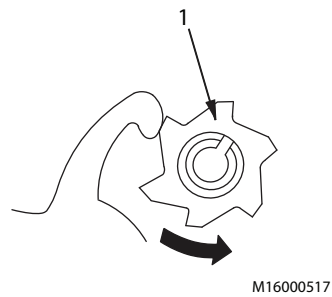


Figure 17. Third Rotation of Burst Cam.

GENERAL - Continued

20. When the hammer (Figure 18, Item 2) is fully to the rear, it is initially caught by the automatic sear (Figure 18, Item 1). However, the front hook of the burst disconnecter (Figure 18, Item 3) is now fully in the next stop notch which is deeper than the others.

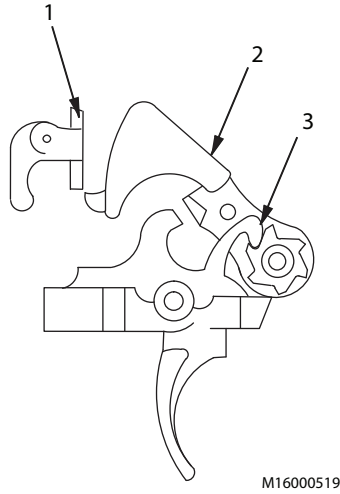
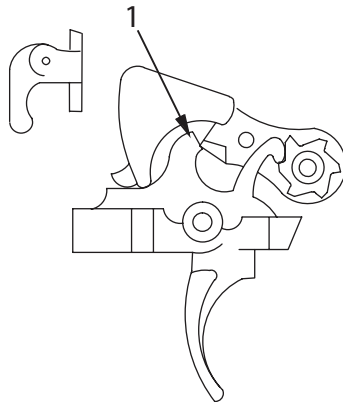


Figure 18. Rotation into Stop Notch.

21. Because a stop notch is deeper than the others, it allows the front hook of the burst disconnecter further forward than before. This allows the rear hook (Figure 19, Item 1) of the burst disconnecter to latch on the rear hammer notch. This holds the hammer fully to the rear even though the trigger is still to the rear. This happens when the burst is over and the firing is stopped.



M16000313

Figure 19. Completion of Firing.

GENERAL - Continued

22. Once the trigger is released, the trigger nose (Figure 20, Item 2) comes up and holds the hammer (Figure 20, Item 1) back.

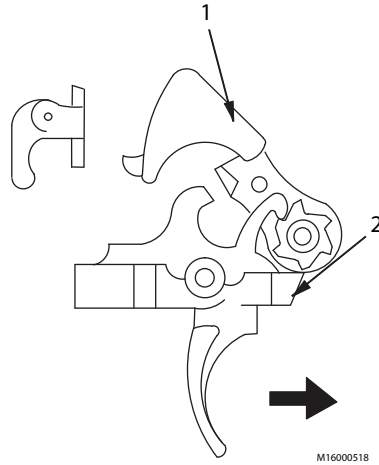


Figure 20. Release of Trigger.

END OF WORK PACKAGE

CHAPTER 2

TROUBLESHOOTING PROCEDURES M16 SERIES RIFLES AND M4 SERIES CARBINES

**MAINTAINER TROUBLESHOOTING
TROUBLESHOOTING INDEX**

GENERAL

Maintainer level troubleshooting information is provided for locating and correcting most of the operating troubles which may develop in the M16 series Rifle or M4 series Carbine. Each malfunction listed has a corrective action.

This manual cannot list all malfunctions that may occur, or all tests/inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, see individual repair sections in the maintenance procedures for each major assembly.

This index is provided for a quick reference to the symptoms covered in the troubleshooting procedures work package.

SYMPTOM INDEX

<u>Malfunction/Symptom</u>	<u>Troubleshooting Procedure</u>
1. Bolt assembly fails to lock to rear after firing last round	WP 0005
2. Failure of magazine to lock in	WP 0005
3. Failure to chamber	WP 0005
4. Failure to cock	WP 0005
5. Failure to cycle with selector lever set on AUTO (M16A3 and M4A1 only)	WP 0005
6. Failure to cycle with selector lever set on BURST (M16A2, M16A4, and M4 only)	WP 0005
7. Failure to eject	WP 0005
8. Failure to extract	WP 0005
9. Failure to feed	WP 0005
10. Failure to fire	WP 0005
11. Failure to lock	WP 0005
12. Failure to unlock	WP 0005
13. Fires two rounds with one pull of trigger with selector lever set on SEMI (double firing)	WP 0005
14. Fires with selector lever on SAFE or when trigger is released with selector lever on SEMI	WP 0005
15. Hammer pin walks	WP 0005
16. Rifle/carbine cannot be zeroed	WP 0005
17. Short recoil	WP 0005

END OF WORK PACKAGE

MAINTAINER TROUBLESHOOTING TROUBLESHOOTING PROCEDURES

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

References

WP 0010

WP 0011

WP 0012

WP 0013

WP 0015

WP 0017

WP 0019

WP 0021

WP 0023

WP 0024

WP 0026

Materials/Parts

Bore small arms cleaning brush (WP 0048,
Table 1, Item 3) Qty: 1

Carbon removing compound (WP 0048,
Table 1, Item 11) Qty: 1

Cleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 15) Qty: 1

Gloves (WP 0048, Table 1, Item 24) Qty: 1

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Equipment Condition

Weapon cleared (WP 0009)

TROUBLESHOOTING PROCEDURE**SYMPTOM**

FAILURE OF MAGAZINE TO LOCK IN.

MALFUNCTION

Dirty or corroded magazine catch (Figure 1, Item 1).

CORRECTIVE ACTION

Disassemble and clean (WP 0021).

MALFUNCTION

Defective magazine catch spring (Figure 1, Item 2).

CORRECTIVE ACTION

Replace magazine catch spring (WP 0021).

MALFUNCTION

Worn or broken magazine catch (Figure 1, Item 1).

CORRECTIVE ACTION

Replace magazine catch (WP 0021).

SYMPTOM

FAILURE TO FEED.

MALFUNCTION

Weak or broken magazine catch spring (Figure 1, Item 2).

CORRECTIVE ACTION

Replace magazine catch spring (WP 0021).

MALFUNCTION

Defective magazine catch (Figure 1, Item 1).

CORRECTIVE ACTION

Replace magazine catch (WP 0021).

MALFUNCTION

Magazine catch (Figure 1, Item 1) is out of adjustment.

CORRECTIVE ACTION

Adjust magazine catch (WP 0021).

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

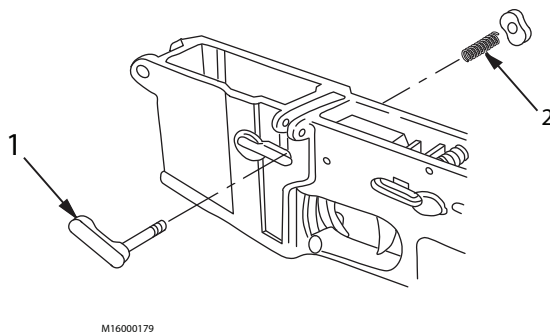


Figure 1. Magazine Catch and Spring Inspection.

SYMPTOM

FAILURE TO CHAMBER.

MALFUNCTION

Incorrect, weak, or broken action spring (Figure 2, Item 1).

CORRECTIVE ACTION**NOTE**

RIFLE ONLY: Free length should be 13 1/2 in. (34.29 cm) maximum. CARBINE ONLY: Free length should be 11 1/4 in. (28.58 cm) maximum.

1. Replace action spring (WP 0021).
2. Check for short recoil (See Symptom SHORT RECOIL).

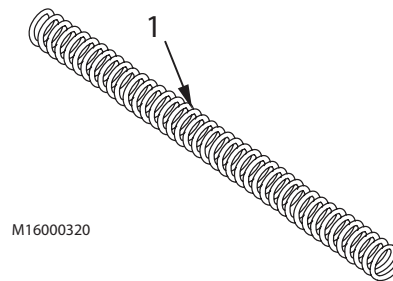


Figure 2. Action Spring.

SYMPTOM

FAILURE TO LOCK.

MALFUNCTION

Missing bolt cam pin (Figure 3, Item 2).

CORRECTIVE ACTION

Replace bolt cam pin (WP 0011).

MALFUNCTION

Damaged bolt carrier key (Figure 3, Item 3).

CORRECTIVE ACTION

Repair dented bolt carrier key (WP 0011).

MALFUNCTION

Loose screws on bolt carrier key (Figure 3, Item 1).

CORRECTIVE ACTION

Disassemble and repair (WP 0013).

CORRECTIVE ACTION - Continued

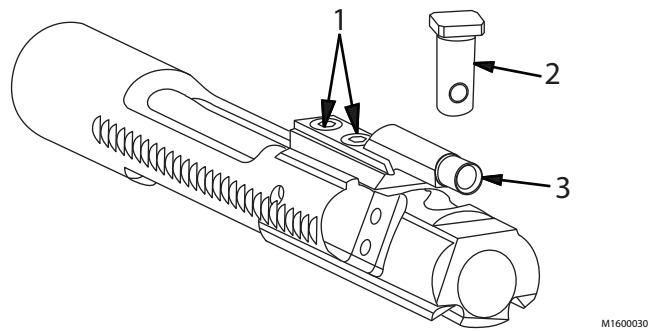


Figure 3. Bolt Carrier Assembly Inspection.

MALFUNCTION

Improperly assembled extractor spring assembly (Figure 4, Item 1).

CORRECTIVE ACTION

Replace or correctly assemble extractor spring assembly (WP 0012).

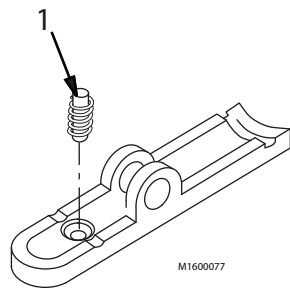


Figure 4. Extractor Spring Assembly Inspection.

MALFUNCTION

Bent gas tube (Figure 5, Item 1).

CORRECTIVE ACTION

1. Adjust to original configuration by bending gas tube in area of handguards.
2. Replace gas tube and check alignment (WP 0015).

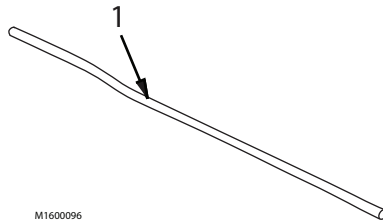


Figure 5. Gas Tube.

MALFUNCTION

Incorrect, weak, or broken action spring (Figure 6, Item 1).

CORRECTIVE ACTION**NOTE**

RIFLE ONLY: Free length should be 13 1/2 in. (34.29 cm) maximum. CARBINE ONLY: Free length should be 11 1/4 in. (28.58 cm) maximum.

Replace action spring (WP 0021).

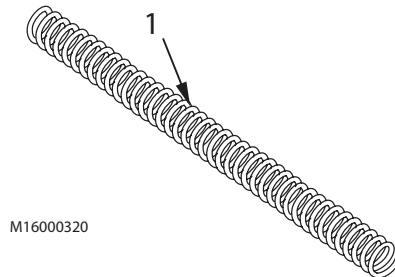


Figure 6. Action Spring.

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

FAILURE TO FIRE.

MALFUNCTION

Broken hammer (Figure 7, Item 4).

CORRECTIVE ACTION

Replace hammer (WP 0021).

MALFUNCTION

Broken hammer spring (Figure 7, Item 1).

CORRECTIVE ACTION

Replace hammer spring (WP 0023).

MALFUNCTION

Improper assembly of hammer spring.

CORRECTIVE ACTION

Assemble hammer spring properly (WP 0023).

MALFUNCTION

Burst cam (Figure 7, Item 3) and/or burst cam spring (Figure 7, Item 2) is frozen or improperly assembled.

CORRECTIVE ACTION

Disassemble, clean, lubricate, and reassemble burst cam and/or burst cam spring correctly (WP 0023).

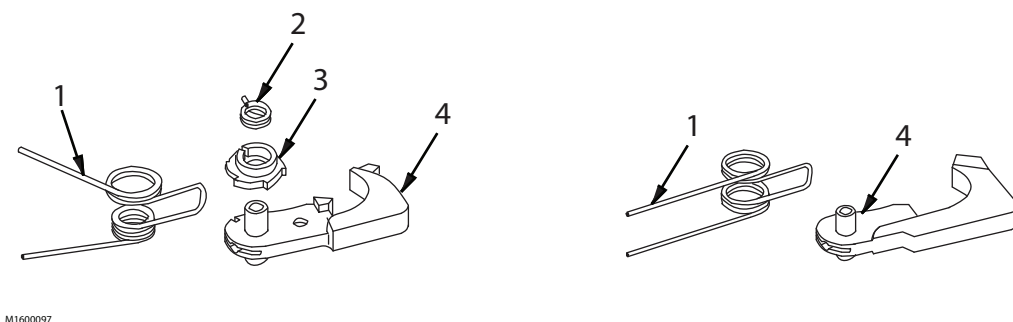


Figure 7. Hammer and Burst Cam Inspection.

MALFUNCTION

Broken, defective, or missing firing pin retaining pin (Figure 8, Item 1).

CORRECTIVE ACTION

Replace firing pin retaining pin (WP 0011).

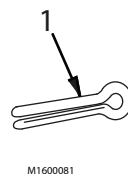


Figure 8. Firing Pin Retaining Pin Inspection.

MALFUNCTION

Selector lever is frozen on SAFE position (Figure 9, Item 1).

CORRECTIVE ACTION

Disassemble and clean selector lever (WP 0021).

MALFUNCTION

Broken firing pin or firing pin that does not meet gauge protrusion requirement (Figure 9, Item 2).

CORRECTIVE ACTION

Replace firing pin (WP 0021).

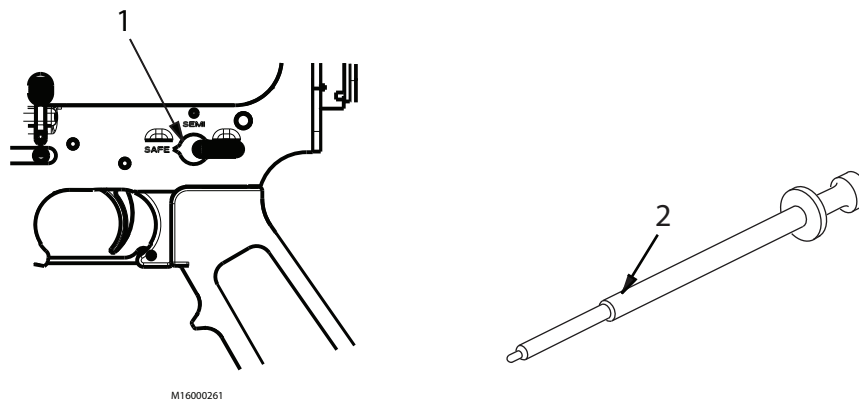


Figure 9. Selector Lever and Firing Pin Inspection.

SYMPTOM

FAILURE TO UNLOCK.

MALFUNCTION

Burred locking lugs on bolt assembly (Figure 10, Item 2).

CORRECTIVE ACTION

Remove burrs (WP 0012).

MALFUNCTION

Burred lugs on barrel extension (Figure 10, Item 1).

CORRECTIVE ACTION

Remove burrs (WP 0015).

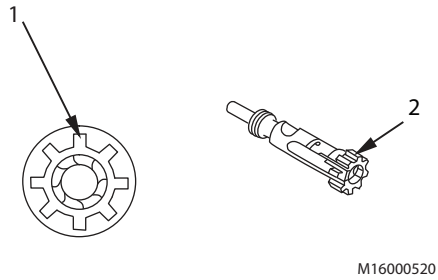
CORRECTIVE ACTION - Continued

Figure 10. Locking Lugs Inspection.

MALFUNCTION

Short Recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

FAILURE TO EXTRACT.

MALFUNCTION

Defective extractor pin (Figure 11, Item 1), cartridge extractor (Figure 11, Item 3), and/or extractor spring assembly (Figure 11, Item 2).

CORRECTIVE ACTION

Replace extractor pin, cartridge extractor, and/or extractor spring assembly (WP 0012).

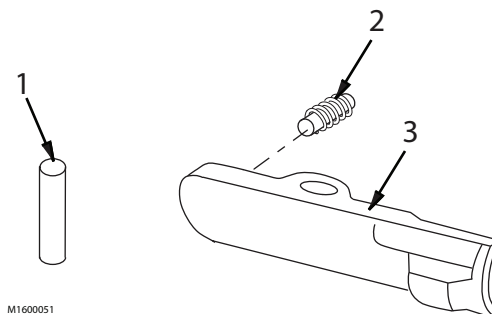


Figure 11. Cartridge Extractor Inspection.

MALFUNCTION

Chamber pitted.

CORRECTIVE ACTION

Replace barrel assembly (WP 0015).

MALFUNCTION

Short Recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

FAILURE TO EJECT.

MALFUNCTION

Broken cartridge ejector (Figure 12, Item 3).

CORRECTIVE ACTION

Replace cartridge ejector (WP 0012).

MALFUNCTION

Cartridge ejector is stuck in bolt body (Figure 12, Item 1).

CORRECTIVE ACTION

Disassemble and clean cartridge ejector and bolt body (WP 0012).

MALFUNCTION

Weak or broken ejector spring (Figure 12, Item 2).

CORRECTIVE ACTION

Replace ejector spring (WP 0012).

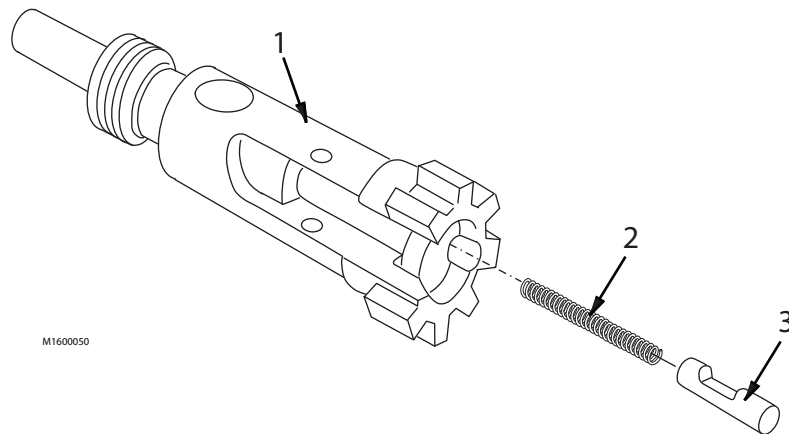
CORRECTIVE ACTION - Continued

Figure 12. Cartridge Ejector Inspection.

MALFUNCTION

Short Recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

FAILURE TO COCK.

MALFUNCTION

Worn or broken trigger nose (Figure 13, Item 2) or trigger spring (Figure 13, Item 3).

CORRECTIVE ACTION

Replace trigger (Figure 13, Item 1) (WP 0021) or trigger spring (WP 0024).

MALFUNCTION

Worn or broken hammer trigger notch (Figure 13, Item 6).

CORRECTIVE ACTION

Replace hammer (Figure 13, Item 4) (WP 0021).

MALFUNCTION

Worn or broken hammer disconnecter hook (Figure 13, Item 7).

CORRECTIVE ACTION

Replace hammer (Figure 13, Item 4) (WP 0021).

MALFUNCTION

Worn or broken automatic sear hook (Figure 13, Item 5).

CORRECTIVE ACTION

Replace hammer (Figure 13, Item 4) (WP 0021).

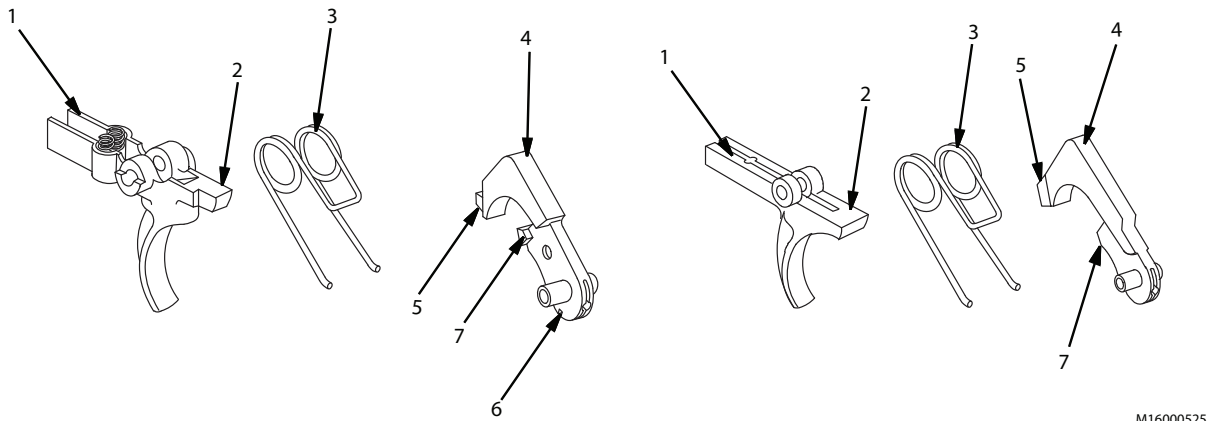


Figure 13. Trigger and Hammer Inspection.

MALFUNCTION

Worn or broken disconnecter hooks (Figure 14, Item 1).

CORRECTIVE ACTION

Replace disconnecter(s) (Figure 14, Item 2) (WP 0021).

MALFUNCTION

Weak, broken, or missing disconnecter springs (Figure 14, Item 7).

CORRECTIVE ACTION

Replace disconnecter springs (WP 0024).

MALFUNCTION

Worn, broken, or missing automatic sear (Figure 14, Item 4).

CORRECTIVE ACTION

Replace automatic sear (WP 0021).

MALFUNCTION

Weak or broken automatic sear spring (Figure 14, Item 8).

CORRECTIVE ACTION

Replace automatic sear (WP 0021).

MALFUNCTION

Long leg of automatic sear spring (Figure 14, Item 3) is incorrectly assembled in receiver.

CORRECTIVE ACTION

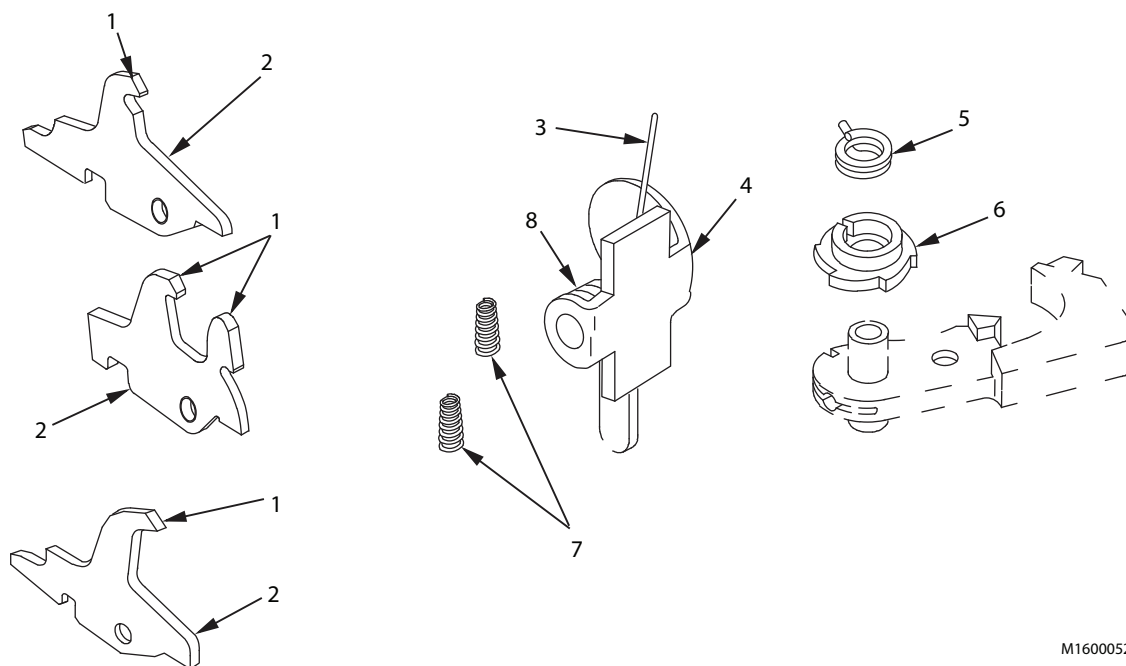
Remove automatic sear and install correctly (WP 0021).

MALFUNCTION

Burst cam (Figure 14, Item 6) or burst cam spring (Figure 14, Item 5) is frozen or improperly assembled.

CORRECTIVE ACTION

Disassemble, inspect, clean, lubricate, or replace (WP 0023).



M16000521

Figure 14. Disconnector, Automatic Sear, and Burst Cam Inspection.

MALFUNCTION

Short Recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

SHORT RECOIL.

MALFUNCTION

Broken or damaged action spring (Figure 15, Item 1).

CORRECTIVE ACTION

Replace action spring (WP 0021).

MALFUNCTION

Incorrect action spring (Figure 15, Item 1) installed.

CORRECTIVE ACTION**NOTE**

RIFLE ONLY: Free length should be 13 1/2 in. (34.29 cm) maximum. CARBINE ONLY: Free length should be 11 1/4 in. (28.58 cm) maximum.

Install correct action spring for weapon type (WP 0021).

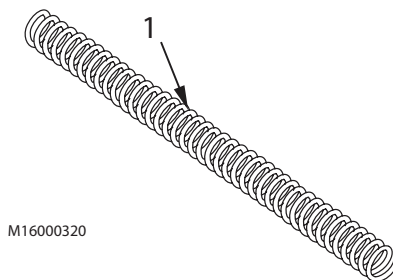


Figure 15. Action Spring.

MALFUNCTION

Worn, missing, or broken bolt rings (Figure 16, Item 1).

CORRECTIVE ACTION

Replace bolt rings (WP 0012).

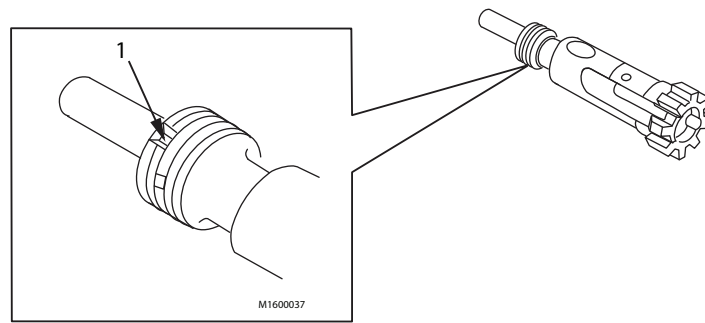
CORRECTIVE ACTION - Continued

Figure 16. Bolt Ring.

MALFUNCTION

Broken or bent gas tube (Figure 17, Item 1).

CORRECTIVE ACTION

Adjust or replace gas tube (WP 0015).

MALFUNCTION

Gas tube spring pin (Figure 17, Item 3) is missing from front sight (Figure 17, Item 2).

CORRECTIVE ACTION

Replace gas tube spring pin (WP 0015).

MALFUNCTION

Partially plugged gas system because of carbon build-up in gas tube.

CORRECTIVE ACTION

Replace gas tube (WP 0015).

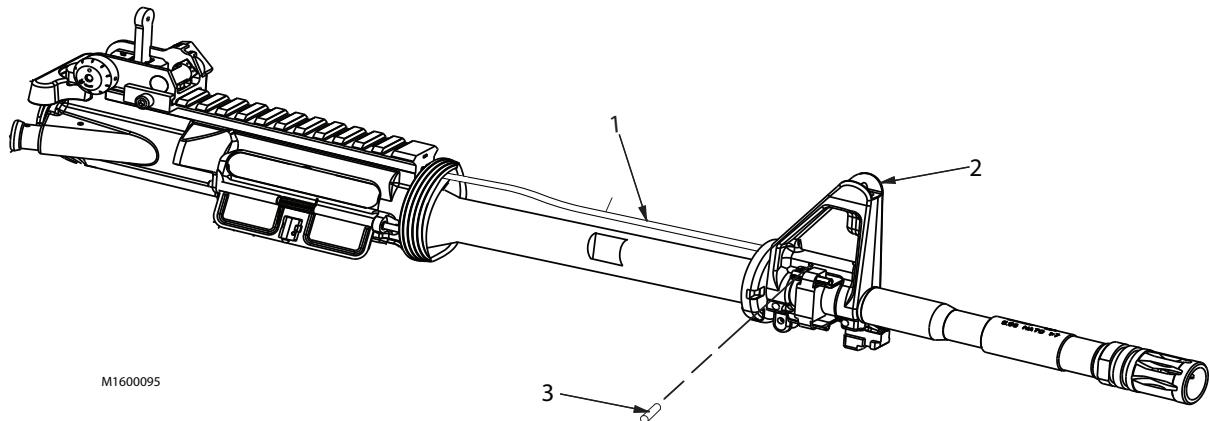
CORRECTIVE ACTION - Continued

Figure 17. Gas Tube and Spring Pin.

MALFUNCTION

Carbon build-up in barrel gas port (Figure 18, Item 1).

CORRECTIVE ACTION**WARNING****CARBON REMOVING COMPOUND**

Remove carbon build-up by soaking barrel in carbon removing compound. Use gloves with carbon removing compound. Use a bore small arms cleaning brush.

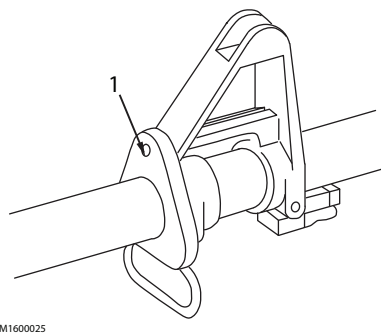


Figure 18. Barrel Gas Port Cleaning.

SYMPTOM

RIFLE/CARBINE CANNOT BE ZEROED.

MALFUNCTION

Defective or bent barrel assembly (Figure 19, Item 3).

CORRECTIVE ACTION

Replace barrel assembly (WP 0015).

MALFUNCTION

Barrel assembly is out of alignment with rear sight (Figure 19, Item 1A) or Back-Up Iron Sight (BUIS) Figure 19, Item 1) on upper receiver.

CORRECTIVE ACTION

Align barrel assembly and upper receiver (WP 0015).

MALFUNCTION

Defective or bent front sight post (Figure 19, Item 2).

CORRECTIVE ACTION

Replace front sight post (WP 0019).

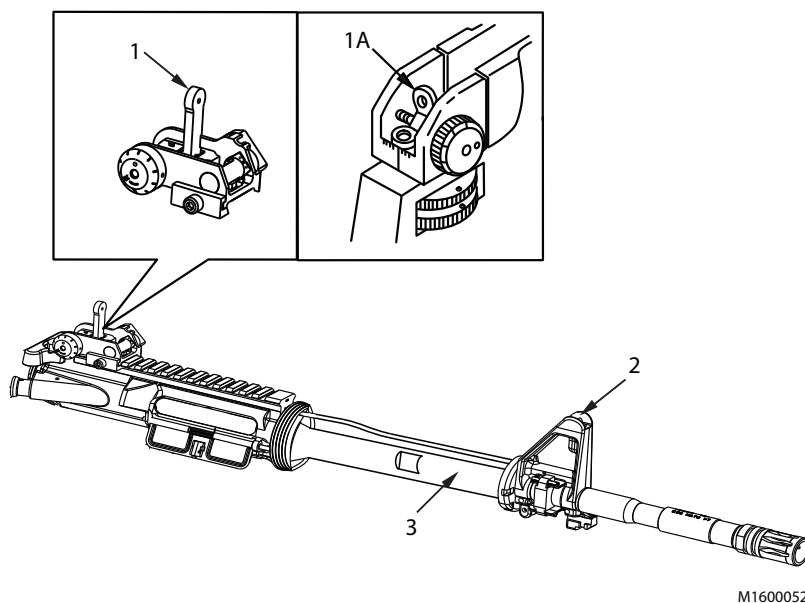


Figure 19. Front Sight and Rear Sight.

MALFUNCTION

Defective rear sight.

CORRECTIVE ACTION

Repair or replace as required (M16A2 (WP 0017); BUIS (WP 0010)).

SYMPTOM

FAILURE TO CYCLE WITH SELECTOR LEVER SET ON BURST (M16A2, M16A4, AND M4 ONLY).

MALFUNCTION

Broken automatic sear (Figure 20, Item 3) or automatic sear spring (Figure 20, Item 2).

CORRECTIVE ACTION

Replace automatic sear (WP 0021).

MALFUNCTION

Faulty selector lever (Figure 20, Item 1).

CORRECTIVE ACTION

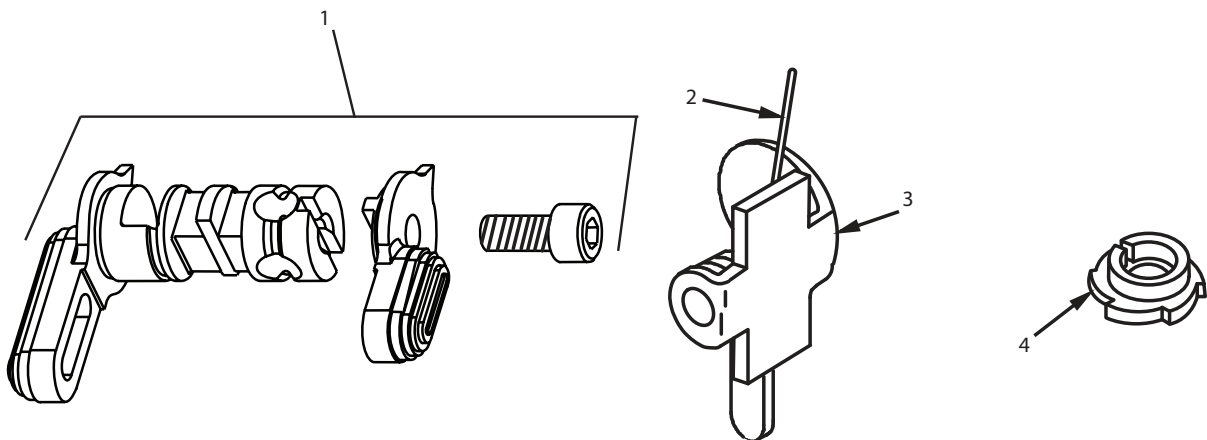
Replace selector lever (WP 0021).

MALFUNCTION

Broken tooth on burst cam (Figure 20, Item 4).

CORRECTIVE ACTION

Replace burst cam (WP 0023).



M16000322

Figure 20. Automatic Sear and Selector Lever.

MALFUNCTION

Broken burst cam spring (Figure 21, Item 2).

CORRECTIVE ACTION

Replace burst cam spring (WP 0023).

MALFUNCTION

Bend in burst cam spring is installed backwards (toward outside).

CORRECTIVE ACTION

Install burst cam spring properly with bend to inside (WP 0023).

MALFUNCTION

Burst cam spring fails to clutch and burst cam (Figure 21, Item 3) fails to rotate back with hammer (Figure 21, Item 4).

CORRECTIVE ACTION**NOTE**

When hammer is rotated back to cocked position, burst cam should rotate to allow burst disconnecter to latch in next notch.

1. Replace burst cam spring (WP 0023).
2. If problem continues, replace hammer and burst cam (WP 0023).

MALFUNCTION

Broken front hook (Figure 21, Item 1) on burst disconnecter (Figure 21, Item 5).

CORRECTIVE ACTION

Replace burst disconnecter (WP 0021).

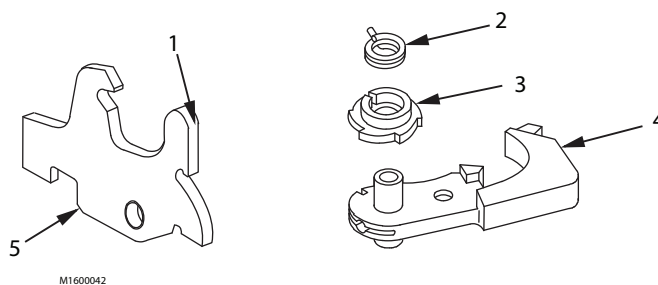


Figure 21. Burst Disconnecter and Burst Cam.

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

FAILURE TO CYCLE WITH SELECTOR LEVER SET ON AUTO (M16A3 AND M4A1 ONLY).

MALFUNCTION

Broken automatic sear (Figure 22, Item 3) or automatic sear spring (Figure 22, Item 2).

CORRECTIVE ACTION

Replace automatic sear (WP 0021).

MALFUNCTION

Faulty selector lever (Figure 22, Item 1).

CORRECTIVE ACTION

Replace selector lever (WP 0021).

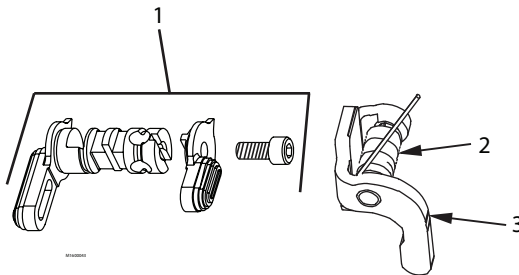


Figure 22. Selector Lever and Automatic Sear.

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

Check for short recoil (See Symptom SHORT RECOIL).

SYMPTOM

FIRES TWO ROUNDS WITH ONE PULL OF TRIGGER WITH SELECTOR LEVER SET ON SEMI (DOUBLE FIRING).

MALFUNCTION

Defective semiautomatic disconnecter (Figure 23, Item 1).

CORRECTIVE ACTION

Replace semiautomatic disconnecter (WP 0021).

MALFUNCTION

Worn or broken trigger notch of hammer (searing portion) (Figure 23, Item 2).

CORRECTIVE ACTION

Replace hammer (Figure 23, Item 4) (WP 0021).

MALFUNCTION

Worn or broken disconnecter hook of hammer (Figure 23, Item 3).

CORRECTIVE ACTION

Replace hammer (WP 0021).

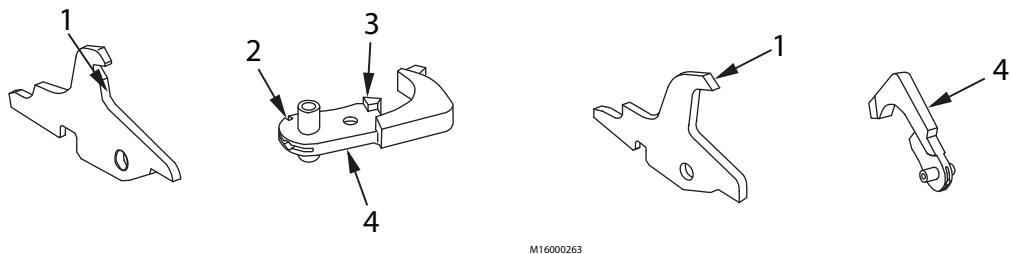


Figure 23. Semiautomatic Disconnecter and Hammer.

MALFUNCTION

Worn or broken trigger (searing portion) (Figure 24, Item 3).

CORRECTIVE ACTION

Replace trigger (WP 0021).

MALFUNCTION

Worn trigger pin hole (Figure 24, Item 1).

CORRECTIVE ACTION

Gauge trigger pin hole (WP 0026).

MALFUNCTION

Worn hammer pin hole (Figure 24, Item 2).

CORRECTIVE ACTION

Gauge hammer pin hole (WP 0026).

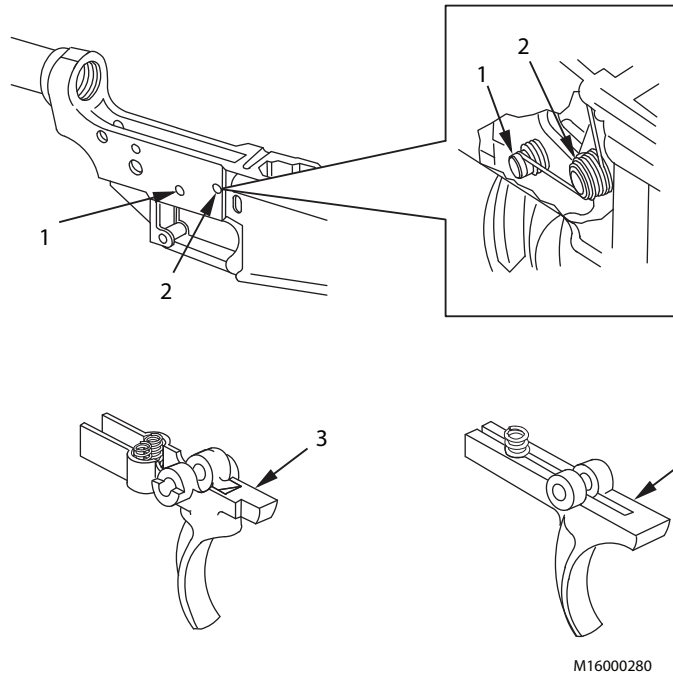


Figure 24. Trigger and Pin Hole.

SYMPTOM

FIRES WITH SELECTOR LEVER ON SAFE OR WHEN TRIGGER IS RELEASED WITH SELECTOR LEVER ON SEMI.

MALFUNCTION

Defective selector lever (Figure 25, Item 1).

CORRECTIVE ACTION

Replace selector lever (WP 0021).

MALFUNCTION

Worn or broken rear portion of trigger (Figure 25, Item 2).

CORRECTIVE ACTION

Replace trigger (WP 0021).

CORRECTIVE ACTION - Continued

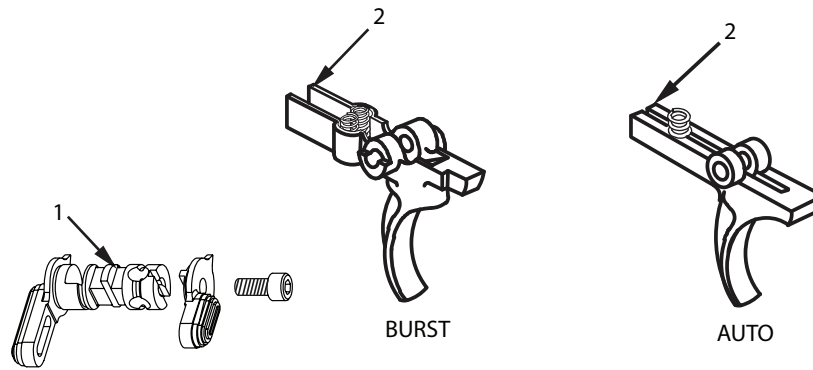


Figure 25. Selector Lever and Trigger.

SYMPTOM

HAMMER PIN WALKS.

MALFUNCTION

Worn hammer pin (Figure 26, Item 1).

CORRECTIVE ACTION

Replace hammer pin (WP 0021).

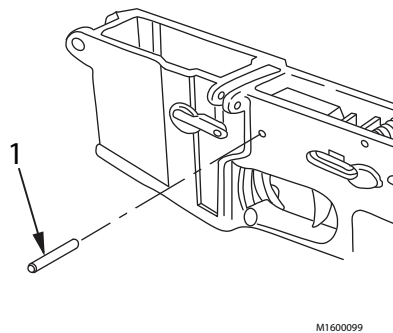


Figure 26. Hammer Pin.

SYMPTOM

BOLT ASSEMBLY FAILS TO LOCK TO REAR AFTER FIRING LAST ROUND.

MALFUNCTION

Broken bolt catch (Figure 27, Item 1).

CORRECTIVE ACTION

Replace bolt catch (WP 0021).

MALFUNCTION

Weak or broken bolt catch spring (Figure 27, Item 2).

CORRECTIVE ACTION

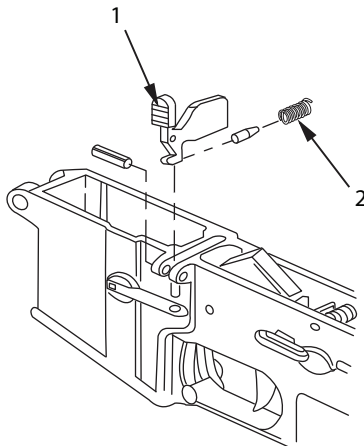
Replace bolt catch spring (WP 0021).

MALFUNCTION

Restricted movement of bolt catch.

CORRECTIVE ACTION

Disassemble and clean (WP 0021).



M16000524

Figure 27. Bolt Catch.

END OF WORK PACKAGE

CHAPTER 3

PREVENTIVE MAINTENANCE INFORMATION M16 SERIES RIFLES AND M4 SERIES CARBINES

**MAINTAINER MAINTENANCE
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION**

GENERAL

Preventive Maintenance Checks and Services (PMCS) must be performed by a Maintainer to be sure the M16 series Rifle and M4 series Carbine is in good operating condition and ready for its primary mission.

To ensure maximum operational readiness, it is necessary that the M16 series rifle and M4 series carbine be inspected at regular intervals so any defects can be discovered and corrected before serious damage or failure occurs.

EXPLANATION OF COLUMN ENTRIES**Item No. Column**

Numbers in this column are for reference. Item numbers appear in the order in which checks and services must be performed for the intervals listed.

Interval Column

This column indicates when each check is to be performed in the procedure column.

Man-Hour Column

This column indicates the amount of time required to perform the check or service.

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

Information in this column describes what faults will keep the equipment from being capable of performing its primary mission. If applicable, following Not Mission Capable (NMC) If: condition is a suggested remedy that will correct the discovered discrepancy. Follow standard operating procedures for maintaining the equipment or reporting equipment failure. Report any malfunctions or failures on DA Form 2404/DA Form 5988-E (Equipment Inspection and Maintenance Worksheet) or refer to DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

END OF WORK PACKAGE

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

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

Materials/Parts

Abrasive cloth (WP 0048, Table 1, Item 19) Qty: 1

Cleaner, Lubricant, and Preservative (CLP)

(WP 0048, Table 1, Item 12) Qty: 1

Dry cleaning solvent (WP 0048, Table 1, Item 38)

Qty: 1

Gloves (WP 0048, Table 1, Item 18) Qty: 1

Rifle Bore Cleaner (RBC) (WP 0048,

Table 1, Item 13) Qty: 1

Solid Film Lubricant (SFL) (WP 0048,

Table 1, Item 22) Qty: 1

Wash pan (WP 0048, Table 1, Item 28) Qty: 1

Lock washer (WP 0050, Table 1, Item 6) Qty: 1

Machine screw (WP 0050, Table 1, Item 4) Qty: 1

References (cont.)

DA Form 2404/5988-E

NAVSEA Instruction 8370.2

TM 9-1005-319-10

WP 0010

WP 0011

WP 0012

WP 0015

WP 0017

WP 0019

WP 0026

Equipment Condition

Weapon cleared (WP 0009)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

References

AFI 36-2654

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Quarterly		Charging Handle Assembly	<p style="text-align: center;">WARNING</p> <ul style="list-style-type: none"> • Before starting an inspection, be sure to clear weapon. Do not pull trigger until weapon is cleared. Inspect chamber to ensure that it is empty and no ammunition is in position to be chambered. • Ammunition can explode. Do not keep live ammunition near work area. Failure to comply may result in injury or death to personnel. • If weapon fails any of the following function tests, perform required maintenance. Continued use of weapon could result in death or injury to personnel. <p style="text-align: center;">NOTE</p> <ul style="list-style-type: none"> • An inactive weapon is a weapon which has been stored in an arms room for a period of 90 days without use. The weapon may or may not have been assigned to an individual. Inactive weapons shall receive quarterly PMCS unless inspection reveals more frequent servicing is necessary. Normal cleaning PMCS of an inactive weapon will be performed every 90 days. If corrosion is detected on a weapon prior to the end of the 90-day period, the PMCS should be performed immediately. 	

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<ul style="list-style-type: none"> • All optics and accessories must be removed prior to inspection to ensure proper inspection of mounting surfaces and allow complete inspection for bulges, dents, and cracks. • SFL is the authorized touch up and may be used on up to one third of the exterior finish of the weapon. 	

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<ul style="list-style-type: none"> <li>• FOR ARMY CONUS USE ONLY AND AIR FORCE TRAINING WEAPONS ONLY: SFL may be used as a touch up without limitation on the upper receiver and barrel assembly. 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 upper receiver and barrel 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. <li>• When determining mission capability, deadline if it is a deficiency. 	

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

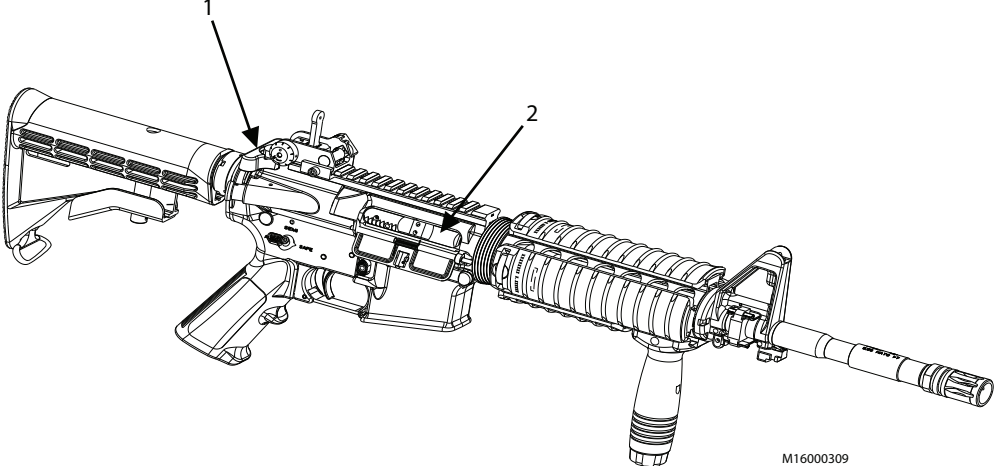
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Quarterly		Charging Handle Assembly	Pull charging handle (Figure 1, Item 1) to rear. Check that chamber is clear. Let bolt carrier assembly (Figure 1, Item 2) close. Push charging handle forward to locked position. Leave hammer in cocked position. Do not squeeze trigger.	Charging handle does not lock in place when in forward position.
 <p>Figure 1. Clear Chamber.</p>					
2	Quarterly		Selector Lever	<p>SAFE Position</p> <p>NOTE</p> <p>M4A1 Only - Perform Modified Function refer to TM 9-1005-319-10.</p>	
2	Quarterly		Selector Lever	<p>1. Place selector lever (Figure 2, Item 1) in SAFE position. Squeeze trigger (Figure 2, Item 2). Hammer should not fall.</p> <p>2. Attempt to rotate selector lever forward (Figure 2, Item 1) past SAFE. Selector lever must not be able to rotate forward beyond SAFE.</p>	<p>Hammer falls.</p> <p>Selector lever can be rotated forward past SAFE.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

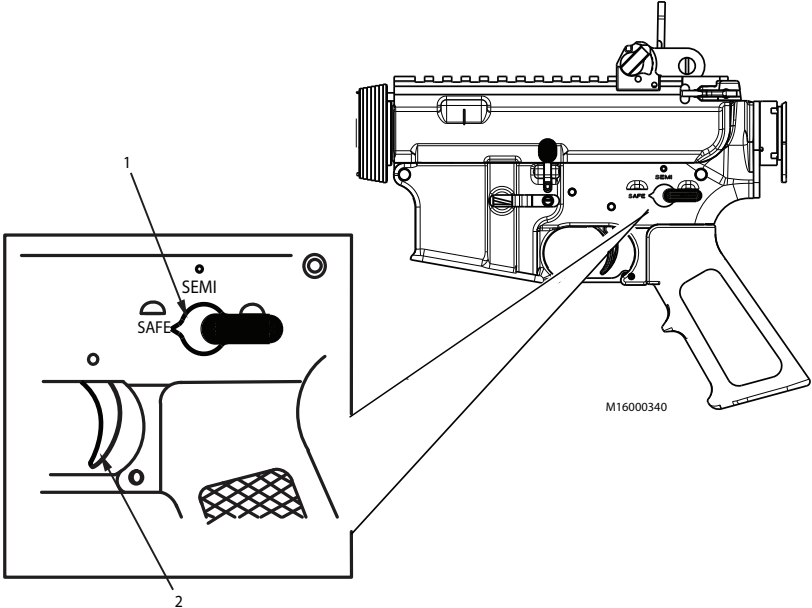
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				 <p style="text-align: center;">M16000340</p>	
				<p>Figure 2. SAFE.</p> <p>SEMI Position</p> <ol style="list-style-type: none"> Place selector lever (Figure 3, Item 1) in SEMI position. Squeeze trigger (Figure 3, Item 2). Hammer should fall. <p style="text-align: center;">NOTE</p> <p>For the purpose of the following test, "slow" is defined as $\frac{1}{4}$ to $\frac{1}{2}$ the normal rate of trigger release.</p> <ol style="list-style-type: none"> Hold trigger (Figure 3, Item 2) to the rear, charge weapon, and release trigger with a slow, smooth motion, without hesitations or stops, until the trigger is fully forward (an audible click should be heard). Hammer should not fall until trigger is squeezed. Repeat steps 1 through 3 five times. 	<p>Hammer does not fall.</p> <p>Hammer falls.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

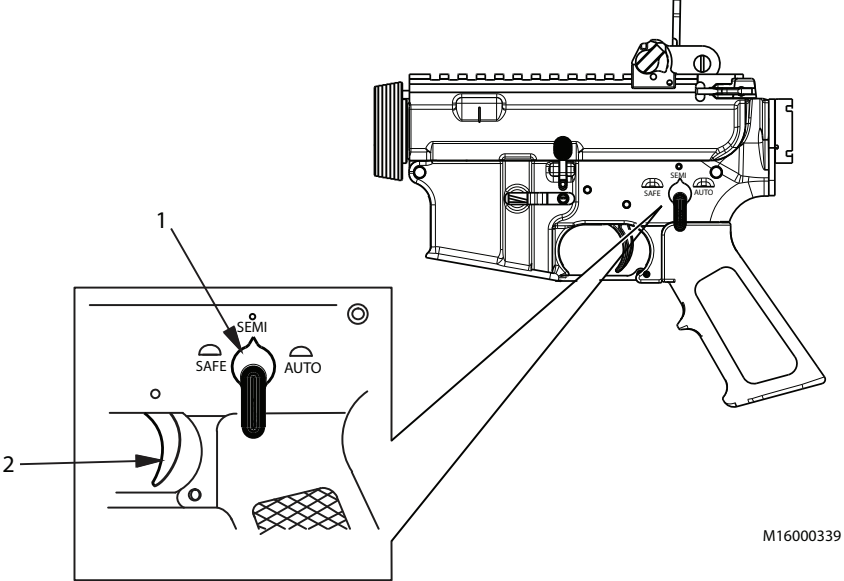
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p style="text-align: center;">  </p>	<p style="text-align: center;">Figure 3. SEMI.</p> <p>Selector Lever - BURST (M16A2, M16A4, and M4 Only)</p> <p style="text-align: center;">NOTE</p> <p>Burst disconnecter should hold hammer to the rear when it engages deep notch of burst cam.</p> <ol style="list-style-type: none"> 1. Place selector lever (Figure 4, Item 1) in BURST position. Charge weapon and squeeze trigger (Figure 4, Item 2). Hammer should fall. 2. Hold trigger (Figure 4, Item 2) to the rear, pull charging handle to the rear, and release it three times. Release trigger. Squeeze trigger. Hammer should fall. Repeat steps 1 and 2 five times. 3. Attempt to rotate selector lever past BURST position. Selector lever must not be able to rotate rearward beyond BURST. <p>Selector Lever - AUTO (M16A3 and M4A1 Only)</p>	<p>Hammer does not fall.</p> <p>Hammer does not fall.</p> <p>Selector lever can rotate rearward beyond BURST.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>1. Place selector lever (Figure 4, Item 1) in AUTO position. Charge weapon and squeeze trigger (Figure 4, Item 2). Hammer should fall.</p> <p style="text-align: center;">NOTE</p> <p>Automatic sear should release hammer while holding trigger in squeezed position before releasing and re-squeezing trigger.</p> <p>2. Hold trigger (Figure 4, Item 2) to the rear, charge weapon, and release trigger. Squeeze trigger. Hammer should not fall.</p> <p>3. Attempt to rotate selector lever (rearward) past AUTO. Selector lever must not be able to rotate rearward beyond AUTO.</p> <p>Selector Lever - SAFE (All Weapons)</p> <p>1. With hammer in forward position, attempt to place selector lever (Figure 4, Item 1) in SAFE position. Selector lever should not move to safe position.</p>	<p>Hammer does not fall.</p> <p>Hammer falls.</p> <p>Selector lever can be rotated rearward beyond AUTO.</p> <p>Selector lever moves to SAFE position.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>Figure 4. BURST/AUTO.</p>					
3	Quarterly		Upper Receiver and Barrel Assembly	<p>M16A2 Only</p> <p>CAUTION</p> <p>Do not use screwdriver or any other tool when removing handguard assemblies; use of tools may damage handguard assemblies and/or slip ring.</p> <p>NOTE</p> <ul style="list-style-type: none"> Refer to TM 9-1005-319-10 for "buddy system" procedure for removing handguard assemblies. 	

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

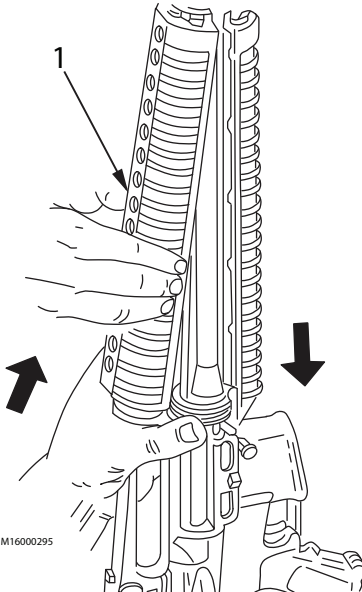
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<ul style="list-style-type: none"> • Cracks are acceptable providing they do not extend into the handguard retaining flange, or adversely affect rifle operation, operator safety, or proper retention of handguard assembly. <p>1. Remove and inspect handguard assemblies (Figure 5, Item 1) internally and externally for cracks and/or damage.</p>	
					
				<p>2. Replace handguard assembly if heat shield is loose enough to rattle when installed on rifle.</p> <p>M16A3, M16A4, M4, and M4A1 Only</p> <p>1. Remove lower handguard (Figure 6, Item 2) (WP 0015) and check for loose or missing heat shield.</p> <p>2. Check upper handguard assembly for screw/retainer and forward leaf spring outside of handguard cap.</p>	<p>Handguard missing or unserviceable.</p> <p>Lower handguard missing. Heat shield of lower handguard missing.</p>

Figure 5. Handguard.

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

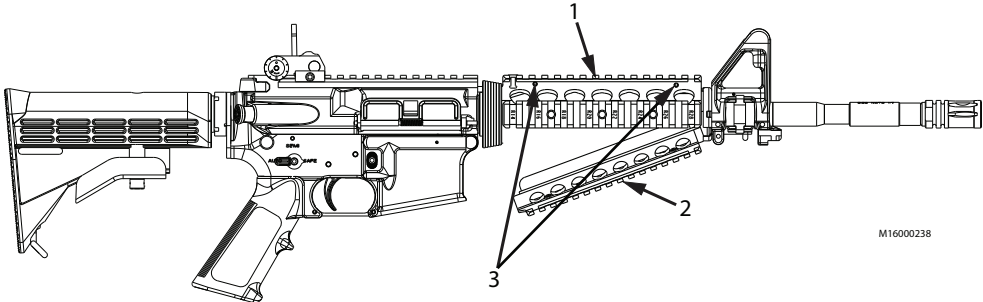




ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>3. Remove upper handguard.</p> <p>4. Check rear flange of upper handguard assembly (Figure 6, Item 1) for cracks.</p> <p>5. Check for presence of pins securing forward leaf spring and rear clamp (Figure 6, Item 3).</p> <p style="text-align: center;">NOTE</p> <p>Step 6 only applies to units with M203 Grenade Launchers and/or when weapons have been designated for transfer or turn in.</p> <p>6. Check for presence of barrel stop assembly (M16A3, M16A4).</p>	<p>Upper handguard missing. Heat shield of upper handguard missing.</p> <p>Rear flange of upper handguard assembly displays cracks.</p> <p>Screw/retainer, forward leaf spring, or rear clamp missing.</p> <p>Barrel stop assembly missing (M16A3, M16A4).</p>
 <p>Figure 6. Rail Inspection.</p>					
4	Quarterly		Upper Receiver and Barrel Assembly	<p style="text-align: center;">WARNING</p> <div style="display: flex; justify-content: center; gap: 10px;">     </div> <p style="text-align: center;">DRY CLEANING SOLVENT</p> <p style="text-align: center;">CAUTION</p> <p>Damage may occur if excessive force is used to release takedown pin or pivot pin. Use hand pressure ONLY.</p> <p>1. Release takedown pins and open and separate receivers.</p>	

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				2. Hand check compensator (Figure 7, Item 4) for looseness on barrel (Figure 7, Item 3). 3. Hand check barrel for looseness on upper receiver (Figure 7, Item 5). 4. Check center slot of compensator (Figure 7, Item 4) for alignment (WP 0015). 5. Check gas tube (Figure 7, Item 2), forward assist assembly (Figure 7, Item 6), and rear sight assembly for damage (Figure 7, Item 1). 6. Push in on forward assist assembly (Figure 7, Item 6) several times to check for slippage of the forward assist pawl. Refer to (WP 0017) for lubrication instructions. 7. Manually lock bolt forward by using forward assist. 8. Rear sight spring should retain rear sight assembly in either position with firmness (M16A2).	Compensator is loose. Barrel is loose. Gas tube, forward assist assembly, or rear sight assembly is damaged. Bolt does not lock.

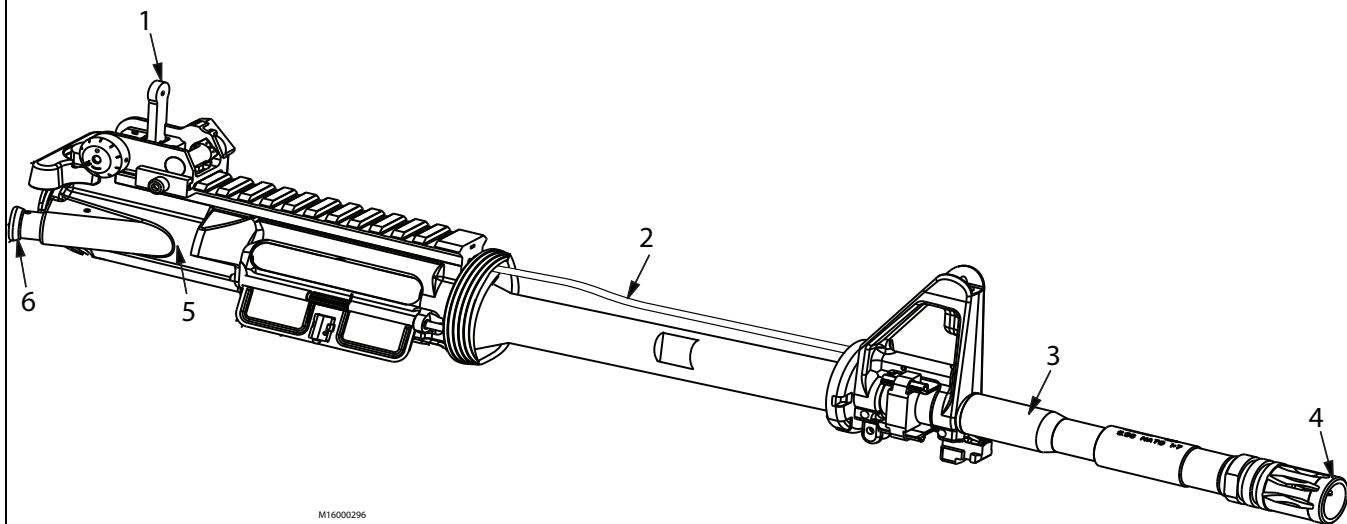
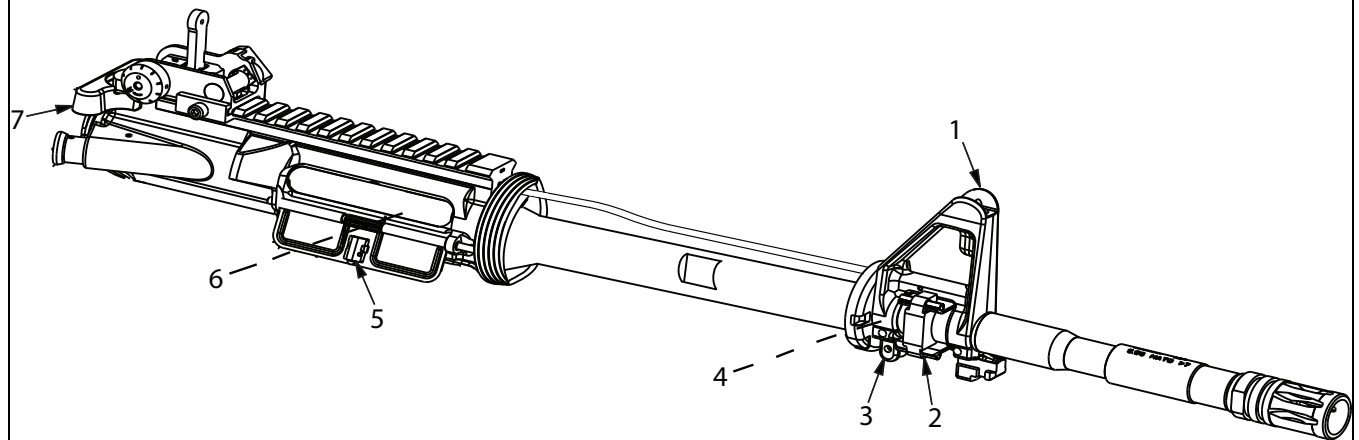


Figure 7. Upper Receiver.

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>9. Check front sight post, detent, and spring (Figure 8, Item 1) for damage and corrosion. Clean and lubricate (WP 0019).</p> <p>10. Check charging handle (Figure 8, Item 7) and upper receiver where the charging handle seats. Look for excessive wear, pitting, or holes where the charging handle seats.</p> <p>11. Check the charging handle (Figure 8, Item 7) and ejection port cover (Figure 8, Item 5) for defects and proper function.</p> <p>12. Check sling swivel (Figure 8, Item 3) and rivet (Figure 8, Item 4) for damage and proper function.</p> <p>13. M16A3, M16A4, M4, M4A1 Only Check locking bar and spring pins (Figure 8, Item 2) for damage.</p> <p>14. Upper receiver feed ramps and barrel extension (Figure 8, Item 6) should not be excessively worn.</p>	<p>Front sight is bent or damaged. Detent and/or spring is corroded or damaged.</p> <p>Charging handle or upper receiver is defective</p> <p>Charging handle and/or ejection port cover damaged or not functioning properly.</p> <p>Sling swivel or rivet missing or damaged.</p> <p>Locking bar and/or spring pins are missing or damaged.</p> <p>Feed ramps or barrel are excessively worn or pitted.</p>



M16000297

Figure 8. Chamber and Sling Mount.

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>15. Hold barrel (Figure 9, Item 6) at 40-degree angle (muzzle down).</p> <p>16. Pull charging handle (Figure 9, Item 4) to rear.</p> <p>17. Hold bolt carrier assembly (Figure 9, Item 8) to rear and push charging handle forward.</p> <p>18. Release bolt carrier assembly.</p> <p>19. The bolt carrier assembly (Figure 9, Item 1) should close and lock under its own weight. If it does not, remove the bolt assembly (Figure 9, Item 3) from the key and bolt carrier assembly and slide the key and bolt carrier assembly (without bolt) back and forth in the upper receiver and barrel assembly (Figure 9, Item 7). If the gas tube hits the carrier key on the inside of the upper receiver, or if the gas tube (Figure 9, Item 5) binds in the carrier key (Figure 9, Item 2), correct the malfunction by adjusting (slightly bending) the gas tube in the area of the handguard assemblies.</p>	<p>Adjustment does not correct the malfunction.</p>
<p>M16000298</p>					
<p>Figure 9. Upper Receiver and Bolt Carrier Assembly.</p>					
				<p>M16A3, M16A4, M4, and M4A1 Only</p> <p>1. Inspect Back-Up Iron Sight (BUIS) (Figure 10, Item 1) and mounting surface of upper receiver (Figure 10, Item 2) for damage. If BUIS is missing or cannot be correctly mounted, repair (WP 0010).</p>	<p>BUIS is missing or damaged or cannot be securely mounted.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

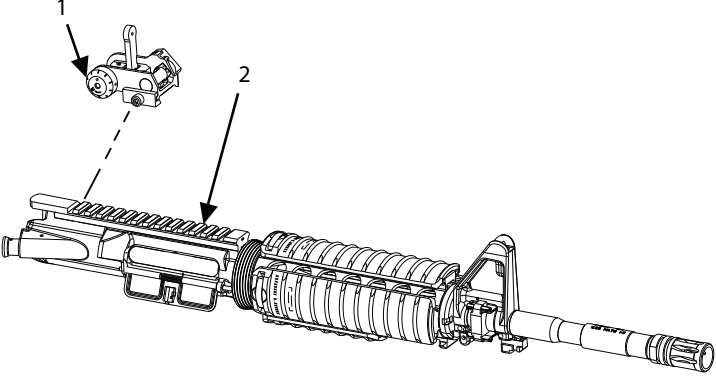
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			 <p style="text-align: right; margin-right: 50px;">M16000299</p>	<p style="text-align: center;">Figure 10. Back-Up Iron Sight (BUIS).</p> <p style="text-align: center;">CAUTION</p> <ul style="list-style-type: none"> • Do not use a wire brush to roughen surfaces. • If SFL comes in contact with moving parts or functioning surfaces of the weapon, remove lubricant immediately by washing with dry cleaning solvent. <p style="text-align: center;">NOTE</p> <ul style="list-style-type: none"> • Shiny metal exterior surfaces of the rifle should be re-coated with SFL (WP 0048, Table 1, Item 29). Clean surface with dry cleaning solvent (WP 0048, Table 1, Item 48). Dry, roughen with abrasive cloth (WP 0048, Table 1, Item 18), and apply SFL. • Painting is authorized. • AIR FORCE ONLY: Painting is not authorized. Refer to AFI 36-2654. 	

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.


ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<ul style="list-style-type: none"> • NAVY ONLY: Refer to NAVSEA Instruction 8370.2 Small arms and weapons management policy and guidance. <ol style="list-style-type: none"> 1. Inspect finish of upper receiver for scratches or worn shiny spots. <p style="text-align: center;">WARNING</p> <div style="text-align: center;">  </div> <p style="text-align: center;">DRY CLEANING SOLVENT</p> <p style="text-align: center;">SOLID FILM LUBRICANT</p> <ol style="list-style-type: none"> 2. If scratched or worn shiny in spots, disassemble and remove all lubricant from surface with dry cleaning solvent (WP 0048, Table 1, Item 38). 3. Wear gloves (WP 0048, Table 1, Item 18) and use a wash pan (WP 0048, Table 1, Item 28) to apply solvent. Let parts dry thoroughly. 4. Roughen the surface using abrasive cloth (WP 0048, Table 1, Item 19) and apply SFL (WP 0048, Table 1, Item 22). Allow 16-24 hours to dry before handling. 	
5	Quarterly		Key and Bolt Carrier Assembly and Bolt Assembly	<ol style="list-style-type: none"> 1. Remove and disassemble bolt carrier assembly (WP 0011). 2. Visually inspect bolt assembly (Figure 11, Item 7) for cracks, especially in the area of the bolt cam pin hole (Figure 11, Item 3). 3. Check for cracks on locking lugs (Figure 11, Item 6), for a cluster of pits or chipped bolt face (Figure 11, Item 5), and for an elongated firing pin hole (Figure 11, Item 4). 4. Check for worn (WP 0011) or missing bolt rings (Figure 11, Item 8). 5. Check for proper staggering of bolt rings (WP 0012). 	<p>Bolt assembly is cracked.</p> <p>Cracks, pits, or chips are found. Firing pin hole is elongated.</p> <p>Bolt rings are missing or damaged.</p> <p>Bolt rings are not properly staggered.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>6. Insert bolt assembly into key and bolt carrier assembly (Figure 11, Item 9).</p> <p>7. Turn key and bolt carrier assembly so bolt assembly points down. Bolt assembly must not drop out (WP 0011).</p> <p>8. Remove bolt assembly (TM 9-1005-319-10).</p> <p>9. Check for broken or missing firing pin retaining pin (Figure 11, Item 1) and bolt cam pin (Figure 11, Item 2).</p>	<p>Bolt assembly drops out of key and bolt carrier assembly due to its own weight.</p> <p>Firing pin retaining pin or bolt cam pin is missing or broken.</p>
<p>Figure 11. Bolt and Bolt Carrier Assembly.</p>					
				<p>10. Check cartridge extractor (Figure 12, Item 2), extractor spring assembly (Figure 12, Item 3), cartridge ejector (Figure 12, Item 5), and ejector spring (Figure 12, Item 4) for dirt and serviceability. Clean, lubricate, or replace as necessary (WP 0012).</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">If carrier key is dented, see (WP 0011) for repair.</p> <p>11. Check key and bolt carrier assembly (Figure 12, Item 1) and carrier key (Figure 12, Item 8) for damage and looseness.</p>	<p>Parts are missing or unserviceable.</p> <p>Key and bolt carrier assembly or carrier key is damaged, or carrier key is loose.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

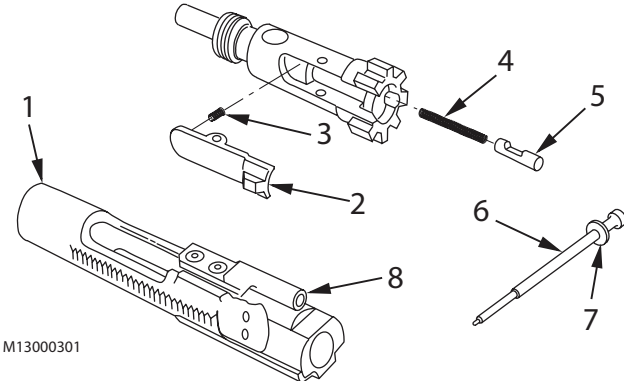
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>12. Check firing pin (Figure 12, Item 6) for chips or breaks. Pits or wear in area of flange (Figure 12, Item 7) is permissible.</p>  <p>M13000301</p>	<p>Firing pin is chipped or broken.</p>
6	Quarterly		Lower Receiver and Buttstock Assembly	<ol style="list-style-type: none"> 1. Remove buffer assembly (Figure 13, Item 2) and action spring (Figure 13, Item 1). 2. Check buffer assembly for cracks. 3. Check action spring for kinks and free length. Free length for rifle should be 13 1/2 inches (34.29 cm) maximum. Free length for carbine should be 11 1/4 inches (28.58 cm) maximum. Do not attempt to adjust spring length. 	<p>Buffer assembly is cracked.</p> <p>Action spring is kinked or does not meet free length requirements.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

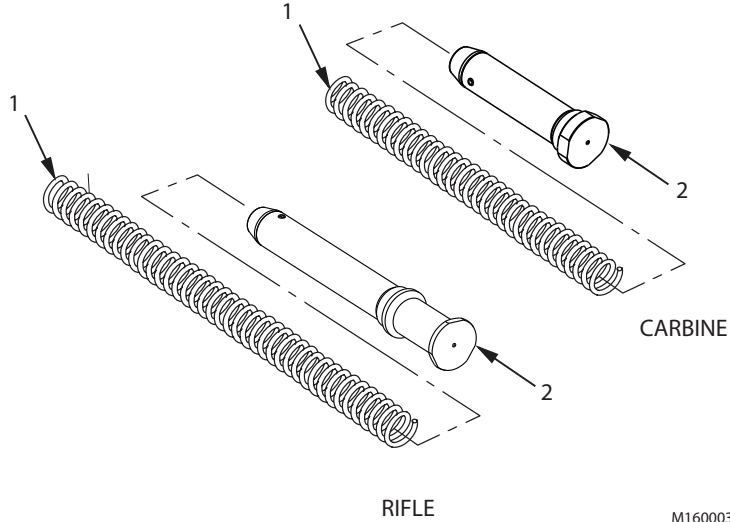
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p style="text-align: center;">RIFLE M16000302</p>					
				<p>4. Remove pistol grip screw (Figure 14, Item 4), lock washer (Figure 14, Item 5), pistol grip (Figure 14, Item 6), helical spring (Figure 14, Item 7), safety detent (Figure 14, Item 8), pivot pin (Figure 14, Item 3) (WP 0021), pivot pin detent (Figure 14, Item 1), and helical spring (Figure 14, Item 2). Discard lock washer.</p> <p>5. Clean and lubricate metal components.</p> <p>6. Clean and lubricate pivot pin holes and spring/detent holes.</p> <p>7. Replace defective or damaged components as necessary (WP 0021). Install new lock washer.</p>	Components are defective or damaged.

Figure 13. Buffer and Action Spring.

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>Figure 14. Disassembly of Lower Receiver.</p> <p>Rifle Only</p> <ol style="list-style-type: none"> 1. Clean and lubricate takedown pin (Figure 15, Item 1). Disengage takedown pin and pull out; push back in to reengage takedown pin (an audible click should be heard). If an audible click is not heard, repair. Takedown pin is a captured pin and should not be able to be removed from receiver if buttstock assembly is not disassembled. 2. Lubricate helical compression spring (Figure 15, Item 3) and takedown pin detent (Figure 15, Item 2) by placing one drop of lubricant on takedown pin detent and lowering buttstock assembly (Figure 15, Item 4) to vertical position. Allow lubricant to work its way around the helical 	<p>Components are defective or damaged. Takedown pin is loose or removable from receiver.</p>

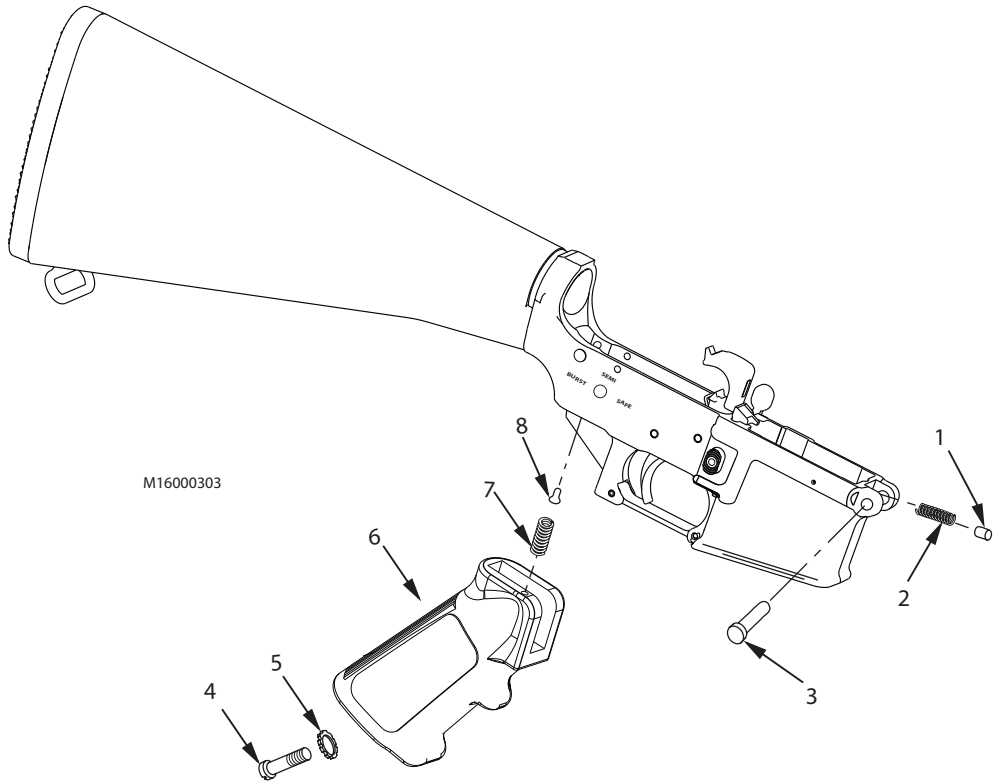


Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

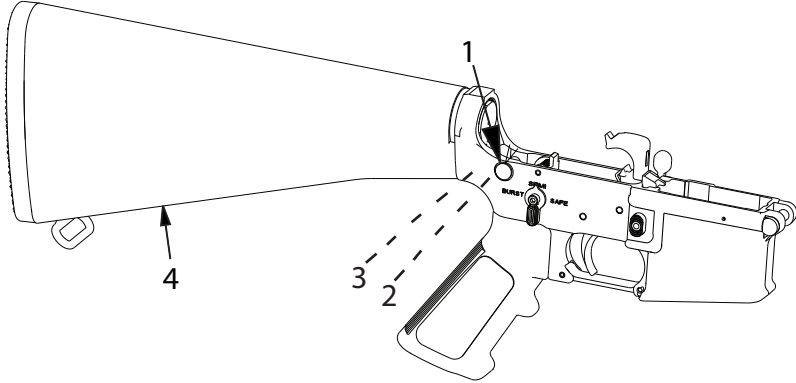
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>compression spring and takedown pin detent.</p> <p>3. Check components of buttstock assembly for damage.</p>	<p>Buttstock and/or components are damaged.</p>
 <p>M16000304</p>					
<p>Figure 15. Lower Receiver and Buttstock Assembly.</p>					
				<p>4. Cracks in the critical area at the front end of buttstock (Figure 16, Item 1) are not acceptable.</p> <p>5. Hairline cracks (no chipped away material allowed) originating from the buttplate end of the buttstock are acceptable under the following conditions:</p> <ul style="list-style-type: none"> a. One hairline crack, not to exceed 1 in. (2.54 cm) in length, per side of buttstock. b. Two additional hairline cracks up to 0.25 in. (0.64 cm) in length, per side of buttstock. c. A total of three cracks per side of buttstock, originating from buttplate end, is allowable. 	<p>Buttstock is cracked in critical area or does not meet crack criteria.</p> <p>Buttstock cracks exceed criteria listed.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

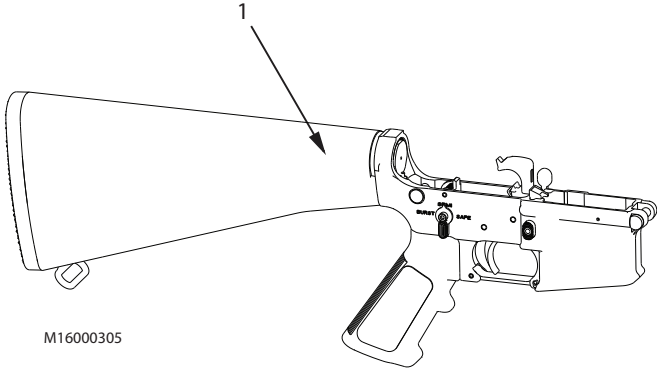
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			 <p>M16000305</p>	<p>Figure 16. Lower Receiver and Buttstock Assembly.</p> <p style="text-align: center;">NOTE</p> <p>A small amount of side-to-side, up-and-down, or rotational movement of buttstock assembly is acceptable.</p> <p>6. Check buttstock assembly (Figure 17, Item 1) for forward to rear movement and/or a 1/32 in. (0.079 cm) gap between buttstock assembly and lower receiver (Figure 17, Item 2). If forward to rear movement is present and/or a 1/32 in. (0.079 cm) gap appears, tighten machine screw (Figure 17, Item 5). If still not tight, remove buttstock assembly and check for loose receiver extension (Figure 17, Item 3). If receiver extension is loose, repair (WP 0025). If not loose, replace buttplate (Figure 17, Item 4) using new machine screw.</p> <p>7. Check buttplate for cracks or damage.</p> <p style="padding-left: 20px;">a. Cracks are visible around the buttplate mounting hole while screws are mounted. Cracks are visible around mounting holes when installed on rifle.</p> <p style="padding-left: 20px;">b. Cracks or separations around door assembly are visible when the door assembly is closed. Cracks are visible when door assembly is closed.</p>	<p>Lower receiver extension cannot be tightened.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

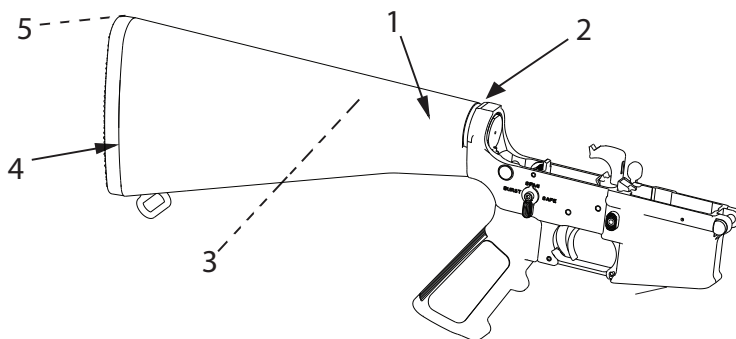
ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p>c. If buttplate is cracked in excess of 0.25 in. (0.64 cm) in length and extends through buttplate, replace.</p> <p>d. Buttplate should not be removed except for replacement of parts at which time a new machine screw must be used.</p>	<p>Buttplate is cracked or damaged.</p>
 <p>M16000306</p>					
				<p>Carbine Only</p> <p>1. Extend buttstock assembly (Figure 18, Item 1). Grasp lock release lever (Figure 18, Item 1). Grasp lock release lever (Figure 18, Item 3) in area of retaining nut (Figure 18, Item 2), pull downward, and slide buttstock assembly to rear to separate buttstock assembly from lower receiver extension (Figure 18, Item 7).</p> <p>2. Clean and lubricate takedown pin (Figure 18, Item 6). Lubricate helical compression spring (Figure 18, Item 4) and takedown pin detent (Figure 18, Item 5) by placing one drop of lubricant on takedown pin detent. Allow lubricant to work its way around the helical compression spring and takedown pin detent.</p> <p>3. Check lock release lever for free movement.</p>	<p>Lock release lever is cracked, does not move freely, or is dented or damaged enough to interfere with functioning.</p>

Figure 17. Lower Receiver and Buttstock Assembly.

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				4. Check for cracks, dents, and damage to buttstock assembly. 5. Hand check lower receiver extension for looseness and corrosion. If loose, repair. 6. Grasp lock release lever in area of retaining nut and pull to install buttstock assembly onto lower receiver extension.	Buttstock assembly is damaged. Lower receiver extension is loose.
				7. Function check magazine catch (Figure 19, Item 1) and bolt catch (Figure 19, Item 2).	Magazine catch or bolt catch is defective.

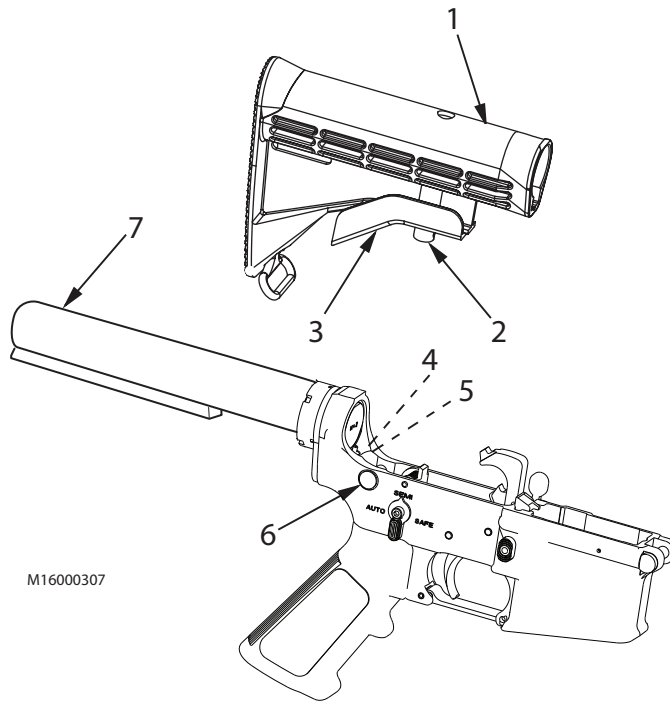
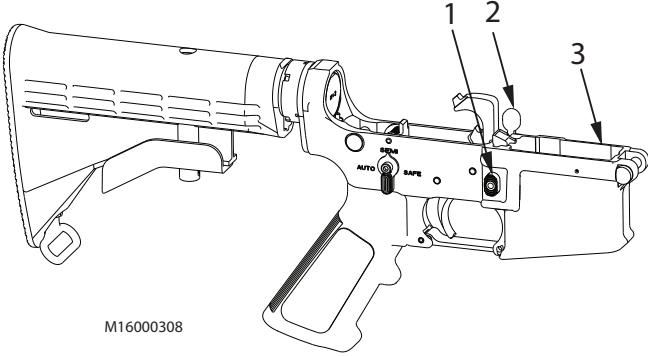


Figure 18. Carbine Lower Receiver and Buttstock Assembly.

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
				<p style="text-align: center;">NOTE</p> <ul style="list-style-type: none"> • If a weapon's lower receiver 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 (SH). This SH requires action to obtain a replacement weapon. Evacuate weapon to depot for overhaul. Request a replacement weapon. • AIR FORCE ONLY: Units will have to contact AF item manager for disposition instructions prior to shipment or weapon to depot or requesting replacement weapon. • NAVY ONLY: Refer to NAVSEA instruction 8370.2 small arms and weapons management policy and guidance, and maintenance requirements cards. <p>8. Check finish of lower receiver (Figure 19, Item 3) for scratches and worn shiny spots. If scratched or worn shiny in spots, repair in the same manner as stated for upper receiver.</p>	<p>Receiver has shiny, light reflecting surfaces or is missing more than 1/3 overall finish.</p>

Table 1. Preventive Maintenance Checks and Services for M16 Series Rifles and M4 Series Carbines - Continued.

ITEM NO.	INTERVAL	MAN HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 19. Lower Receiver and Buttstock Assembly.</p>					
7	Quarterly		Annual Safety and Serviceability Inspection and Gauging	Check documentation to ensure annual safety and serviceability inspection and gauging has been done and that the next gauging and inspection is scheduled.	Annual gauging has not been performed.
8	Annual		Gauging	M16 series Rifles and M4 series Carbines must be inspected and gauged at least once annually for safety and serviceability (WP 0026).	Annual gauging has not been performed.

PMCS Mandatory Replacement Parts List

Table 2. Mandatory Replacement Parts List.

ITEM NO.	PART NUMBER/ (CAGEC)	NATIONAL STOCK NUMBER (NSN)	NOMENCLATURE	QTY
1	MS 35335-61 (96906)	5310-00-527-3634	WASHER, LOCK, RIFLE GRIP	1

END OF WORK PACKAGE

CHAPTER 4

MAINTENANCE INFORMATION M16 SERIES RIFLES AND M4 SERIES CARBINES

**MAINTAINER MAINTENANCE
SERVICE UPON RECEIPT**

INITIAL SETUP:**Personnel Required**

SMALL ARMS/ARTILLERY REPAIRER 91F

ReferencesAFI 21-101
AFJMAN 23-215**References (cont.)**DA PAM 25-30
DA PAM 750-8
PQDR DD 361
TM 9-1005-319-10
TO 00-35D-54

GENERAL

When a new or reconditioned weapon is first received, it is the responsibility of the officer-in-charge to determine whether the weapon has been properly prepared for service by supplying organization and whether it is in proper condition to perform its mission.

WARNING

Before starting an inspection, be sure to clear the weapon. Do not pull the trigger until the weapon has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. Failure to comply may result in death or injury to personnel.

Remove the weapon and basic issue items from containers. Check for any missing items. Refer to TM 9-1005-319-10.

CHECKING UNPACKED EQUIPMENT

Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on Product Quality Deficiency Report (PQDR) DD 361, Transportation Discrepancy Report. Air Force users will submit a Supply Discrepancy Report (SDR) in accordance with the guidance in AFI 21-101 Material Management.

Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with applicable service instructions (e.g., for Army instructions, see DA PAM 750-8).

Air Force users submit PQDR in accordance with Technical Order (TO) 00-35D-54, Materiel Deficiency Reporting and Investigating System, located at site <https://spires.wpafb.af.mil/sindex.cfm>, and with Air Force Joint Manual (AFJMAN) 23-215, Reporting of Supply Discrepancies.

Navy users shall report damaged equipment via PQDR at <https://awis.navair.navy.mil/AWIS/index.asp> using the Deficiency Report System (DRWEB) application.

Check to see whether the equipment has been modified. Refer to DA PAM 25-30.

PROCESSING UNPACKED EQUIPMENT

If volatile corrosion inhibitor (VCI) is in barrel, remove and discard. Field strip weapon and inspect for missing, damaged, and rusted or corroded parts. Clean and lubricate. Assemble weapon and perform function check. Refer to TM 9-1005-319-10. Check the magazine for positive retention and functioning of bolt catch.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
CLEARING WEAPON**

INITIAL SETUP:

Not Applicable

WARNING

- The weapon **MUST** be cleared to be considered safe before disassembling, cleaning, inspecting, transporting, or storing.
 - Ensure weapon is always pointed in a safe direction.
 - Failure to comply with above warnings may result in injury or death to personnel. Seek medical attention if injury occurs.
1. Point weapon in a safe direction.

NOTE

If weapon is not cocked, selector lever cannot be rotated to SAFE.

2. Place selector lever (Figure 1, Item 1) on SAFE.

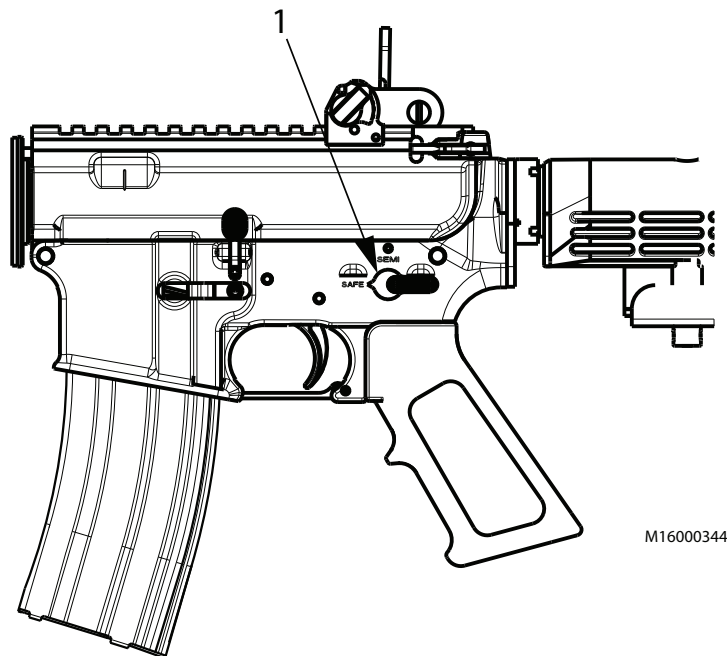


Figure 1. Weapon on SAFE.

3. Remove magazine from weapon.
 - a. Depress magazine catch button (Figure 2, Item 1).
 - b. Pull magazine (Figure 2, Item 2) from weapon.

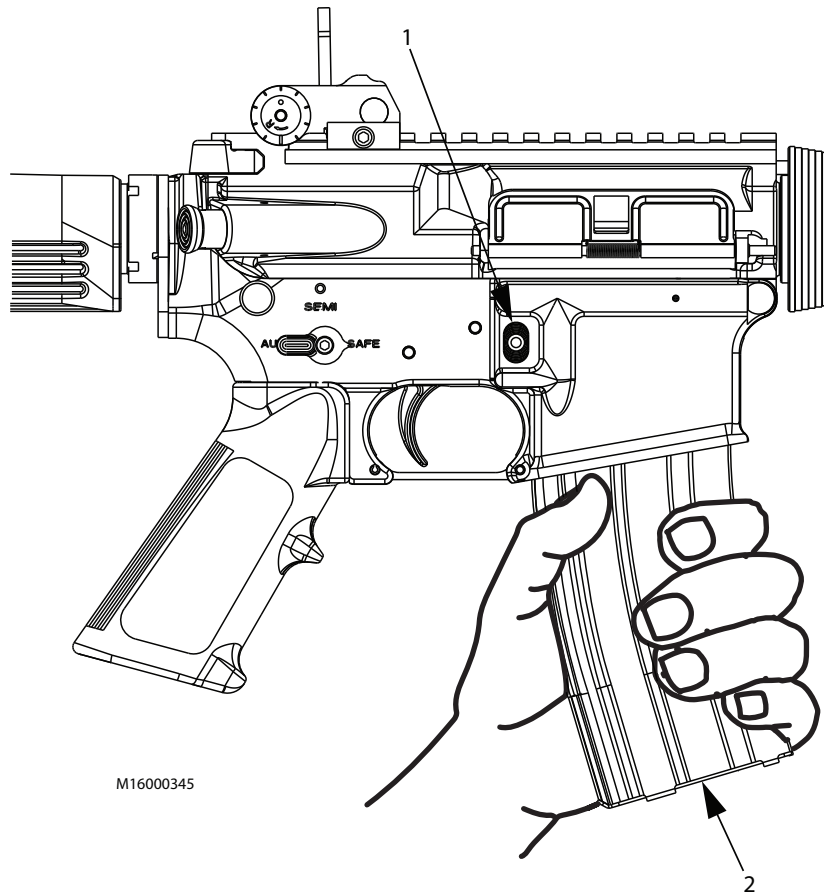


Figure 2. Remove Magazine.

4. Lock bolt open.
 - a. Pull the charging handle (Figure 3, Item 1) to the rear.
 - b. Press and hold the bottom of the bolt catch (Figure 3, Item 3).
 - c. Allow the bolt to move forward until it engages the bolt catch.
 - d. Return the charging handle to the forward position.
 - e. Ensure the selector lever (Figure 3, Item 2) is on SAFE.

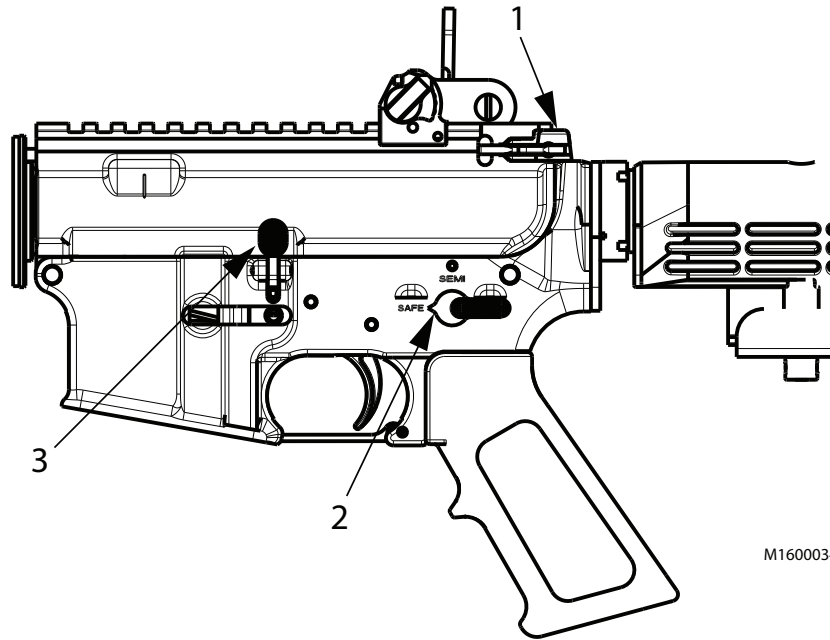


Figure 3. Lock Bolt Open.

5. Visually inspect the chamber (Figure 4, Item 1) to ensure it contains no ammunition.
6. Press the upper portion of the bolt catch, allowing the bolt to move forward.
7. Close the ejection port cover (Figure 4, Item 2).

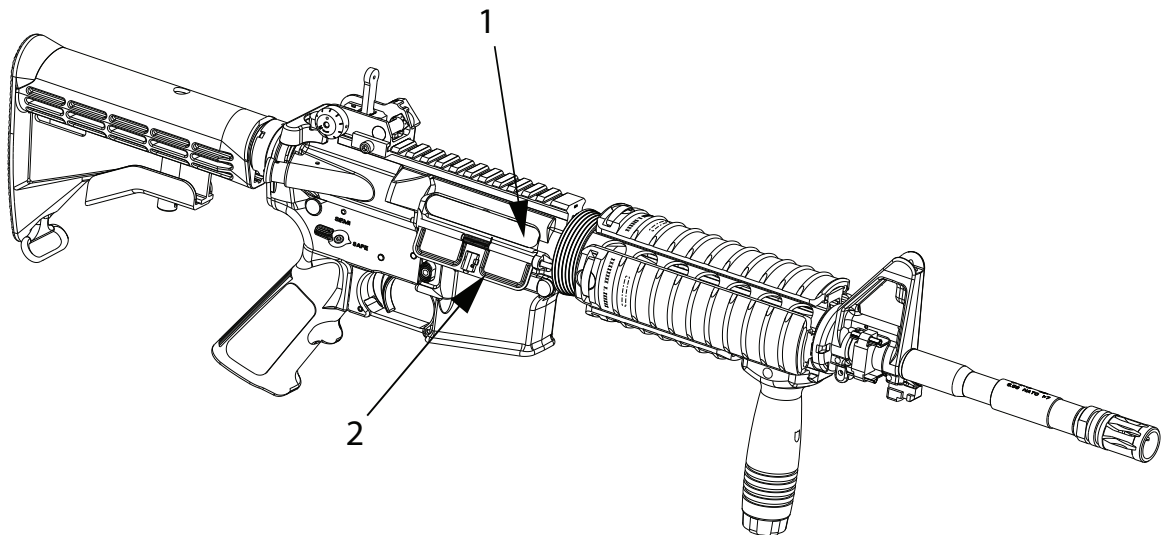


Figure 4. Inspect Chamber.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
BACK-UP IRON SIGHT (BUIS) ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Pliers, retaining ring (WP 0049, Table 1, Item 19)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Materials/Parts

Cleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 12)
Recoil screw (WP 0050, Table 1, Item 7) Qty: 1
Small arms cleaning brush (WP 0048,
Table 1, Item 8) Qty: 1
External retaining ring (WP 0050, Table 1, Item
10)

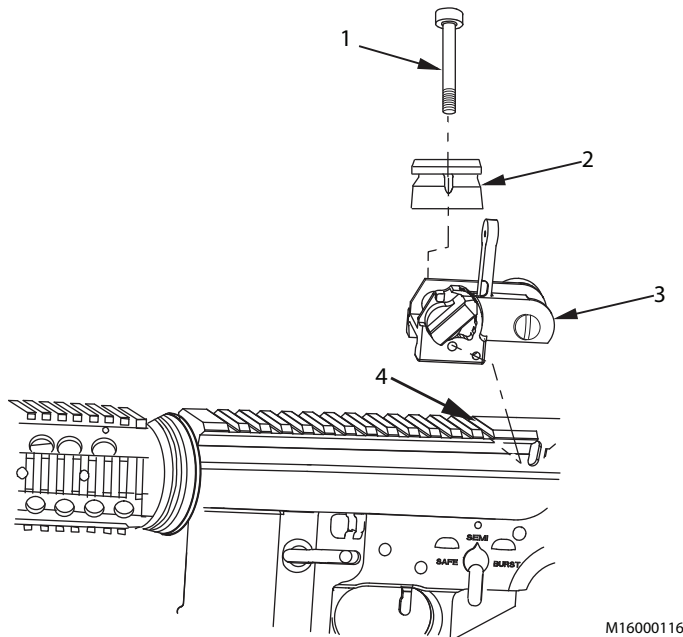
Equipment Condition

Weapon cleared (WP 0009)

REMOVAL**NOTE**

This work package is for the following weapon systems: M16A3, M16A4, M4, and M4A1.

Remove recoil screw (Figure 1, Item 1), locking bar (Figure 1, Item 2), and BUIS (Figure 1, Item 3) from upper receiver (Figure 1, Item 4). Discard recoil screw.



M16000116

Figure 1. Removal of BUIS.

END OF TASK**DISASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Drive out spring pin (Figure 2, Item 1).
2. Remove windage knob (Figure 2, Item 2), index spring (Figure 2, Item 3), and ball bearing (Figure 2, Item 4).
3. Remove windage screw (Figure 2, Item 5) from sight base (Figure 2, Item 13).
4. Remove frame assembly (with aperture sight) (Figure 2, Item 6) and carefully remove compression spring (Figure 2, Item 8) and plunger (Figure 2, Item 9) from point beneath frame assembly.
5. Remove external retaining ring (Figure 2, Item 12) and slide out sight cam (Figure 2, Item 7) from sight base (Figure 2, Item 13). Use care to retain parts when removing ball bearing (Figure 2, Item 11) and index spring (Figure 2, Item 10) underneath sight cam. Discard retaining ring.

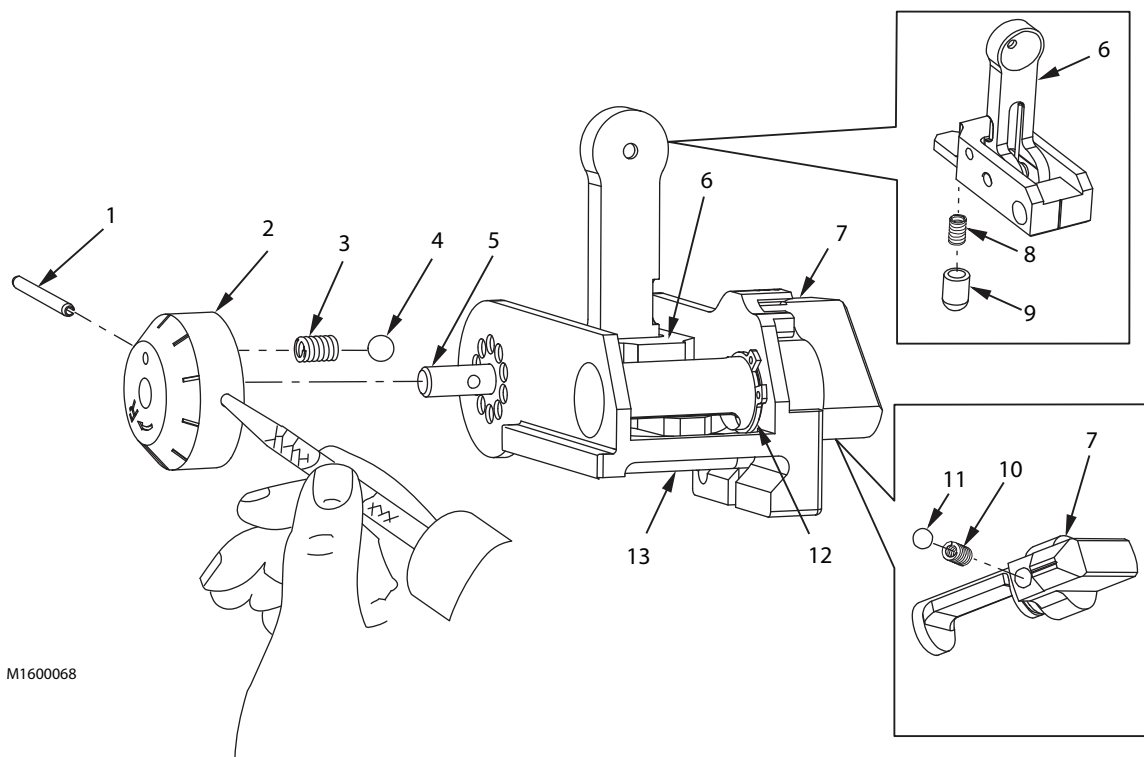
DISASSEMBLY - Continued

Figure 2. Disassembly of BUIS.

END OF TASK**INSPECTION**

1. Check sight parts for serviceability. Visually inspect sight base for cracks, corrosion, or damage. Check for legibility of markings. Detent indexing surfaces should be well formed.
2. Visually inspect frame assembly for cracks, corrosion, or damage. Sight aperture should be round. Flip-up sight arm must lock down.
3. Check sight cam for function, corrosion, or damage.
4. Visually check locking bar for damage.

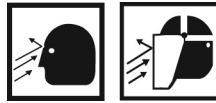
END OF TASK**CLEANING**

Remove all dirt, debris, and corrosion from components.

END OF TASK

REPLACE

Replace all damaged parts.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Install sight cam (Figure 3, Item 7) into sight base (Figure 3, Item 13). Push ball bearing (Figure 3, Item 11) and index spring (Figure 3, Item 10) into hole in sight cam and slide sight cam all the way into sight base. Fasten in place with new external retaining ring (Figure 3, Item 12).

NOTE

It may be easier to rotate sight cam to the 200-meter mark to slide frame assembly into position and then rotate to the 600-meter mark to hold frame assembly while inserting windage screw.

2. Install compression spring (Figure 3, Item 8) and plunger (Figure 3, Item 9) into frame assembly (Figure 3, Item 6). Install frame assembly into sight base (Figure 3, Item 13).
3. Install windage screw (Figure 3, Item 5) into sight base (Figure 3, Item 13).
4. Install index spring (Figure 3, Item 3) and ball bearing (Figure 3, Item 4) into hole in windage knob (Figure 3, Item 2). Align hole in windage knob with hole in windage screw (Figure 3, Item 5) and fasten in place with spring pin (Figure 3, Item 1).

ASSEMBLY - Continued

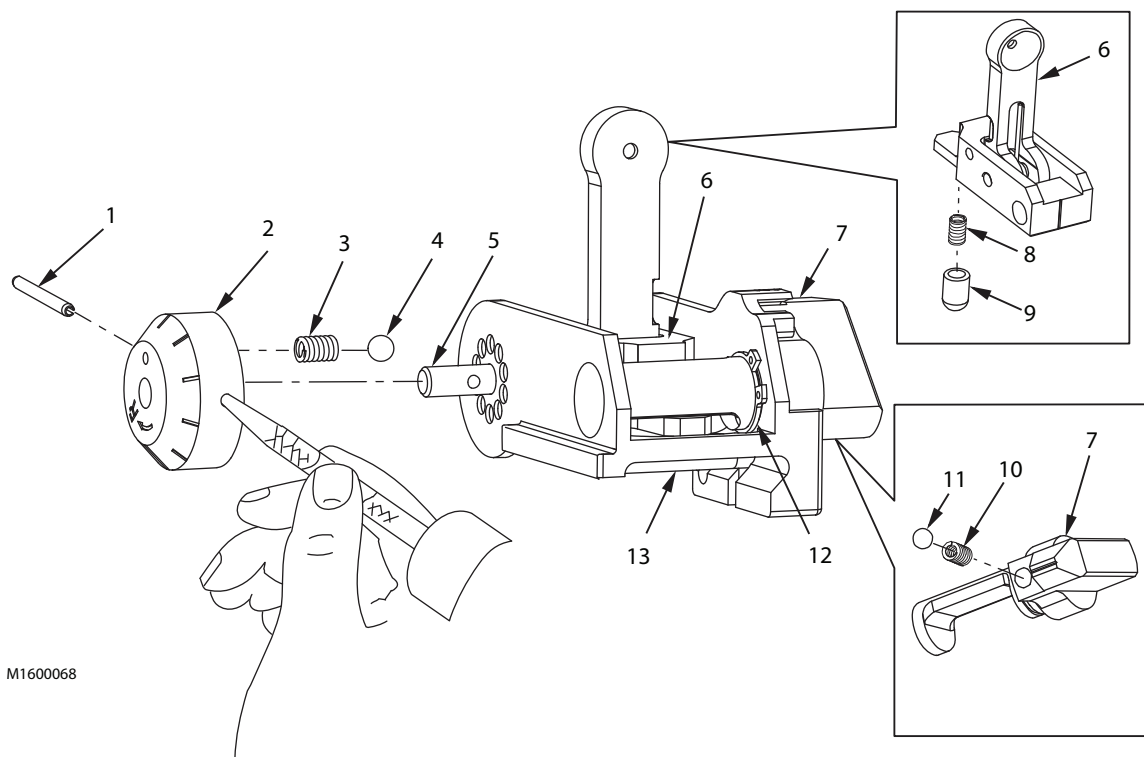


Figure 3. Assembly of BUIS.

END OF TASK

LUBRICATION

1. Lubricate BUIS with overall light coat of CLP (WP 0048, Table 1, Item 12).
2. Rotate sight cam to 600-meter mark. Apply 2 or 3 drops of CLP to index spring and ball bearing through hole in bottom of sight cam.
3. Apply 2 or 3 drops of CLP to plunger and compression spring beneath flip-up aperture sight.
4. Apply 2 or 3 drops of CLP to index spring and ball bearing through hole in side of windage knob.
5. Apply light coat of CLP to threads of windage screw. Turn screw side-to-side before returning to original zeroing mark.

END OF TASK

INSTALLATION

1. Install locking bar (Figure 4, Item 2) and new recoil screw (Figure 4, Item 1) into BUIS (Figure 4, Item 3).

NOTE

The BUIS must be mounted in the rear most slot on the upper receiver for the range adjustments and the zeroing to be correct.

2. Align recoil screw in rear most slot of upper receiver (Figure 4, Item 4) with range scale of BUIS (Figure 4, Item 3) facing rearward using locking bar (Figure 4, Item 2) and recoil screw (Figure 4, Item 1). Make sure BUIS is flat on receiver rail with angled edge under upper receiver rail and tighten in place.

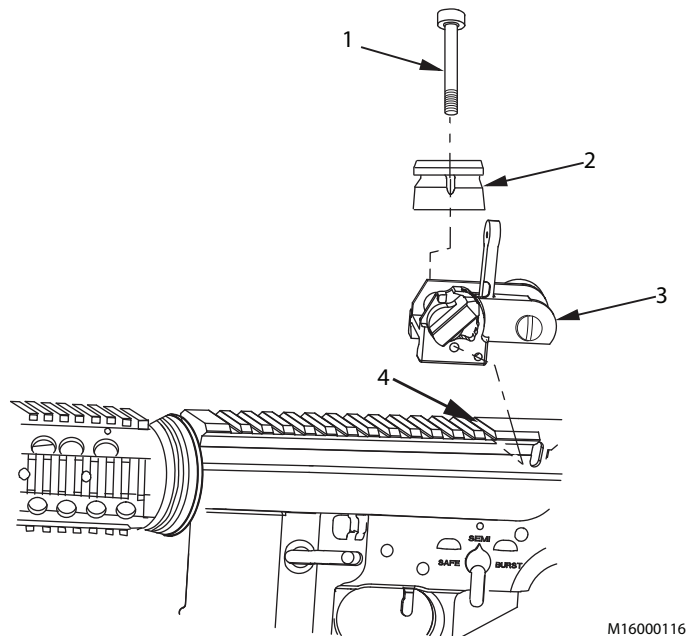


Figure 4. Installation of BUIS.

END OF TASK

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
BOLT AND BOLT CARRIER ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Bolt Carrier Key Tool (WP 0049, Table 1, Item 16)

Equipment Condition

Weapon cleared (WP 0009)
Bolt and bolt carrier assembly removed (TM
9-1005-319-10)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

References

WP 0012
WP 0013

DISASSEMBLY**CAUTION**

To prevent damage to pin, do not spread or close legs of firing pin retaining pin.

1. Remove firing pin retaining pin (Figure 1, Item 2) from key and bolt carrier assembly (Figure 1, Item 8).
2. Tip key and bolt carrier assembly (Figure 1, Item 8) and catch firing pin (Figure 1, Item 1) as it drops out of key and bolt carrier assembly.

NOTE

Bolt should be pushed in towards the rear of the carrier to allow cam pin to be removed.

3. Rotate bolt cam pin (Figure 1, Item 3) one quarter turn and lift straight up to remove from key and bolt carrier assembly (Figure 1, Item 8).
4. Remove bolt assembly (Figure 1, Item 6) from key and bolt carrier assembly (Figure 1, Item 8).

END OF TASK**INSPECTION****NOTE**

- There are bolts and bolt carriers on fielded rifles, some with chrome-plated exterior surface finishes and some with phosphate coating. Both finishes are acceptable under certain operational requirements and/or restrictions. Phosphate-coated bolt carriers are required for divisional combat units. Chrome-plated bolt carriers are acceptable for divisional non-combat units and training center units. Chrome-plated and phosphate-coated bolt assemblies, bolt carrier assemblies, and repair parts for these assemblies may be intermixed in any combination with the following exception.
- Phosphate-coated bolt carriers are required for all deployable and deploying units.
- AIR FORCE ONLY: Use of chrome-plated or phosphate-coated bolts and bolt carriers are acceptable for ALL Air Force missions and are deployable. Use of bolt carrier without forward assist serration is acceptable for ALL Air Force mission requirements.

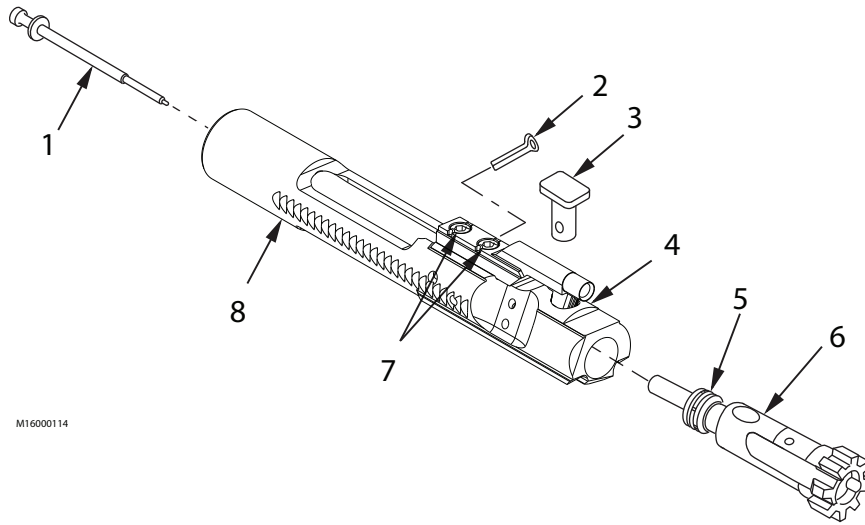
1. Inspect bolt assembly (Figure 1, Item 6) to verify that gaps in bolt rings (Figure 1, Item 5) are staggered and approximately 1/3 turn apart.
2. Inspect firing pin retaining pin (Figure 1, Item 2) and bolt cam pin (Figure 1, Item 3) for cracks, damage, or excessive wear.
3. Inspect carrier key (Figure 1, Item 4) and bolt carrier assembly (Figure 1, Item 8) for burrs, cracks, wear, and evidence of gas loss.
4. Inspect carrier key (Figure 1, Item 4) for dents, distortion, or looseness. If dented, repair; if loose, replace (WP 0013).

NOTE

If staking marks do not indicate loosening of screws, do not attempt to re-torque.

5. Visually inspect carrier key screws (Figure 1, Item 7) for looseness and proper staking.

INSPECTION - Continued

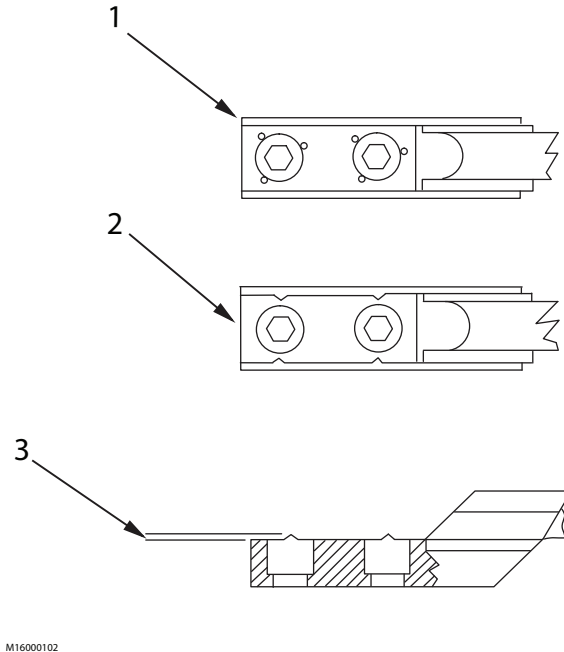


M16000114

Figure 1. Bolt and Bolt Carrier Assembly.

INSPECTION - Continued

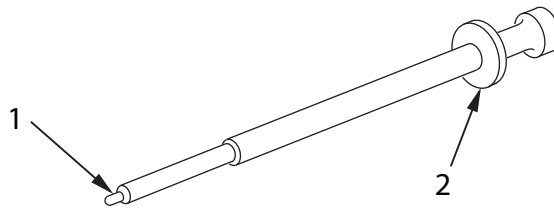
6. Field staking method (Figure 2, Item 1) must not indicate distortion or damage which impairs parallelism. A maximum of 0.025 in. (0.064 cm) protrusion (Figure 2, Item 3) in an upward direction is permissible. Staking in four places on either side of screws (Figure 2, Item 2) is authorized.



M16000102

Figure 2. Staking Methods.

7. Inspect tip of firing pin (Figure 3, Item 1) for proper contour. Inspect for pitting, wear, and burrs. Pitting or wear in flat area (Figure 3, Item 2) is permissible.



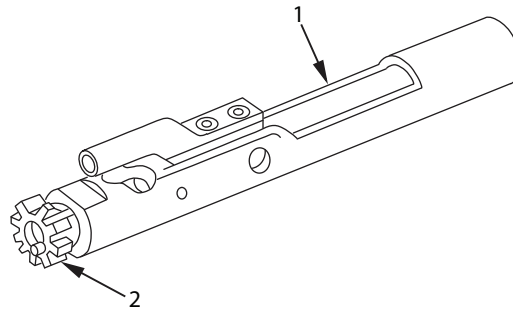
M16000328

Figure 3. Inspection of Firing Pin.

END OF TASK**TEST**

1. Insert bolt assembly (Figure 4, Item 2) into key and bolt carrier assembly (Figure 4, Item 1) and exercise key and bolt assembly. Check for binding.

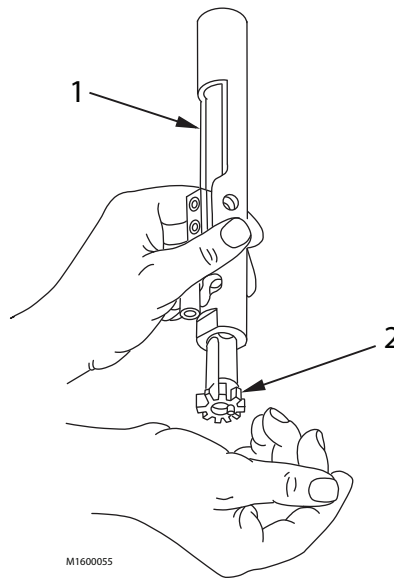
TEST - Continued



M1600054

Figure 4. Checking for Binding of Bolt Assembly.

2. Check bolt assembly (Figure 5, Item 2) for proper fit with bolt cam pin removed. Turn key and bolt carrier assembly (Figure 5, Item 1) and suspend so bolt assembly is pointed down. Bolt assembly must not drop out. If weight of bolt assembly allows it to drop out of key and bolt carrier assembly, replace the bolt rings (WP 0012).
3. Remove bolt assembly (Figure 5, Item 2) from key and bolt carrier assembly (Figure 5, Item 1).



M1600055

Figure 5. Checking for Fit of Bolt Assembly.

END OF TASK

REPAIR**CAUTION**

Extreme care must be exercised during the following procedure to ensure that the striking force is not directed to attaching screws and that the tube portion is not enlarged or flared beyond original requirement. Such enlargement would permit loss of gas pressure when the key and gas tube come together during functioning.

NOTE

This procedure is to repair small dents and/or distortions in carrier key.

1. Place the key and bolt carrier assembly (Figure 6, Item 2) in a vertical position, supported so that contact is made with rear surface of carrier key (Figure 6, Item 3). The edge of work bench is recommended.
2. Insert the small end of key tool (Figure 6, Item 1) into tube portion of carrier key (Figure 6, Item 3).
3. Strike large end of key tool (Figure 6, Item 1) lightly.
4. Repeat (gently) striking until carrier key (Figure 6, Item 3) is reformed to original configuration.
5. If carrier key (Figure 6, Item 3) cannot be reformed to original configuration replace it (WP 0013).

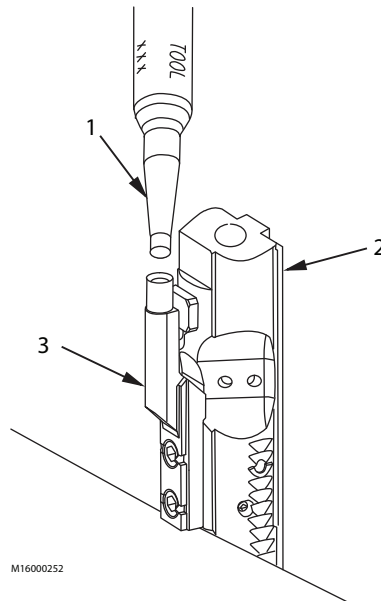


Figure 6. Repairing the Carrier Key.

END OF TASK

REPLACE**WARNING**

If bolt is replaced weapon must be headspaced. Failure to headspace weapon may result in death or injury to personnel.

Replace all unserviceable and defective items. Retest all replaced parts.

END OF TASK**LUBRICATION**

Lubricate all parts.

END OF TASK

ASSEMBLY**WARNING**

Bolt cam pin must be installed or rifle/carbine will blow up while firing the first round. If the bolt cam pin is not installed, death or injury to personnel may result.

1. Install bolt assembly (Figure 7, Item 4) into key and bolt carrier assembly (Figure 7, Item 5).

NOTE

Bolt cam pin should slide in easily. If bolt cam pin will not go in, rotate bolt assembly 180 degrees and try again.

2. Install bolt cam pin (Figure 7, Item 3) into bolt carrier assembly (Figure 7, Item 5). Rotate bolt cam pin one quarter turn to secure bolt assembly (Figure 7, Item 4).
3. Hold key and bolt carrier assembly (Figure 7, Item 5) with bolt assembly (Figure 7, Item 4) down, install firing pin (Figure 7, Item 1) into rear of bolt carrier assembly.
4. Install firing pin retaining pin (Figure 7, Item 2) into bolt carrier assembly (Figure 7, Item 5) from left side only to ensure proper installation. Check installation by attempting to shake out firing pin (Figure 7, Item 1). Firing pin should be secure.

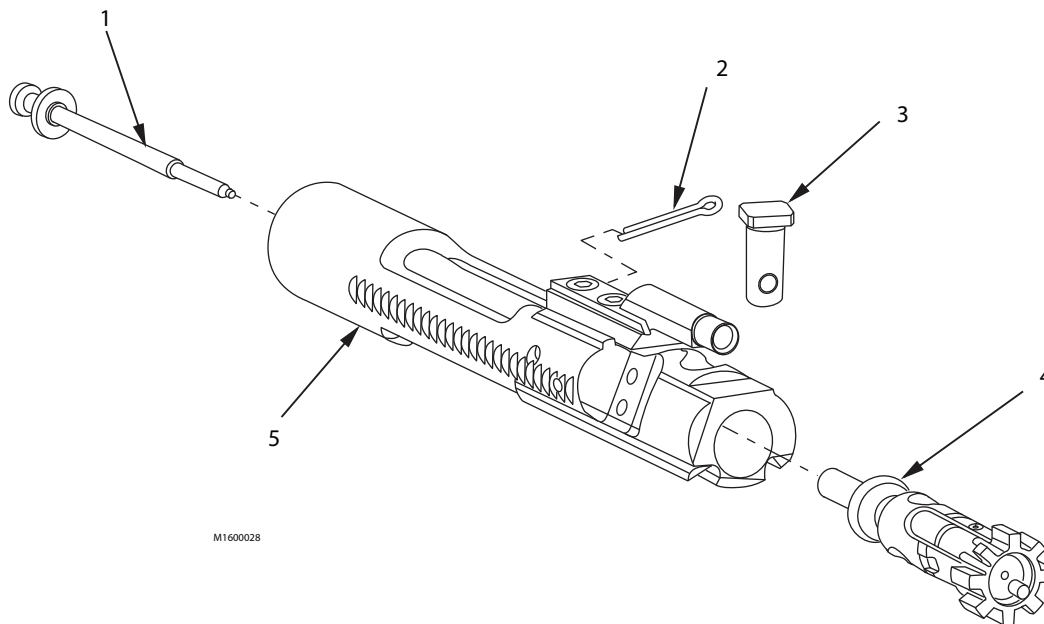


Figure 7. Assembly of Bolt and Bolt Carrier Assembly.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install bolt and bolt carrier assembly (TM 9-1005-319-10).

FOLLOW-ON MAINTENANCE TASKS - Continued

2. Perform function check (TM 9-1005-319-10).

END OF TASK

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
BREECH BOLT ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaw (WP 0049, Table 1, Item 2)
File set, hand (WP 0049, Table 1, Item 6)
Vise, machinist's (WP 0049, Table 1, Item 27)

Materials/Parts

Penetrant kit (WP 0048, Table 1, Item 41) Qty: 1
Wiping rag (WP 0048, Table 1, Item 54) Qty: 1

Personnel Required

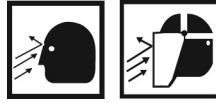
SMALL ARMS/ARTILLERY REPAIRER 91F

References

TM 9-1005-319-10
WP 0010

Equipment Condition

Weapon cleared (WP 0009)
Bolt assembly removed (WP 0011)

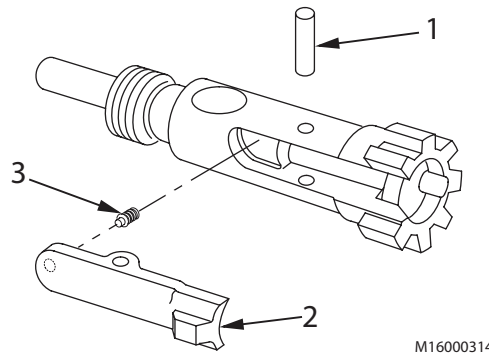
DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Push out extractor pin (Figure 1, Item 1) and remove cartridge extractor (Figure 1, Item 2) and extractor spring assembly (Figure 1, Item 3) as a unit.

NOTE

- Do not separate cartridge extractor and extractor spring assembly unless replacement of either or both is required.
 - Do not remove the rubber insert from the extractor spring assembly.
2. If required, twist extractor spring assembly (Figure 1, Item 3) counterclockwise to remove from cartridge extractor (Figure 1, Item 2).



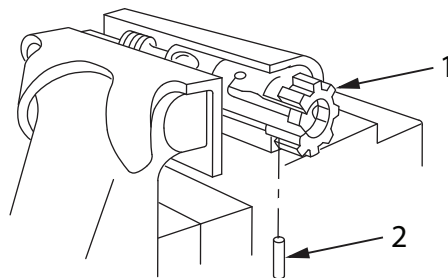
M16000314

Figure 1. Removal of Cartridge Extractor.

CAUTION

Be sure to use vise jaw protective caps.

3. Hold bolt (Figure 2, Item 1) in vise and remove spring pin (Figure 2, Item 2).



M16000201

Figure 2. Removal of Spring Pin.

DISASSEMBLY - Continued

4. Be sure to catch cartridge ejector (Figure 3, Item 2) and ejector spring (Figure 3, Item 1) to prevent loss.

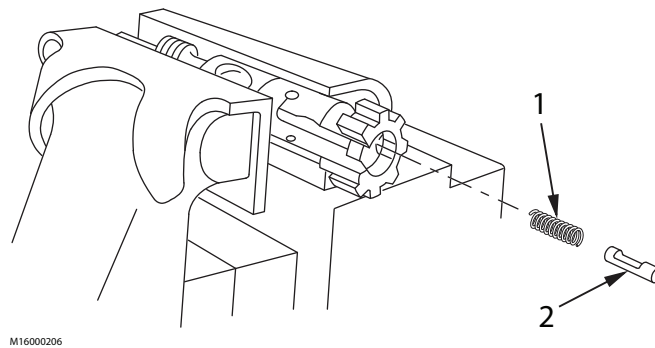


Figure 3. Removal of Cartridge Ejector.

DISASSEMBLY - Continued**NOTE**

Do not remove bolt rings unless they require replacement and three new replacement bolt rings are on hand.

5. Remove three bolt rings (Figure 4, Item 1) from bolt (Figure 4, Item 2).

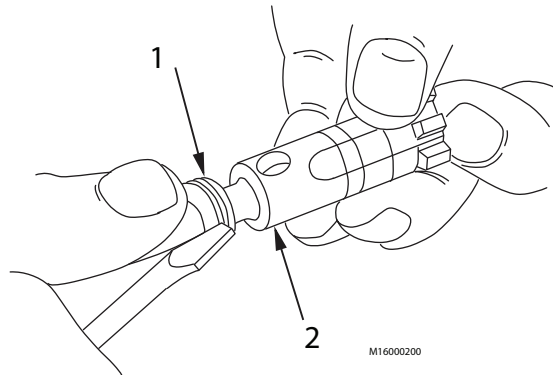


Figure 4. Removal of Bolt Rings.

END OF TASK**INSPECTION**

1. Inspect bolt for pits, burrs, and wear as follows:
 - a. Bolt faces with a cluster of pits which are touching or tightly grouped, covering an area measuring approximately 1/8 in. (0.32 cm) across (Figure 5, Item 1) will be rejected and replaced.
 - b. Bolts which contain individual pits or a scattered pattern (Figure 5, Item 2) will not be rejected.
 - c. Bolts that contain pits extending into the firing pin hole will not be rejected unless firing pin hole gauging check determines excess wear.
 - d. Rings on the bolt face (machine tool marks), grooves, or ridges less than approximately 0.010 in. (0.025 cm) will not be cause for rejection.
 - e. Remove burrs or nicks from bolt lugs using a small stone.

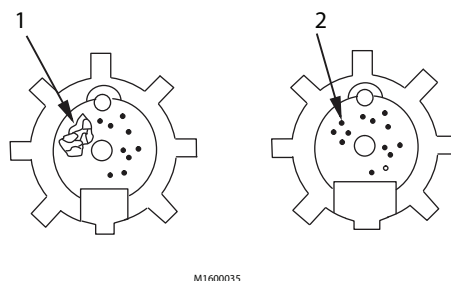


Figure 5. Bolt Face Inspection.

INSPECTION - Continued

2. Inspect bolt (Figure 6, Item 2) for cracks in locking lugs (Figure 6, Item 1) and bolt cam pin hole (Figure 6, Item 3) area. Use black light if available; otherwise, use a glass of no more than 3X power magnification or use a penetrant kit (WP 0048, Table 1, Item 41). Pay close attention to the area where the locking lugs meet the body.

WARNING**DRY CLEANING SOLVENT**

3. Use penetrant kit (WP 0048, Table 1, Item 41) to check for cracks in bolt as follows:
 - a. The area to be inspected must be clean, free of oil, etc. Spray a small amount of remover on the area to be inspected; let dry and wipe off with a wiping rag.
 - b. Spray penetrant (only enough to wet the area) on the area of the bolt to be inspected.
 - c. Spray developer over the penetrant and let the developer work. Cracks will be indicated by a change in color where there is a crack. If there are cracks, the component is unserviceable.
 - d. Pay close attention to the area where the locking lugs meet the body.
 - e. If there are no cracks, spray remover on the area; let dry and wipe off with a wiping rag. Oil the area to prevent corrosion.

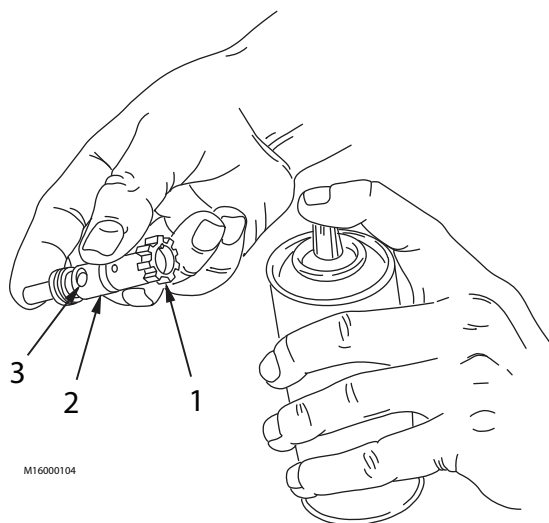
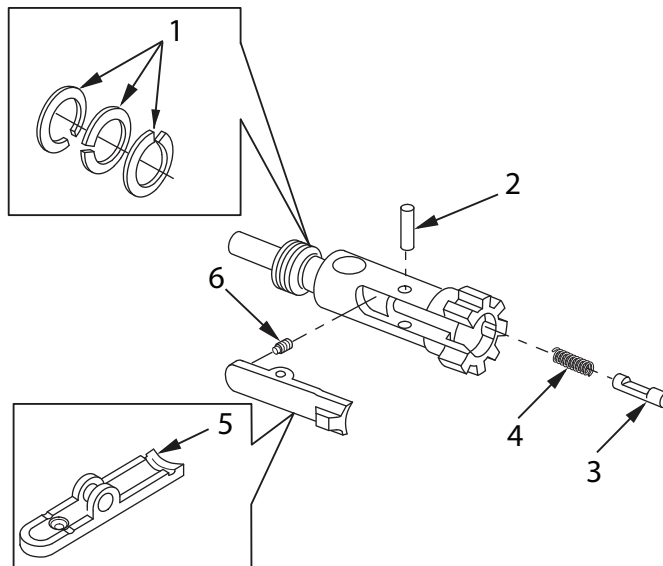


Figure 6. Inspection for Cracks in Bolt Assembly.

INSPECTION - Continued**NOTE**

If one or more are damaged, replace all three bolt rings.

4. Check bolt rings (Figure 7, Item 1) for cracks, kinks, bends, and proper stagger (gaps approximately 1/3 turn apart).
5. Inspect cartridge extractor (Figure 7, Item 5), extractor spring assembly (Figure 7, Item 6), and extractor pin (Figure 7, Item 2) for cracks, breaks, chips, and other damage. Pay close attention to cartridge extractor lip.
6. Inspect cartridge ejector (Figure 7, Item 3) and ejector spring (Figure 7, Item 4) for cracks, breaks, and chips.



M16000108

Figure 7. Inspection of Bolt Assembly Parts.

END OF TASK**CLEANING****CAUTION**

Do not distort extractor spring assembly during cleaning.

Clean all items and remove carbon deposits.

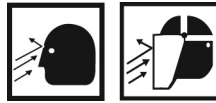
END OF TASK**REPLACE**

Replace all damaged parts.

END OF TASK

LUBRICATION

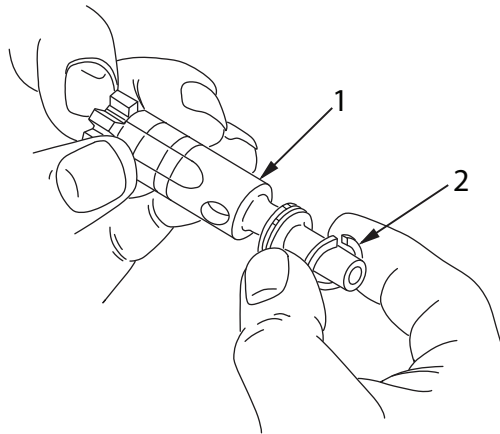
Lightly lubricate all items.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

- To aid installation of a bolt ring, carefully place one end in the bolt ring groove and hold in place with the thumb of one hand. With the index finger of the other hand, gently guide and push the rest of the bolt ring into the groove a little bit at a time until the entire bolt ring is in place.
 - Make certain bolt ring gaps are staggered to prevent loss of gas pressure. New bolt rings will make installing the bolt assembly difficult. Lubricate inside of key and bolt carrier assembly and use gentle pressure when installing.
1. Install three bolt rings (Figure 8, Item 2), one at a time, onto the bolt (Figure 8, Item 1) using care not to bend or "spring" new bolt rings. Stagger the bolt ring gaps (approximately 1/3 turn apart).



M16000119

Figure 8. Installation of Bolt Rings.

ASSEMBLY - Continued**CAUTION**

Be sure to use vise jaw protective caps.

2. Place bolt (Figure 9, Item 1) in a vise and start spring pin (Figure 9, Item 2) in hole.
3. Install ejector spring (Figure 9, Item 3) and cartridge ejector (Figure 9, Item 4). Align groove on cartridge ejector so that spring pin (Figure 9, Item 2) can be installed.
4. Compress and hold ejector spring (Figure 9, Item 3) and cartridge ejector (Figure 9, Item 4) in place.
5. Complete installation of spring pin (Figure 9, Item 2) so that ends are flush with outside of bolt (Figure 9, Item 1).

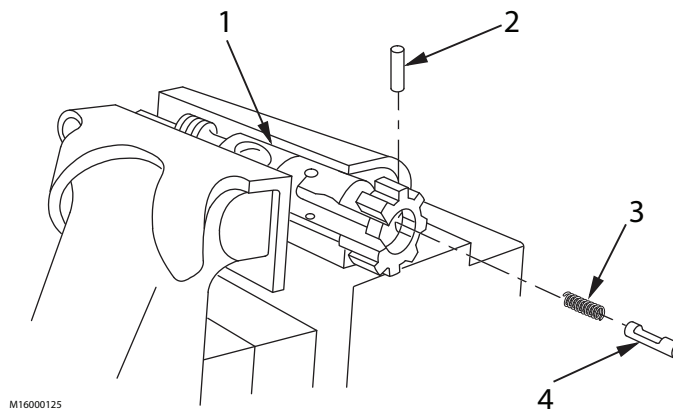


Figure 9. Installation of Cartridge Ejector.

CAUTION

Do not disassemble rubber insert from extractor spring assembly.

6. If removed, insert large end of extractor spring assembly (Figure 10, Item 2) into cartridge extractor (Figure 10, Item 1) and seat by pushing and turning clockwise.

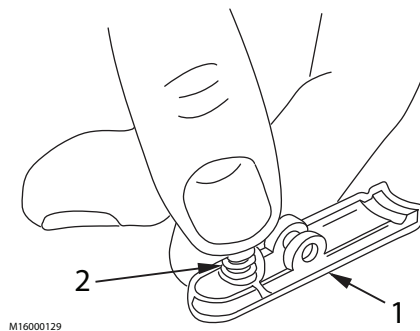


Figure 10. Installation of Extractor Spring Assembly.

7. Position cartridge extractor (Figure 11, Item 1) and extractor spring assembly (Figure 11, Item 4) on bolt (Figure 11, Item 3).

ASSEMBLY - Continued

8. Compress extractor spring assembly (Figure 11, Item 4) and cartridge extractor (Figure 11, Item 1) to align holes.
9. Install extractor pin (Figure 11, Item 2).

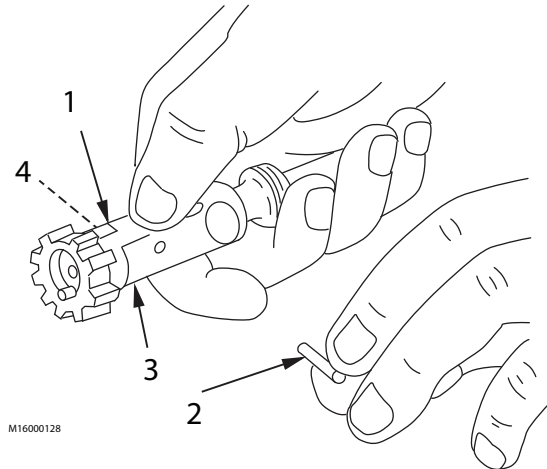


Figure 11. Installation of Extractor Pin.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install bolt assembly (WP 0011).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
KEY AND BOLT CARRIER ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Vise, machinist's (WP 0049, Table 1, Item 27)
Wrench, torque, in-lb (WP 0049, Table 1, Item 25)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

References

WP 0011

Materials/Parts

Carrier key screw Qty: 2 (WP 0050, Table 1, Item
1)
Cleaner, Lubricant, and Preservative (CLP) Qty:
1 (WP 0048, Table 1, Item 12)

Equipment Condition

Weapon cleared (WP 0009)
Bolt and bolt carrier assembly removed (TM
9-1005-319-10)
Bolt assembly removed (TM 9-1005-319-10)

DISASSEMBLY**NOTE**

Do not disassemble the key and bolt carrier assembly unless the bolt carrier key is defective as determined by inspection procedures in (WP 0011).

1. Remove two carrier key screws (Figure 1, Item 1) from bolt carrier assembly (Figure 1, Item 3). Discard carrier key screws.

NOTE

The heads and part of the bolt carrier key may be ground off in order to remove bolt carrier key from bolt carrier if carrier key screws cannot otherwise be removed.

2. Remove bolt carrier key (Figure 1, Item 2) from bolt carrier (Figure 1, Item 3).

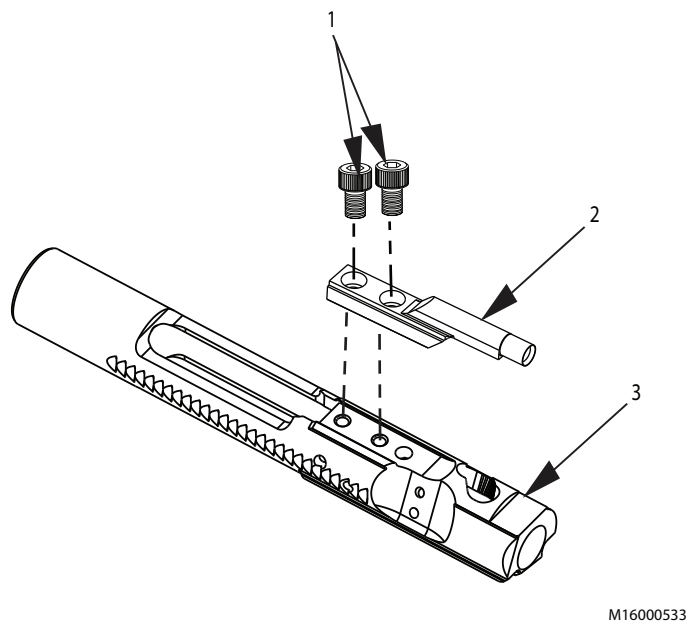


Figure 1. Removal of Carrier Key Assembly.

END OF TASK**INSPECTION**

Inspect bolt carrier key and bolt carrier for cracks, bends, and pitting.

END OF TASK**CLEANING**

Clean bolt carrier, carrier key, and carrier key screw recesses.

END OF TASK

LUBRICATION

Place one drop of lubricant in carrier key.

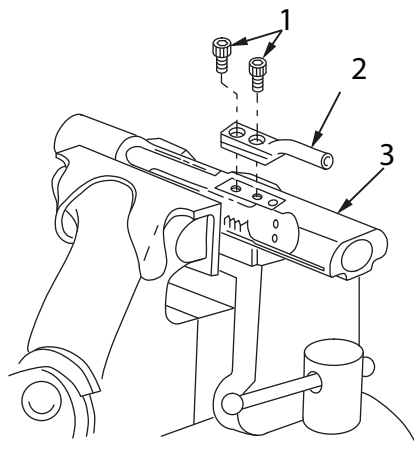
END OF TASK**REPLACE****NOTE**

If blanks are used, Blank Firing Attachment (BFA) must be attached.

If the bolt carrier key is replaced, three to eight rounds of blank or ball ammunition must be fired to ensure a seal is created. Manual operation of the weapon may be required. Refer to TM 9-1005-319-10 for firing. Must be fired by the owning unit, except for Air Force which will be fired by combat arms section.

END OF TASK**ASSEMBLY**

1. Place bolt carrier (Figure 2, Item 3) in vise using vise jaw caps. Install and position bolt carrier key (Figure 2, Item 2) on bolt carrier.
2. Install two new carrier key screws (Figure 2, Item 1).

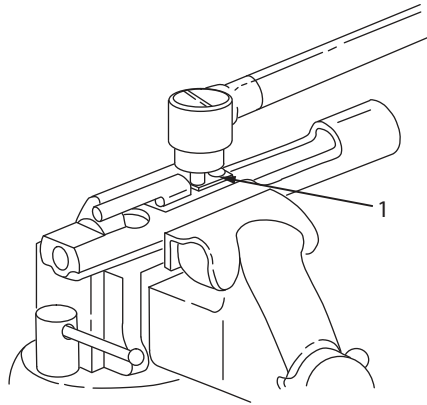


M16000124

Figure 2. Installation of Carrier Key.

ASSEMBLY - Continued

3. Torque carrier key screws (Figure 3, Item 1) to 50-58 in-lb (5.65-6.55 N-m).



M16000277

Figure 3. Torquing Carrier Key Screws.

NOTE

- Field staking method will be used by field units.
 - Field staking method is depicted in Figure 4.
4. Stake the two carrier key screws (Figure 4, Item 1) in three places (Figure 4, Item 3). Ensure staking raises a maximum of 0.025 in (0.064 cm) of material (Figure 4, Item 2) around the screws.

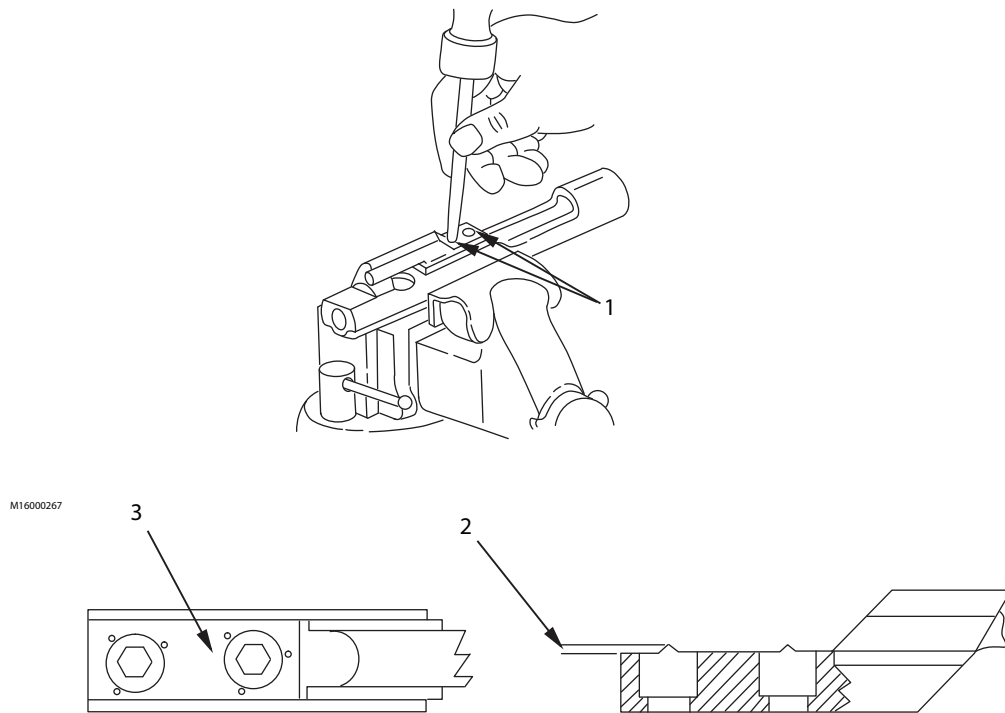
ASSEMBLY - Continued

Figure 4. Staking Carrier Key Screws.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Assemble bolt and bolt carrier assembly (TM 9-1005-319-10).
2. Install bolt and bolt carrier assembly (TM 9-1005-319-10).
3. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

MAINTAINER MAINTENANCE
CHARGING HANDLE ASSEMBLY MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

Personnel Required

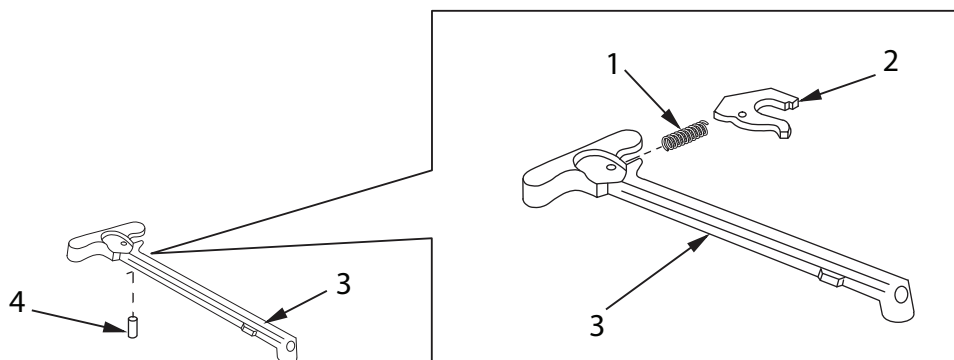
SMALL ARMS/ARTILLERY REPAIRER 91F

Materials/PartsCleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 12)**Equipment Condition**Weapon cleared (WP 0009)
Charging handle assembly removed (TM
9-1005-319-10)

DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Remove spring pin (Figure 1, Item 4) from charging handle (Figure 1, Item 3).
2. Catch charging handle latch (Figure 1, Item 2) and helical spring (Figure 1, Item 1) to prevent loss.



M1600062

Figure 1. Disassembly of Charging Handle Assembly.

END OF TASK

INSPECTION

Inspect all items for breaks, cracks, or damage.

END OF TASK**CLEANING**

Clean all items and remove carbon deposits.

END OF TASK**LUBRICATION**

Lightly lubricate all items.

END OF TASK**REPLACEMENT**

Replace all unserviceable items.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Position helical spring (Figure 2, Item 1) and charging handle latch (Figure 2, Item 2) in charging handle (Figure 2, Item 4). Align holes and hold in position.
2. Install spring pin (Figure 2, Item 3). Make sure spring pin is flush.

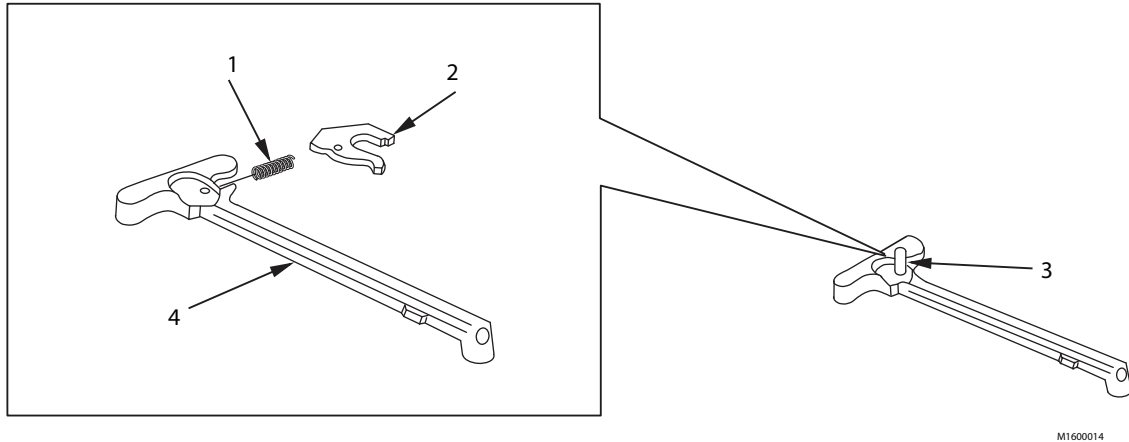
ASSEMBLY - Continued

Figure 2. Assembly of Charging Handle Assembly.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install charging handle assembly (TM 9-1005-319-10).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
UPPER RECEIVER AND BARREL ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Barrel removal fixture (WP 0049, Table 1, Item 7)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Combination wrench (WP 0049, Table 1, Item 28)
Modified needle nose pliers (WP 0034, Table 1)
File set, hand (WP 0049, Table 1, Item 6)
Vise, machinist's (WP 0049, Table 1, Item 27)
Wrench, torque, ft-lb (WP 0049, Table 1, Item 24)

Materials/Parts

Abrasive Cloth (WP 0048, Table 1, Item 18)
Carbon Removing Compound (WP 0048,
Table 1, Item 9)
Chemical and Oil Protective Gloves (WP 0048,
Table 1, Item 24)
Cleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 12)
Dry Cleaning Solvent (WP 0048, Table 1, Item
46)
Molybdenum Disulfide Grease (WP 0048,
Table 1, Item 26)
Polyethylene (WP 0048, Table 1, Item 42)
Recessed Washer (WP 0050, Table 1, Item 6)
Qty: 1

Materials/Parts (cont.)

Sealing Compound (WP 0048, Table 1, Item 45)
Small Arms Cleaning Brush (WP 0048,
Table 1, Item 8) Qty: 1
Solid Film Lubricant (SFL) (WP 0048,
Table 1, Item 28)
Technical Dichloromethane (WP 0048,
Table 1, Item 20)
Wash Pan (WP 0048, Table 1, Item 40)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

References

TC 3-22.9
WP 0016
WP 0017
WP 0026

Equipment Condition

Weapon cleared (WP 0009)
Adapter rail covers removed (TM 9-1005-319-10)
Weapon disassembled (TM 9-1005-319-10)

DISASSEMBLY**CAUTION**

- Do not use a screwdriver or any other tool when removing the handguard assemblies. Doing so may damage the handguard assemblies and/or slip ring.
- Do not remove heat shield for any reason. Doing so will damage the heat shield and the handguard assemblies will have to be replaced.

NOTE

Refer to TM 9-1005-319-10 for "buddy system" procedure to remove handguard assemblies.

1. **M16A2 ONLY**
Push down on handguard slip ring (Figure 1, Item 2) and lift upper handguard assembly (Figure 1, Item 1) up and out.

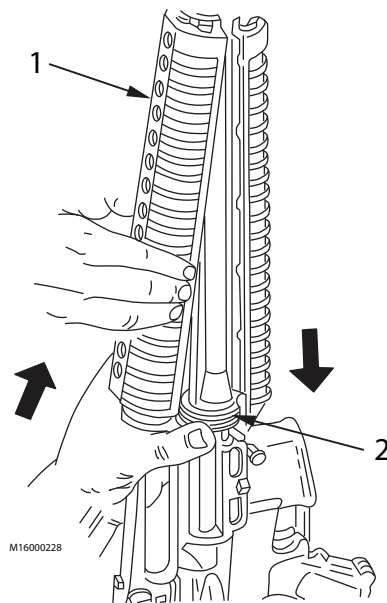


Figure 1. Removal of Upper Handguard Assembly (M16A2).

2. Push down on handguard slip ring (Figure 2, Item 2) and lift the lower handguard assembly (Figure 2, Item 1) up and out.

DISASSEMBLY - Continued

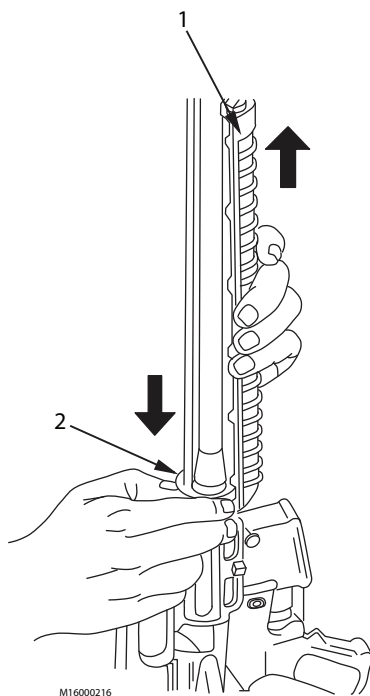


Figure 2. Removal of Lower Handguard Assembly (M16A2).

3. **M16A3, M16A4, M4, and M4A1 ONLY**

Compress handguard slip ring (Figure 3, Item 1) and pivot lower handguard (Figure 3, Item 5) off front retaining clip (Figure 3, Item 4).

4. Loosen slotted screw (Figure 3, Item 2) in upper handguard assembly (Figure 3, Item 3). Compress handguard slip ring (Figure 3, Item 1) and remove upper handguard assembly.

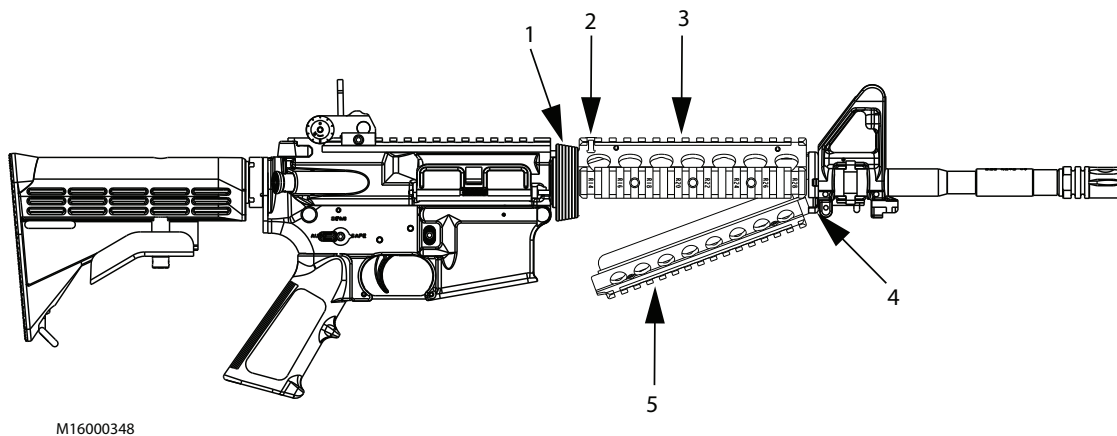


Figure 3. Removal of Upper and Lower Handguards (M16A3, M16A4, M4, and M4A1).

DISASSEMBLY - Continued

5. Remove barrel stop assembly (Figure 4, Item 1) from barrel assembly (Figure 4, Item 2) (M16A3 and M16A4 only).

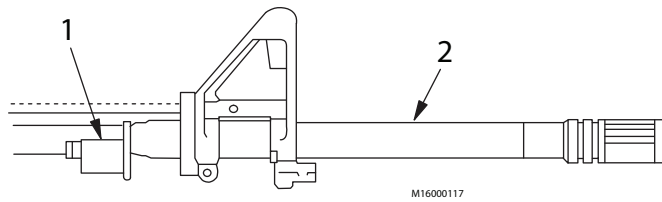


Figure 4. Removal of Barrel Stop Assembly (M16A3 and M16A4).

6. Remove spring pin (Figure 5, Item 2) from sight assembly (Figure 5, Item 1). Discard spring pin.

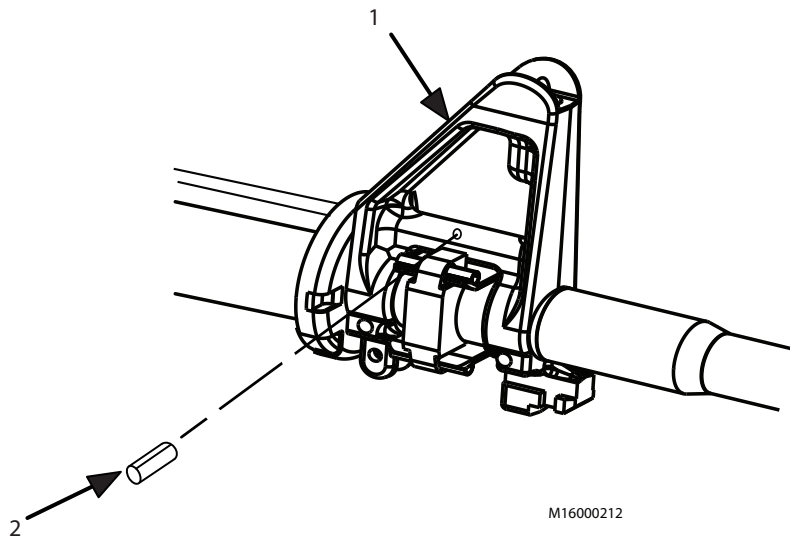
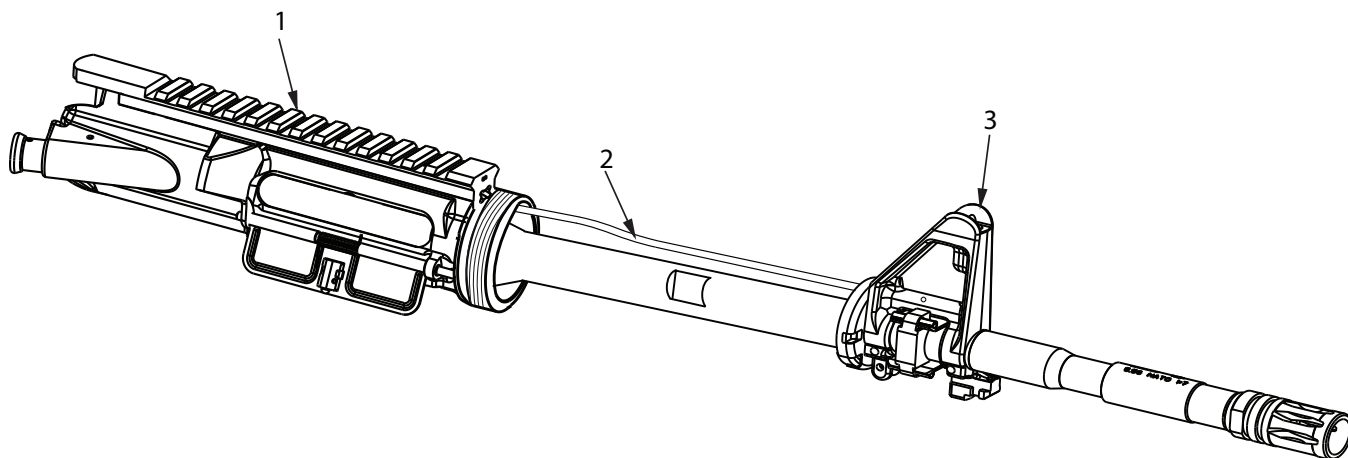


Figure 5. Removal of Spring Pin.

7. Slide gas tube (Figure 6, Item 2) back into upper receiver assembly (Figure 6, Item 1) to clear front sight (Figure 6, Item 3).
8. Rotate gas tube and pull forward to remove from upper receiver.

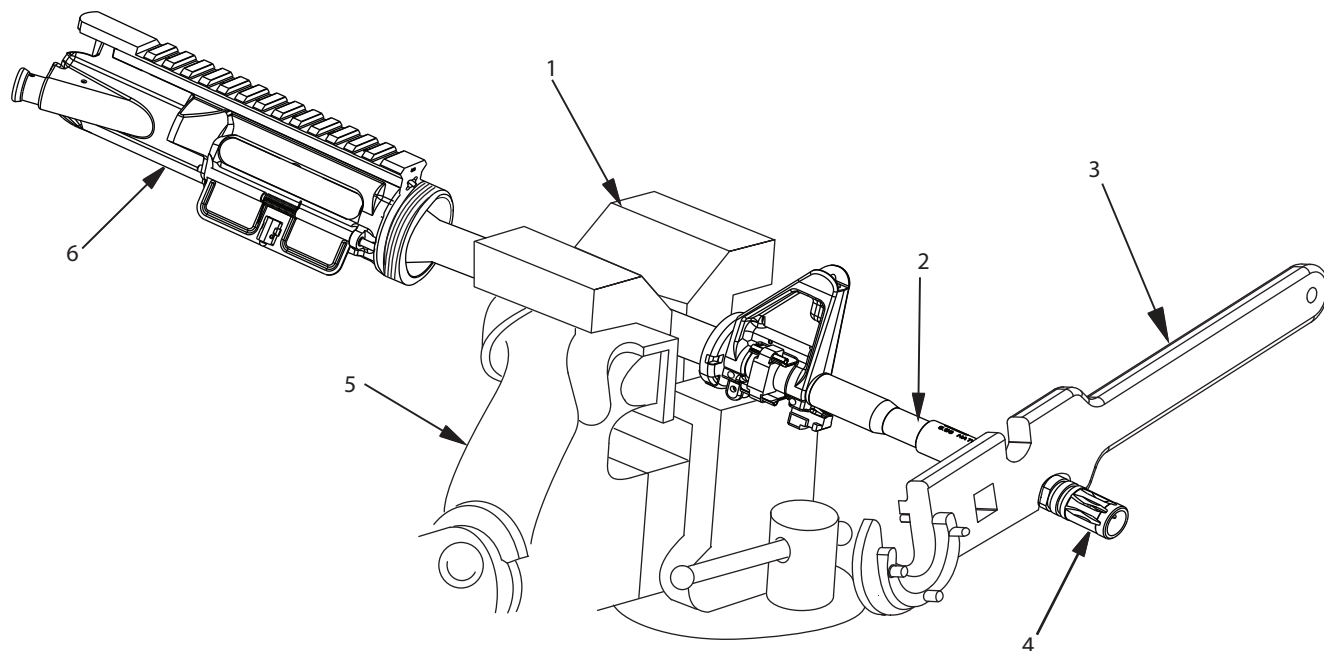
DISASSEMBLY - Continued



M16000501

Figure 6. Removal of Gas Tube.

9. Position upper receiver and barrel assembly (Figure 7, Item 6) in barrel removal fixture (Figure 7, Item 1) and secure both in machinist's vise (Figure 7, Item 5).
10. Remove compensator (Figure 7, Item 4) from barrel (Figure 7, Item 2) using combination wrench (Figure 7, Item 3).



M16000538

Figure 7. Removal of Compensator.

DISASSEMBLY - Continued

11. Remove recessed washer (Figure 8, Item 2) from barrel assembly (Figure 8, Item 1). Discard recessed washer.

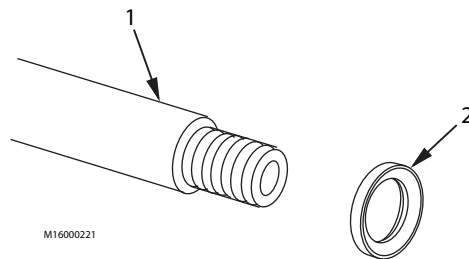


Figure 8. Removal of Recessed Washer.

CAUTION

Do not use a torque wrench to loosen the barrel nut assembly.

12. Turn barrel nut assembly (Figure 9, Item 1) counterclockwise using combination wrench (Figure 9, Item 2). Combination wrench must be pushed toward upper receiver assembly to compress slip ring spring in barrel nut assembly.

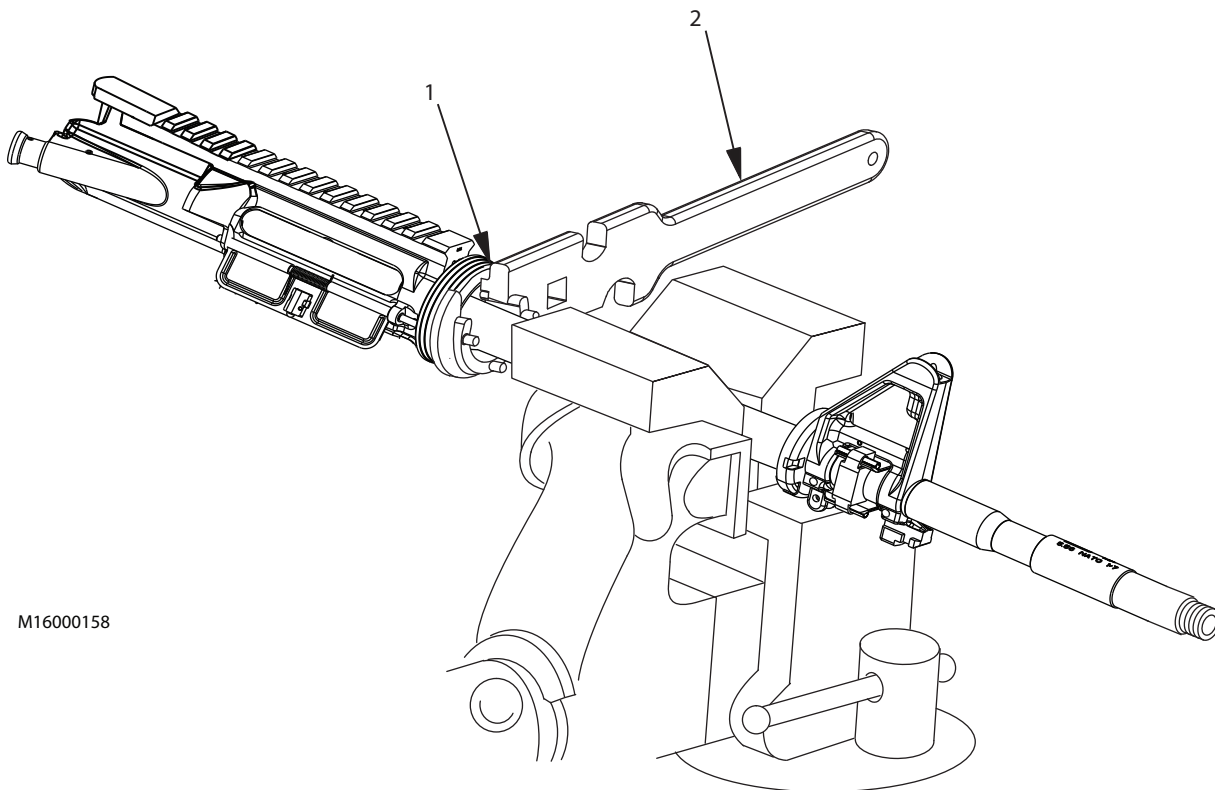


Figure 9. Loosening of Barrel Nut Assembly.

DISASSEMBLY - Continued

13. Separate upper receiver assembly (Figure 10, Item 1) from barrel assembly (Figure 10, Item 2).
14. Remove barrel assembly (Figure 10, Item 2) from machinist's vise and barrel removal fixture (Figure 10, Item 3).

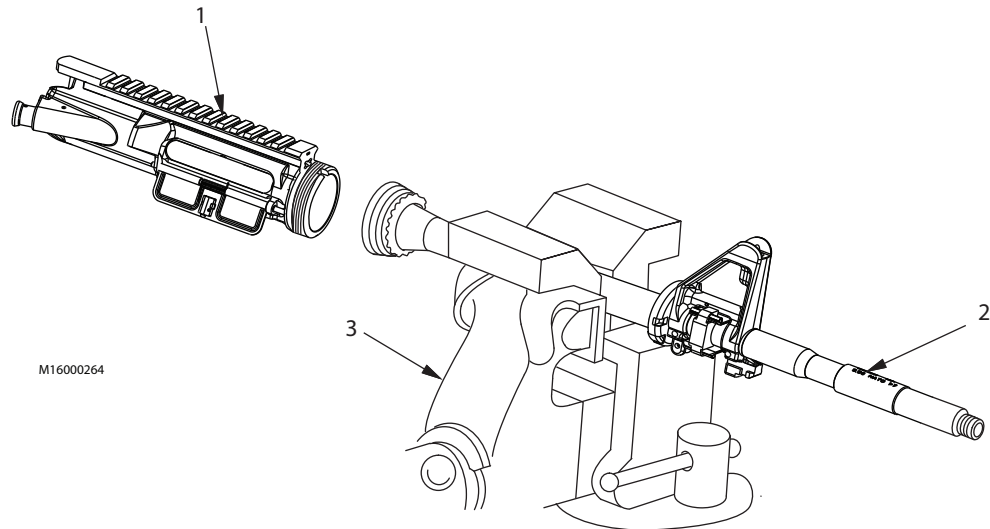
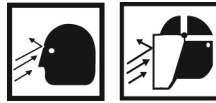


Figure 10. Separation of Upper Receiver Assembly and Barrel Assembly.

DISASSEMBLY - Continued**WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

Do not remove barrel nut from barrel assembly.

15. Remove retaining ring (Figure 11, Item 5) from barrel nut (Figure 11, Item 2).
16. Remove slip ring spring (Figure 11, Item 4) and handguard slip ring (Figure 11, Item 3) from barrel assembly (Figure 11, Item 1).

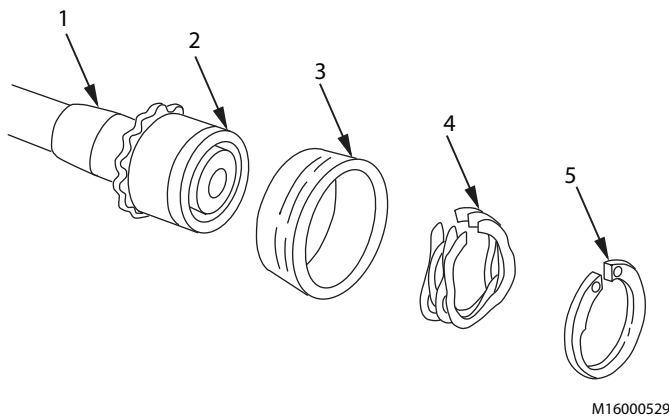


Figure 11. Removal of Handguard Slip Ring.

END OF TASK**INSPECTION****NOTE**

- The rail covers perform two primary functions. They are configured to protect the shooter's hands from direct skin contact with the metal parts of the adapter rail which gets hot during extended firing. They also protect the rail surfaces from excess wear and damage. For these reasons, rail covers should cover the unused sections of each adapter rail at all times.
 - Several different lengths of rail covers are provided with the handguard assemblies. For ease of reference, they should be identified by the number of ribs along the outer surfaces (11 rib, 5 rib, and 4 rib).
 - All rail covers are interchangeable between rifles and carbines (carbine set includes two 2 rib and two 6 rib sections).
1. Inspect adapter rail covers for broken or missing spring tension clips. If damaged or missing, replace the adapter rail cover.

INSPECTION - Continued

2. Inspect handguard assemblies for breaks, separation, and cracks using the following guidelines:
 - a. Breaks and separations of material which prevent proper retention or interfere with functioning of the weapon will be cause for handguard assembly rejection and replacement.
 - b. M16A2 handguard assemblies may have up to two of the three front retaining tabs (Figure 12, Item 1) missing. M16A3, M16A4, M4, and M4A1 may not have any front retaining tabs missing. If all front retaining tabs for the M16A2 are missing, or any of the tabs for the M16A3, M16A4, M4, or M4A1 are missing, handguard assemblies must be replaced.
 - c. Cracks up to one inch in length are acceptable provided they do not extend into the retaining flange (CRITICAL AREA) (Figure 12, Item 2).
 - d. Handguard assemblies which have a heat shield which is loose enough to rattle when installed on the weapon must be replaced. If upper handguard assembly for M16A3, M16A4, M4, or M4A1 is damaged, repair (WP 0016).

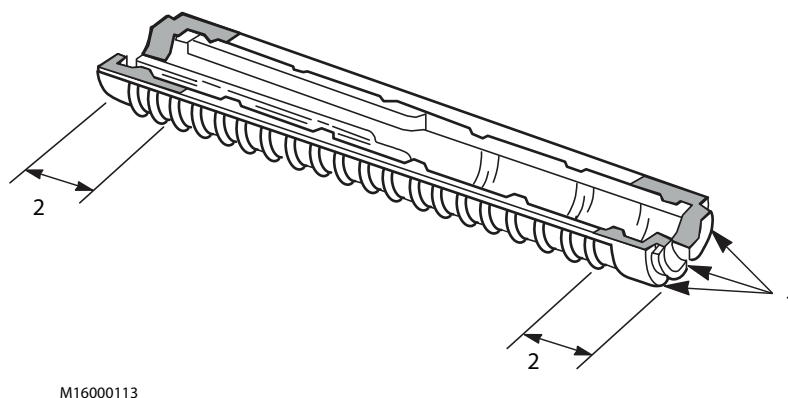
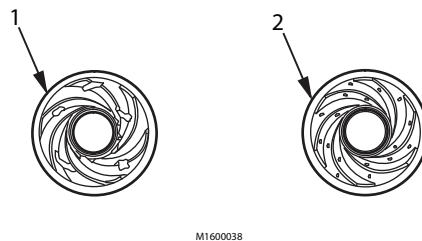


Figure 12. Inspection of Handguard Assemblies.

3. Inspect front sight area for evidence of gas leakage around gas tube. Replace gas tube if short recoil results from gas leakage.
4. Inspect gas tube for cracks.

INSPECTION - Continued**NOTE**

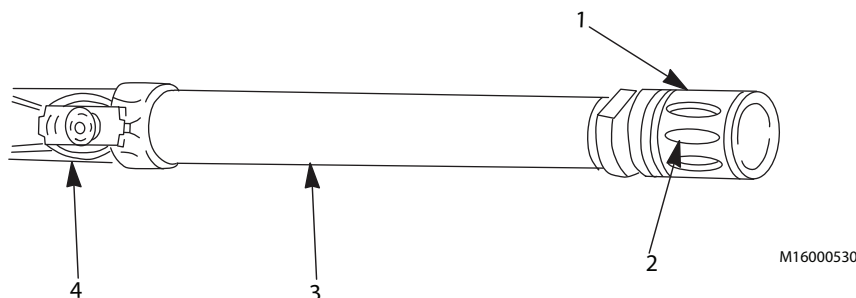
- Damaged or missing teeth of the barrel nut is not cause for rejection provided the proper torque value can be obtained during installation using the identified tools.
 - If removal of the barrel is not possible with the combination tool, a pipe wrench or other similar tool may be used during removal.
5. Inspect bore for burrs, cracks, rust, bulges, and pits using the following guidelines:
 - a. Pits no wider than a land or groove and no longer than 3/8 in. (0.95 cm) are allowed in the bore (Figure 13, Item 2).
 - b. Uniformly fine pits in a densely pitted area of the bore are allowable.
 - c. Lands that appear dark blue due to coating of gliding metal from projectiles are allowable.
 - d. Definitely ringed bores or bores ringed sufficiently to bulge the outside surface of the barrel are cause for rejection (Figure 13, Item 1).



M1600038

Figure 13. Bore Inspection.

6. If installed hand check compensator (Figure 14, Item 1) for looseness on barrel (Figure 14, Item 3). Align the third (middle) slot (Figure 14, Item 2) straight up at top dead center in line with front sight assembly (Figure 14, Item 4). The alignment may vary as much as one half the width of slot in either direction. If loose or out of alignment, repair.



M16000530

Figure 14. Alignment of Compensator.

7. If upper receiver is separated from barrel assembly, inspect chamber (Figure 15, Item 1) for pits utilizing a flashlight. Pits 1/8 in. (0.32 cm) in length are cause for rejection.
8. If barrel installed on upper receiver, inspect chamber for pits using reflector tool. Pits 1/8 in. (0.32 cm) in length are cause for rejection. If barrel assembly is replaced, inspect headspace (WP 0026). Inspect lugs on barrel extension for burrs. Remove burrs with a small stone.

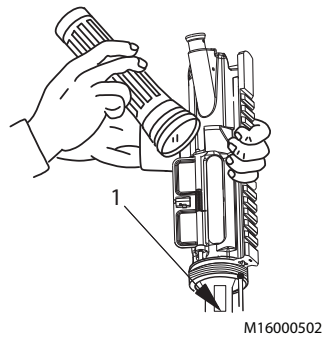
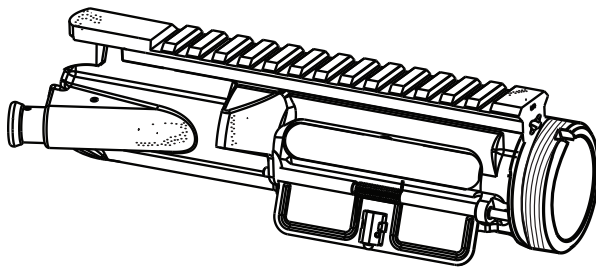
INSPECTION - Continued

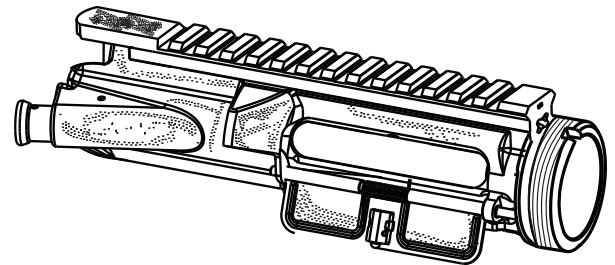
Figure 15. Inspection of Chamber.

9. Inspect upper receiver assembly for cracks, corrosion, wear, or damage.
 - a. Small dents or gouges that do not affect functioning will not be cause for rejection.
 - b. If upper receiver assembly contains cracks or holes, replace upper receiver.
 - c. Upper receiver feed ramps and barrel extension should not be excessively worn or pitted.



**CORRODED
(REPARABLE)**

M16000103



**CORRODED
(NONREPARABLE)**

Figure 16. Inspection for Corrosion.

END OF TASK

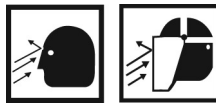
CLEANING**WARNING****CARBON REMOVING COMPOUND****NOTE**

A small arms cleaning brush (bore) (WP 0048, Table 1, Item 8) may be used to clean interior of front sight assembly where gas tube is secured.

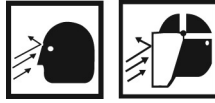
Use carbon removing compound (WP 0048, Table 1, Item 11) to remove carbon deposits from interior and exterior of gas tube and compensator. If a large amount of carbon is ground and cannot be removed, replace gas tube.

END OF TASK**REPAIR**

1. Repair corroded upper receiver assembly surface as follows:
 - a. Sand corroded area with abrasive cloth (WP 0048, Table 1, Item 18) and make sure all corrosion has been removed.

WARNING**DICHLOROMETHANE**

- b. Wash area with technical dichloromethane (methylene chloride) (WP 0048, Table 1, Item 20) to remove all dirt, grease and foreign material.
 - c. Apply sealing compound (WP 0048, Table 1, Item 45), mixed in accordance with manufacturer's directions, in areas to be filled.
- NOTE**
- Do not feather edges.
- d. Spread sealing compound as smoothly as possible into defective area. Let sealing compound dry.
 - e. Place a sheet of polyethylene (WP 0048, Table 1, Item 42) cut to size, over filled area. Rub by hand to smooth.
 2. After curing, remove polyethylene sheet in accordance with instructions from manufacturer.
 3. Wash area with technical dichloromethane (methylene chloride) (WP 0048, Table 1, Item 20) to remove all dirt, grease, and foreign material.
 4. Roughen area to be refinished with abrasive cloth (WP 0048, Table 1, Item 18) and clean surface again. Do not touch area with fingers.

REPAIR - Continued**WARNING****SOLID FILM LUBRICANT****CAUTION**

SFL is to be used only as an exterior surface protective finish and touch-up. If SFL comes in contact with recoiling parts of functional surfaces of weapon, remove immediately by washing with technical dichloromethane.

5. Repair shiny surfaces by spraying a coat of SFL (WP 0048, Table 1, Item 28) in accordance with instructions supplied by the manufacturer. Dry 24 hours before handling.

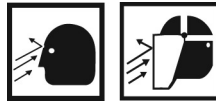
END OF TASK**REPLACE**

Replace damaged parts as necessary.

END OF TASK**LUBRICATION**

Lubricate parts as necessary.

END OF TASK

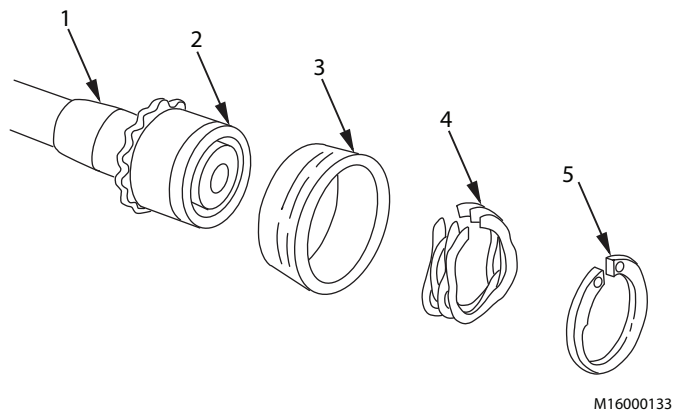
ASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

Weapons which have been re-barreled must be function-fired with seven rounds of 5.56mm ball ammunition at 25 meter range using target, prior to putting the weapon into service. This is the responsibility of the owning unit. Refer to TM 9-1005-319-10 and TC 3-22.9. AIR FORCE ONLY: This is the responsibility of combat arms shop.

1. Position barrel nut (Figure 17, Item 2) by sliding it to the rear of barrel assembly (Figure 17, Item 1) as far as possible.
2. Slide handguard slip ring (Figure 17, Item 3) over barrel nut (Figure 17, Item 2).
3. Press slip ring spring (Figure 17, Item 4) from both sides and insert into handguard slip ring (Figure 17, Item 3).
4. Install retaining ring (Figure 17, Item 5) against slip ring spring (Figure 17, Item 4). Snap retaining ring to barrel nut (Figure 17, Item 2).



M16000133

Figure 17. Installation of Handguard Slip Ring.

NOTE

The alignment pin must not show any signs of looseness.

5. Position barrel assembly (Figure 18, Item 3) with alignment pin (Figure 18, Item 1) up. Clamp barrel assembly in vise (Figure 18, Item 4) using barrel removal fixture (Figure 18, Item 2).

ASSEMBLY - Continued

NOTE

The slot should fit the alignment pin perfectly with very little or no rotational play present.

6. Wipe upper receiver threads clean and apply molybdenum disulfide grease (WP 0048, Table 1, Item 26) to the threads of the upper receiver and barrel nut.
7. Align upper receiver assembly (Figure 18, Item 5) using alignment pin (Figure 18, Item 1) and slot in upper receiver assembly. Install over end of barrel assembly (Figure 18, Item 3).

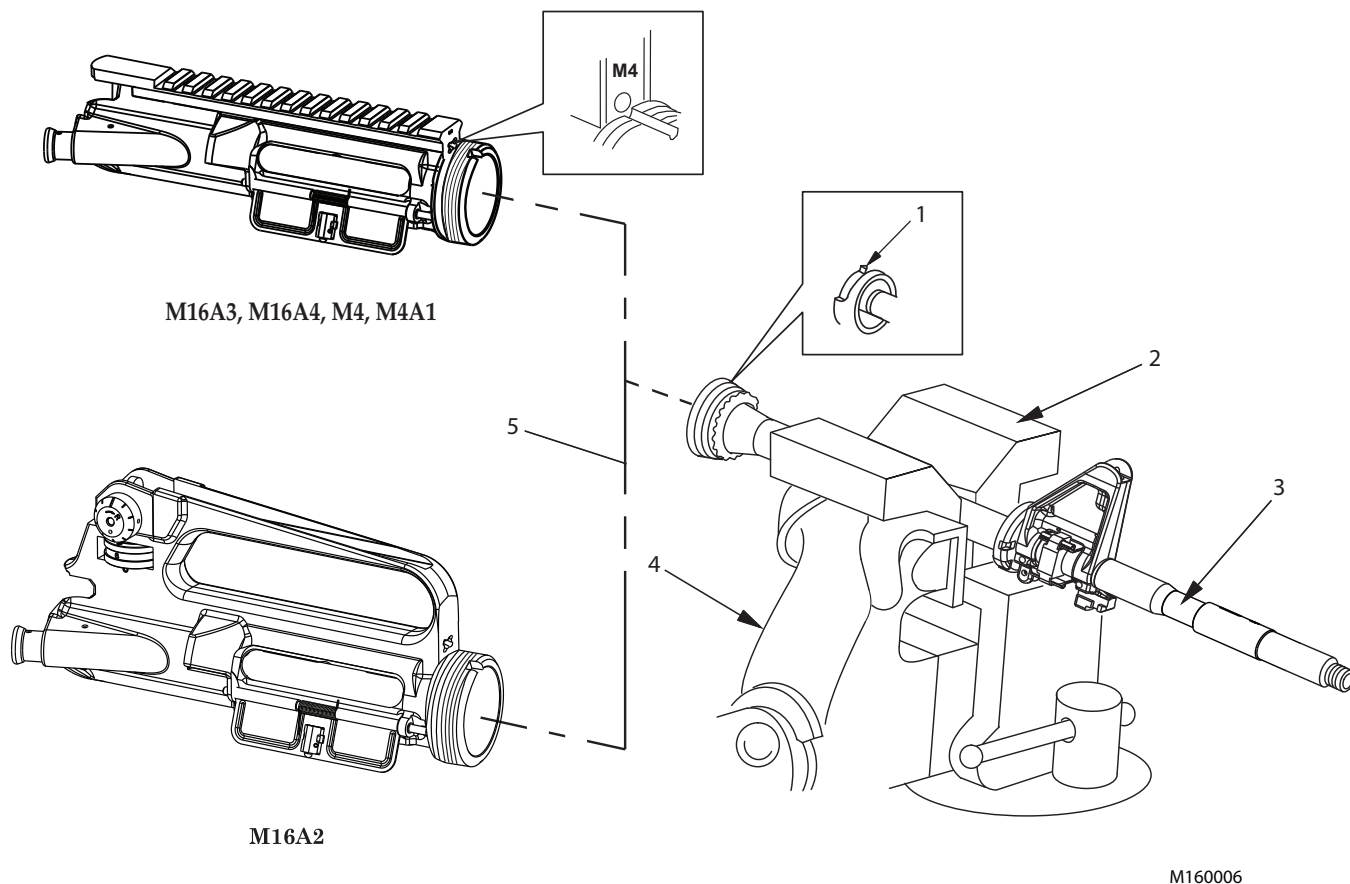


Figure 18. Alignment of Barrel Assembly and Upper Receiver Assembly.

ASSEMBLY - Continued

8. Engage threads of barrel nut assembly (Figure 19, Item 2) with upper receiver assembly (Figure 19, Item 3).

CAUTION

Do not torque over 80 ft-lb (108 N-m) while tightening barrel nut assembly to next hole, to allow for proper alignment of gas tube. Over torquing can cause damage to the upper receiver.

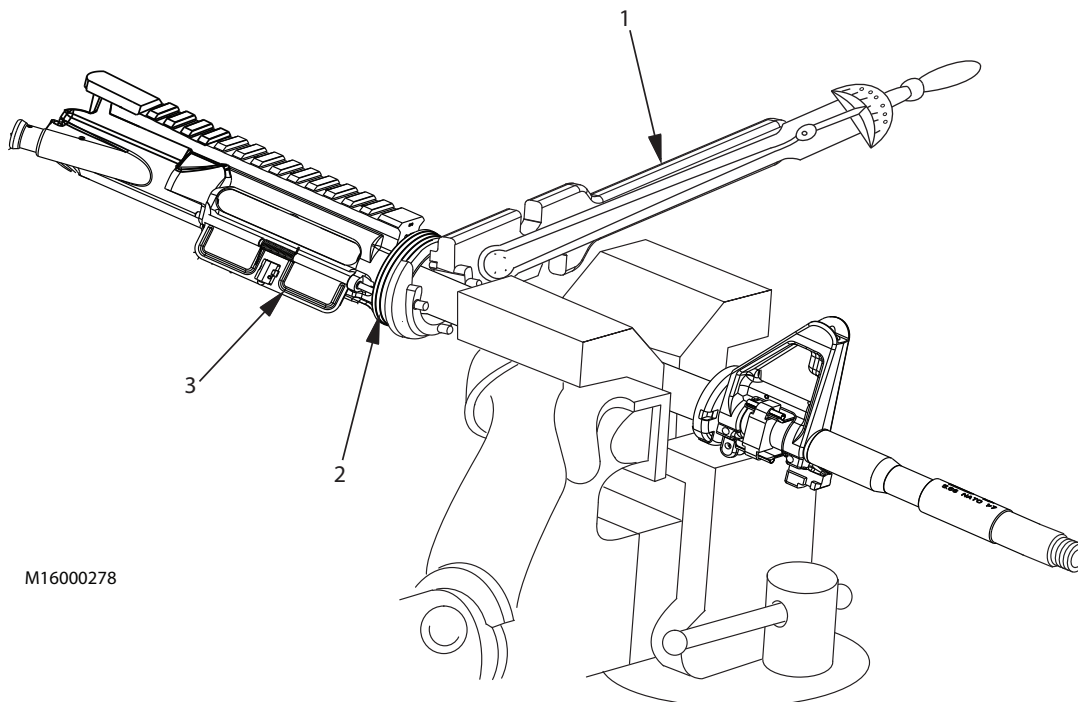
9. Torque barrel nut assembly (Figure 19, Item 2) to 30-80 ft-lb (40.5-108 N-m) using torque wrench with combination wrench (Figure 19, Item 1).

CAUTION

Do not use torque wrench for loosening.

NOTE

- Performing torquing procedure three times provides a better thread fit and prevents barrel nut from becoming loose.
 - Ensure all three drive pins or teeth on combination wrench are engaged with barrel nut assembly.
10. Loosen barrel nut and repeat step 9 three times.



M16000278

Figure 19. Torquing Barrel Nut Assembly.

ASSEMBLY - Continued**NOTE**

- If barrel assembly (usually new) is not properly aligned in upper receiver assembly (usually an old part), excessive windage will be present and an upper receiver assembly will require replacement to obtain proper fit between alignment pin and slot.
 - For properly aligned upper receiver assembly and barrel assembly, the rear sight aperture will be approximately in center of rear sight base.
 - Do not attempt to hold upper receiver assembly with pry bar; however, if barrel assembly turns in holding fixture, a pry bar may be used through front sight assembly base to help prevent assembly from turning in holding fixture.
 - Use care not to distort or bend front sight assembly or retaining pins.
 - Use "buddy system" to hold pry bar.
 - Never loosen barrel nut assembly to align for gas tube clearance.
11. Loosen vise and align bore on a distant vertical target. Center the target in the bore from the 12 o'clock through 6 o'clock. Front sight post should be on line and vertical with target (Figure 20, Item 1).

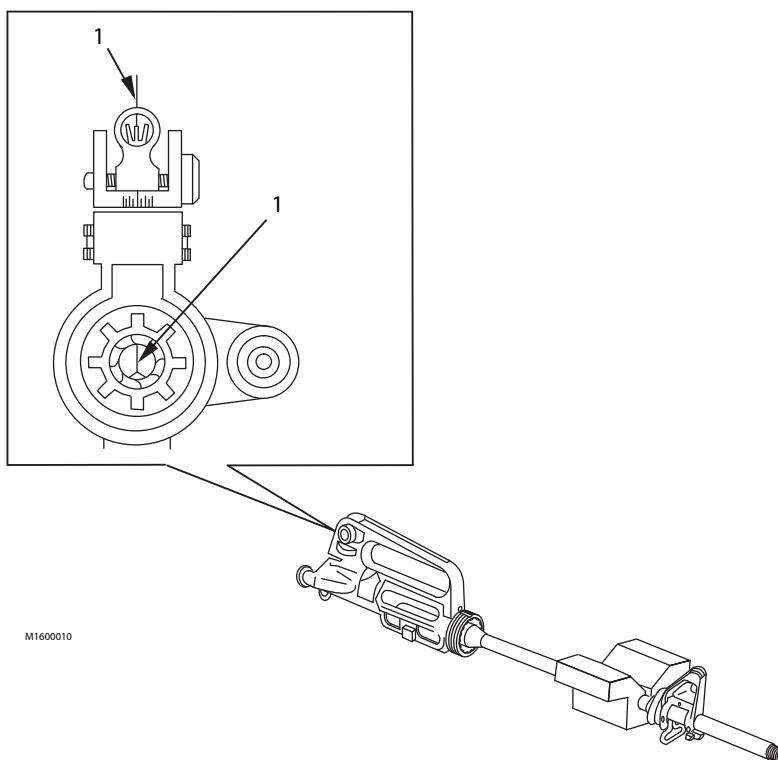


Figure 20. Alignment of Front and Rear Sights.

ASSEMBLY - Continued**CAUTION**

Do not torque over 80 ft-lb (108 N-m) while tightening barrel nut assembly to next hole, to allow for proper alignment of gas tube. Over torquing can cause damage to the upper receiver.

12. Torque barrel nut assembly to 30-80 ft-lb (40.5-108 N-m) to align barrel nut assembly serrations for proper gas tube clearance.

NOTE

- If parts of barrel nut assembly are properly aligned, tool will pass freely and lay top dead center along the top of the barrel. A punch may also be used as an alignment tool. If necessary, tighten barrel nut assembly to next hole to allow proper alignment.
 - The front 8 in. (20.32 cm) of a gas tube may be used as an alignment tool. This is inserted into the bolt carrier key and then inserted into rear of receiver.
13. Check alignment of barrel nut assembly (Figure 21, Item 2) with upper receiver assembly (Figure 21, Item 1).

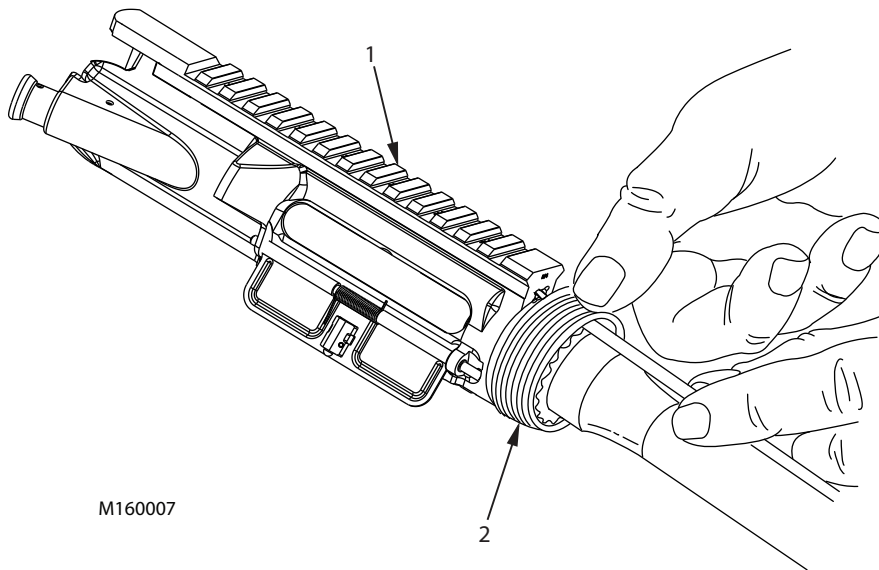


Figure 21. Alignment of Barrel Nut Assembly.

NOTE

When installing a recessed washer to barrel have large diameter of recessed washer facing compensator and small diameter rearward to the barrel assembly.

14. Install new recessed washer (Figure 22, Item 2) onto barrel assembly (Figure 22, Item 1).

ASSEMBLY - Continued

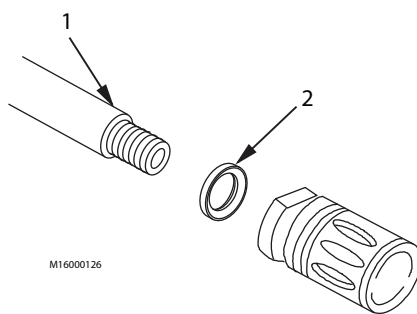


Figure 22. Installation of Compensator.

NOTE

Tighten compensator to complete alignment with front sight post to top dead center. Do not over rotate. If compensator is turned backwards, the compensator will loosen, so procedure must be started again with a new recessed washer.

15. Install compensator (Figure 23, Item 2) on barrel assembly (Figure 23, Item 3) using combination wrench (Figure 23, Item 1). Tighten compensator.

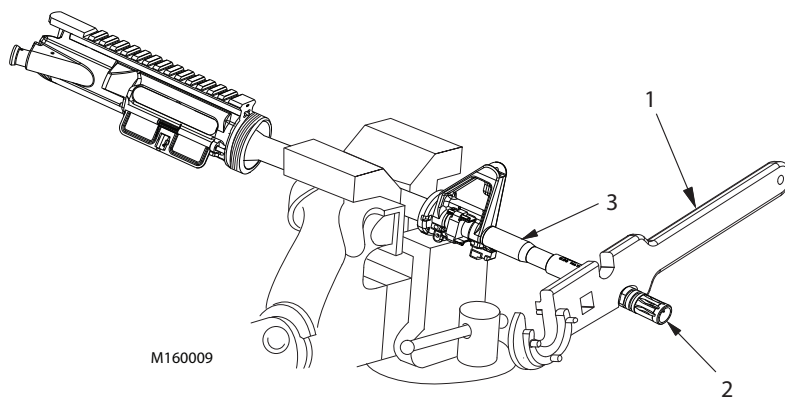


Figure 23. Alignment of Compensator.

ASSEMBLY - Continued**NOTE**

Ensure slip ring and retaining ring are aligned with the gas tube hole.

16. Slide gas tube (Figure 24, Item 1) through barrel nut assembly (Figure 24, Item 3) and then slide forward, inserting gas tube into hole in base of front sight assembly (Figure 24, Item 2).

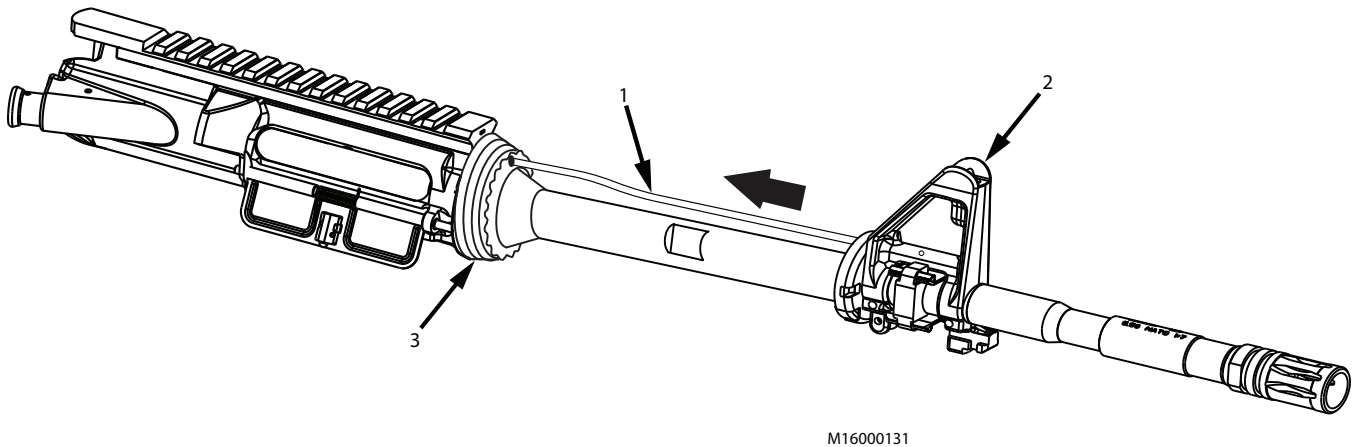


Figure 24. Installation of Gas Tube.

17. Align holes in gas tube (Figure 25, Item 1) and base of front sight assembly (Figure 25, Item 2).

NOTE

Modified needle nose pliers may be used to assist in installing spring pin.

18. Drive spring pin (Figure 25, Item 3) into base of front sight assembly (Figure 25, Item 2).

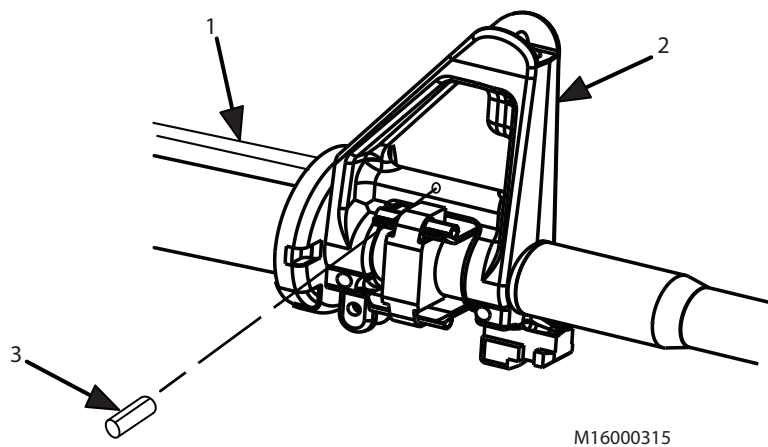


Figure 25. Installation of Spring Pin.

NOTE

Failure to install barrel stop assembly will prevent the M203A2 launcher from being mounted to the M16A3 and M16A4.

ASSEMBLY - Continued

19. Install barrel stop (Figure 26, Item 1) to barrel assembly (Figure 26, Item 2) (M16A3 and M16A4 only). Place barrel stop over thin section of barrel from 6 o'clock position, while avoiding contact with gas tube. Rotate barrel stop so opening is pointed upwards toward gas tube. Slide barrel stop forward until flat vertical portion fits into triangular sides of forward hand guard cap with springs to rear.

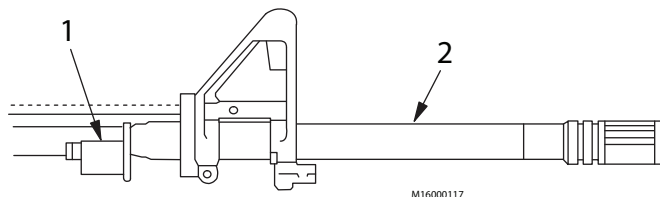


Figure 26. Installation of Barrel Stop Assembly.

20. **M16A3, M16A4, M4, M4A1 ONLY**

Loosen slotted screw (Figure 27, Item 2). Orient upper handguard assembly (Figure 27, Item 3) so rear-locking clamp (Figure 27, Item 5) is hanging down, after confirming that arrow on its inner surface points toward muzzle of weapon. Insert front end of upper handguard assembly into forward handguard cap at an angle. Be sure leaf spring at front of handguard assembly fits inside lip of handguard cap.

NOTE

M16A3 and M16A4 ONLY: Ensure notches at front edges of upper handguard assembly engage tabs at rear edges of barrel stop as handguard assembly is engaged and lowered into its final position.

21. Compress rear handguard slip ring (Figure 27, Item 1) and pivot upper handguard assembly (Figure 27, Item 3) down into fully locked position around barrel nut (Figure 27, Item 6). Ensure that gas tube slot of rear-locking clamp (Figure 27, Item 5) is straddling gas tube and that rear legs of rear-locking clamp slip under barrel nut flange (Figure 27, Item 6) as handguard assembly (Figure 27, Item 3) makes contact with barrel nut and slip ring (Figure 27, Item 1).
22. Release handguard slip ring (Figure 27, Item 1) and confirm that it slides forward evenly around rear flange of upper handguard assembly (Figure 27, Item 3). Note that two alignment pins automatically interface with cut-outs in barrel nut assembly (Figure 27, Item 6) at 10 and 2 o'clock positions to remove rotational play of handguard assembly (Figure 27, Item 3). Install and tighten slotted screw (Figure 27, Item 2).

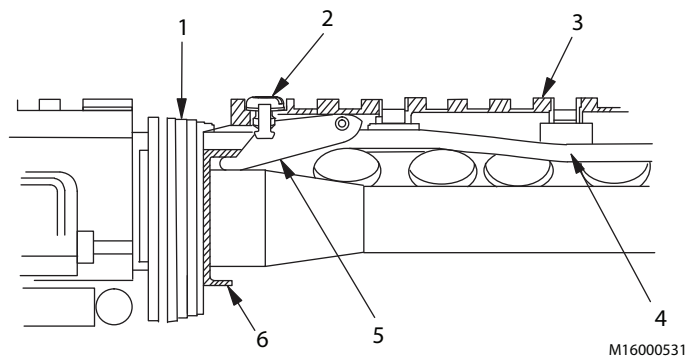


Figure 27. Installation of Upper Handguard Assembly (M16A3, M16A4, M4, and M4A1).

ASSEMBLY - Continued**CAUTION**

Do not remove thermal liner from lower handguard. Orient lower handguard by confirming that arrow on its inner surface points toward muzzle of weapon.

23. Insert front edges of lower handguard (Figure 28, Item 3) into forward handguard cap (Figure 28, Item 2). Compress handguard slip ring (Figure 28, Item 1) while pivoting lower handguard up and into its final position.
24. Release handguard slip ring (Figure 28, Item 1) and confirm that handguard slip ring engages around rear flange of lower handguard (Figure 28, Item 3).

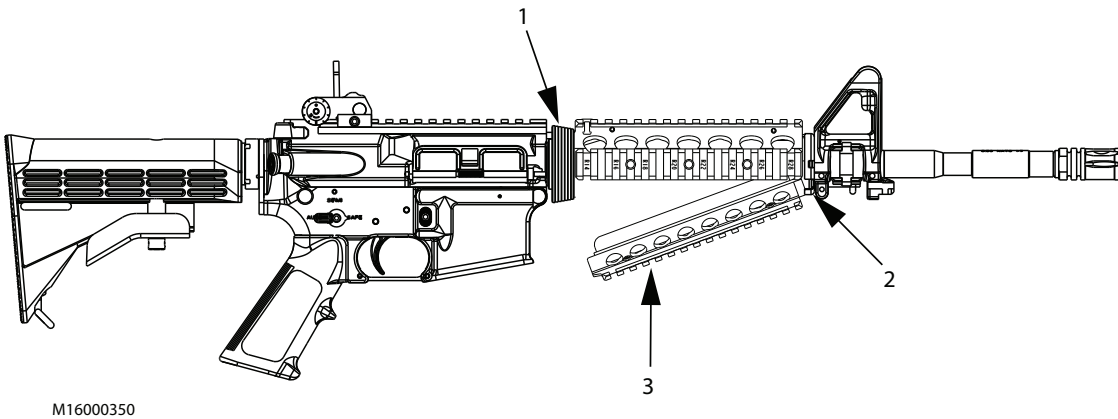


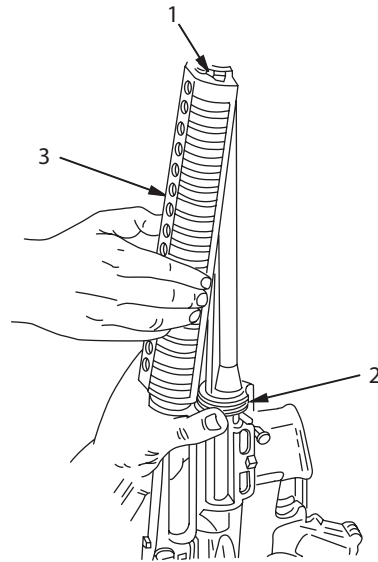
Figure 28. Installation of Lower Handguard (M16A3, M16A4, M4, and M4A1).

NOTE

Refer to TM 9-1005-319-10 for "buddy system" procedure for installing handguard assemblies.

25. **M16A2 ONLY**
Install top of upper handguard assembly (Figure 29, Item 3) in tube cap (Figure 29, Item 1) while pushing down on handguard slip ring (Figure 29, Item 2). Push bottom of upper handguard assembly in place and release handguard slip ring to lock handguard assembly in place.

ASSEMBLY - Continued



M16000317

Figure 29. Installation of Upper Handguard Assembly (M16A2).

26. Install top of lower handguard assembly (Figure 30, Item 2) in tube cap (Figure 30, Item 1) while pushing down on handguard slip ring (Figure 30, Item 3). Push bottom of lower handguard assembly in place and release handguard slip ring to lock both handguard assemblies in place.

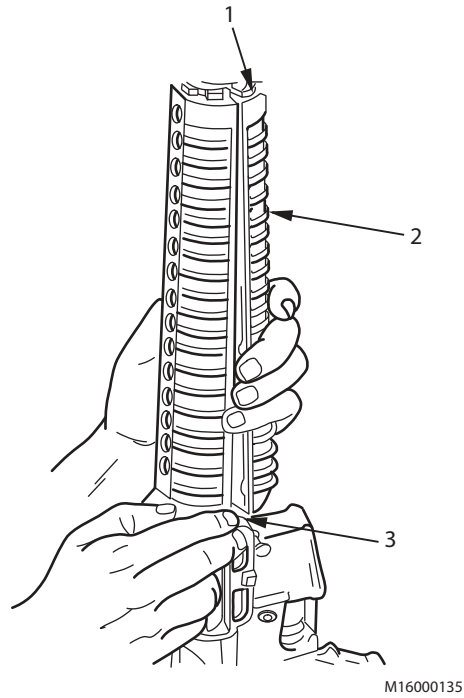
ASSEMBLY - Continued

Figure 30. Installation of Lower Handguard Assembly (M16A2).

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Assemble weapon (TM 9-1005-319-10).
2. Install adapter rail covers (TM 9-1005-319-10).
3. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
UPPER HANDGUARD ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
File set, hand (WP 0049, Table 1, Item 6)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Materials/Parts

Abrasive cloth (WP 0048, Table 1, Item 18)
Spring pin (WP 0050, Table 1, Item 9) Qty: 2

Equipment Condition

Weapon cleared (WP 0009)
Upper handguard assembly removed (WP 0015)
Adapter rail covers removed (TM 9-1005-319-10)

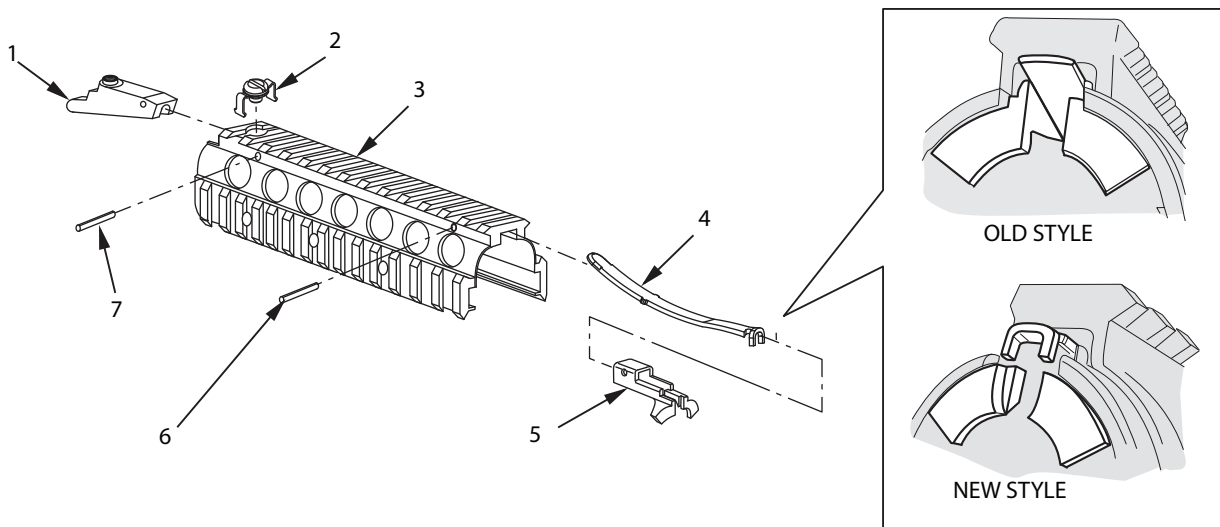
DISASSEMBLY**CAUTION**

The handguard assembly is aluminum; therefore, care should always be taken not to damage or burr the slots of the rails.

NOTE

A good one-person method for removal of the spring pins is to place a short piece of 1" x 4" wooden block under the rails. A two-person method is to hold the handguard assembly along the side and over a corner of a wooden work bench.

1. If damaged, remove slotted screw (Figure 1, Item 2) from upper handguard (Figure 1, Item 3).
2. Drive out spring pin (Figure 1, Item 7). Remove rear handguard clamp (Figure 1, Item 1). Discard spring pin.
3. Drive out spring pin (Figure 1, Item 6). Remove special shaped spacer (Figure 1, Item 5) and flat spring (Figure 1, Item 4). Discard spring pin.



M16000536

Figure 1. Disassembly of Handguard Assembly.

END OF TASK**INSPECTION**

Inspect handguard for cracks, broken tabs, proper installation, and loose heat shield.

END OF TASK**CLEANING**

Use general purpose brush (M16 rifle double-ended toothbrush) to clean recesses for slotted screw, rear handguard clamp, special shaped spacer, and flat spring.

END OF TASK

LUBRICATION

Lightly lubricate upper handguard assembly and spring latches in handguard.

END OF TASK**REPAIR**

Remove burrs or nicks from rails using a small stone.

END OF TASK**REPLACE**

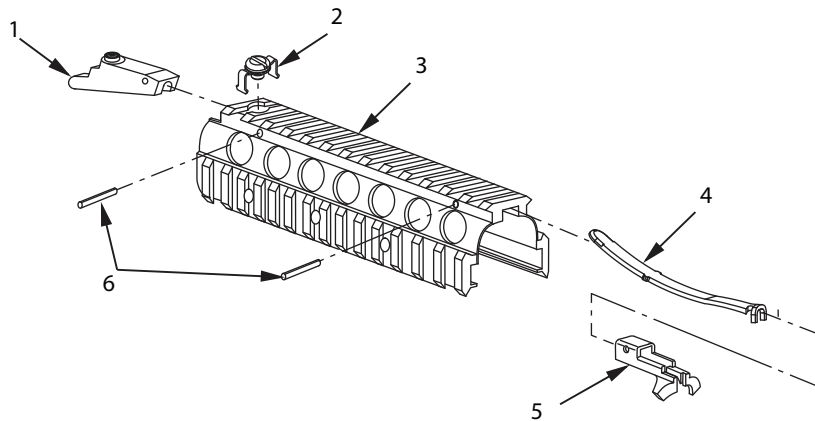
Replace defective items.

END OF TASK

ASSEMBLY**NOTE**

The flat spring can only be used with the new style special shaped spacer.

1. Install flat spring (Figure 2, Item 4) and special shaped spacer (Figure 2, Item 5) to upper handguard (Figure 2, Item 3). Secure with new spring pin (Figure 2, Item 6).
2. Install rear handguard clamp (Figure 2, Item 1) to upper handguard (Figure 2, Item 3) and secure with new spring pin (Figure 2, Item 6).
3. If removed, install slotted screw (Figure 2, Item 2) to upper handguard (Figure 2, Item 3).



M1600071

Figure 2. Assembly of Handguard Assembly.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install upper handguard assembly (WP 0015).
2. Install adapter rail covers (TM 9-1005-319-10).
3. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

MAINTAINER MAINTENANCE
UPPER RECEIVER ASSEMBLY AND REAR SIGHT ASSEMBLY MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Vise, machinist's (WP 0049, Table 1, Item 27)

Materials/Parts

Cleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 12) Qty: 1
Index screw (WP 0050, Table 1, Item 3) Qty: 1
Solid Film Lubricant (SFL) (WP 0048,
Table 1, Item 28) Qty: 1

Personnel Required

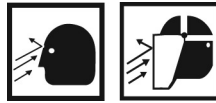
SMALL ARMS/ARTILLERY REPAIRER 91F

References

WP 0018

Equipment Condition

Weapon cleared (WP 0009)
Bolt carrier assembly removed (TM
9-1005-319-10)
Charging handle removed (TM 9-1005-319-10)
Upper and lower receivers separated (TM
9-1005-319-10)
Barrel removed (WP 0015)

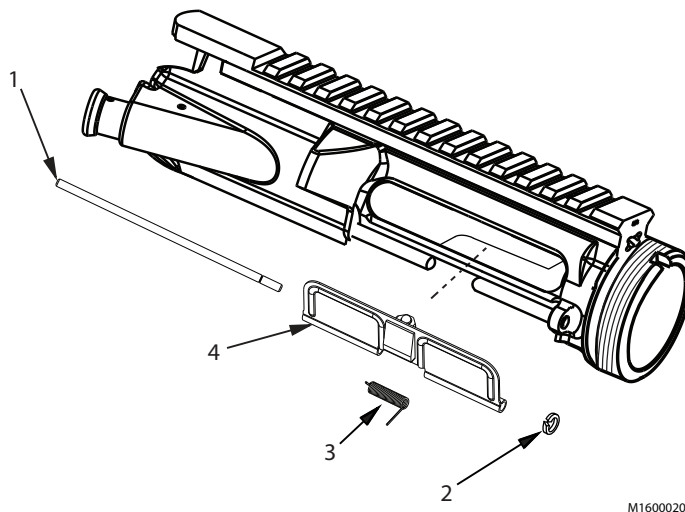
DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

Headless grooved pin may bind against forward assist housing and require some additional force to remove.

1. Remove retaining ring (Figure 1, Item 2) and slide headless grooved pin (Figure 1, Item 1) to the rear.
2. Catch cover spring (Figure 1, Item 3) and ejection port cover (Figure 1, Item 4) to prevent loss as headless grooved pin (Figure 1, Item 1) is withdrawn.



M16000208

Figure 1. Removal of Ejection Port Cover.

CAUTION

- Be sure to catch small parts.
 - AIR FORCE ONLY: Use magnet to keep from losing small parts.
3. **M16A2 ONLY**
Drive out spring pin (Figure 2, Item 1).
 4. Remove windage knob (Figure 2, Item 4), helical spring (Figure 2, Item 3), and ball bearing (Figure 2, Item 2).

DISASSEMBLY - Continued

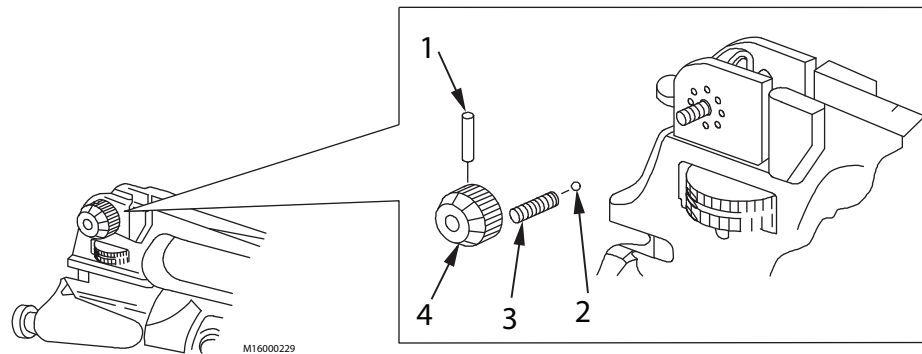


Figure 2. Removal of Windage Knob.

5. Remove windage screw (Figure 3, Item 2) from rear sight base (Figure 3, Item 3).
6. Remove sight aperture (Figure 3, Item 1) and flat spring (Figure 3, Item 4) from rear sight base (Figure 3, Item 3).

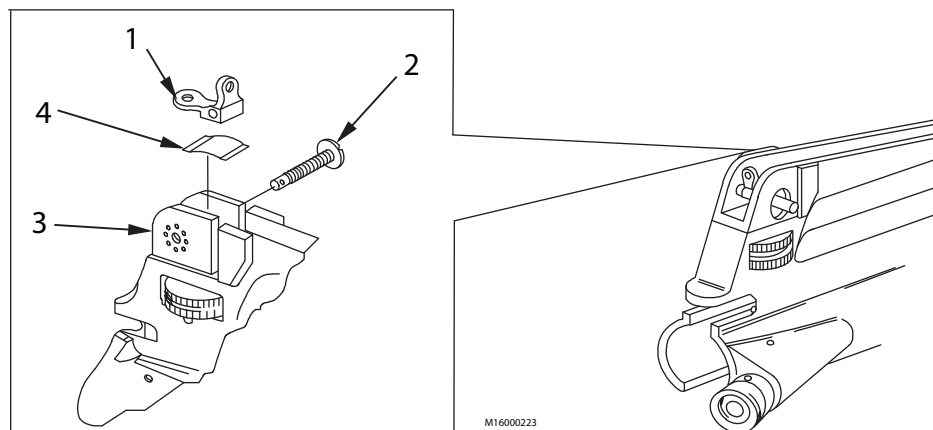
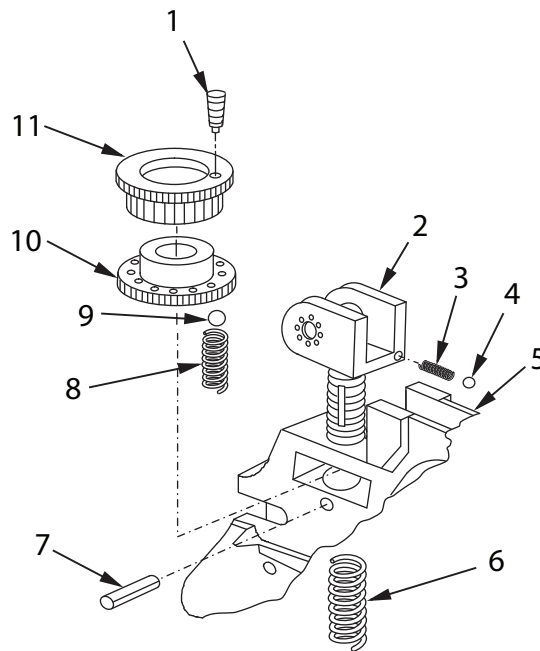


Figure 3. Removal of Sight Aperture.

DISASSEMBLY - Continued

7. Drive out spring pin (Figure 4, Item 7). Catch helical spring (Figure 4, Item 6).
8. Rotate elevation index (Figure 4, Item 11) until rear sight base (Figure 4, Item 2) clears upper receiver (Figure 4, Item 5). Catch ball bearing (Figure 4, Item 4) and helical spring (Figure 4, Item 3) as rear sight base is removed.
9. Push elevation index (Figure 4, Item 11) out using slight rotation motion. Catch ball bearing (Figure 4, Item 9) and helical spring (Figure 4, Item 8).
10. Remove index screw (Figure 4, Item 1). Discard index screw. Separate elevation index (Figure 4, Item 11) from elevation knob (Figure 4, Item 10).



M1600066

Figure 4. Disassembly of Rear Sight Assembly.

11. **ALL WEAPONS**
Remove spring pin (Figure 5, Item 3).

NOTE

For further disassembly of forward assist assembly see (WP 0018).

12. Remove forward assist assembly (Figure 5, Item 4) and helical spring (Figure 5, Item 2) from upper receiver (Figure 5, Item 1).

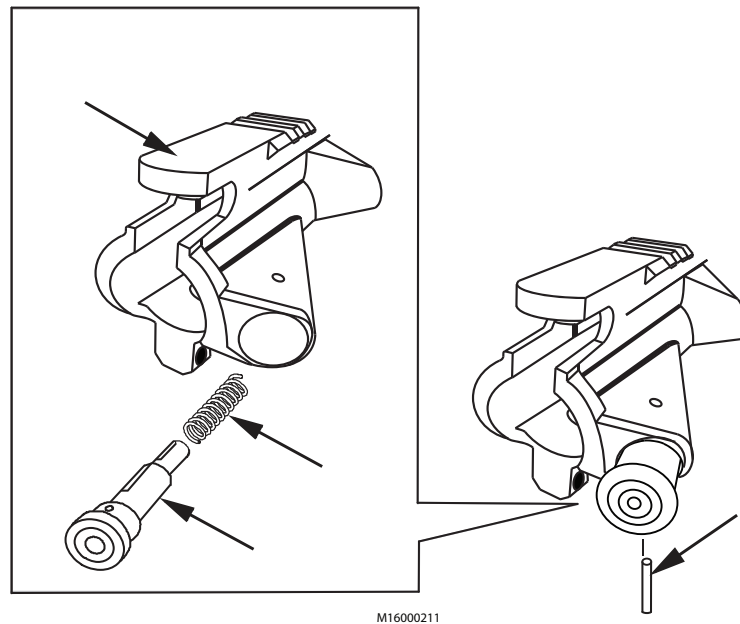
DISASSEMBLY - Continued

Figure 5. Removal of Forward Assist.

END OF TASK**INSPECTION**

1. Check rear sight parts for serviceability. Inside of apertures should be round and distinct.
2. Visually inspect rear sight assembly helical springs and ball bearings for breaks, bends, and missing parts. Ball bearings should be smooth and round.
3. Check upper receiver for cracks, corrosion, and damage. Clear drain hole. Repair (WP 0015).
4. Check that flat spring retains sight aperture firmly in either position.
5. Check elevation index and windage knob for legibility of markings. Check underside of windage knob for cracks. Detent indexing surfaces should be well formed.
6. Check rear sight base for serviceability. Clear drain holes for springs. Threaded portion of rear sight base and elevation knob should be well formed.
7. Inspect rear sight guards for bends.
8. Inspect ejection port cover and latch assembly for serviceability.
9. Inspect all parts for damage and wear.

END OF TASK**REPAIR****NOTE**

- This procedure is for repairing bent rear sight guards.
- Ensure that rear sight assembly components are removed from upper receiver.

REPAIR - Continued

1. Place carrying handle (Figure 6, Item 3) in a vise using jaw clamps. Tighten vise to firmly hold upper receiver (Figure 6, Item 4).
2. Using two adjustable wrenches, gradually bend guards (Figure 6, Item 2) to straighten. When bending the guards, gradually bend beyond the straight point as the guard will partially return when bending pressure is stopped.
3. After straightening, remove any nicks, kinks, or burrs that remain on the inside of guards (Figure 6, Item 1).

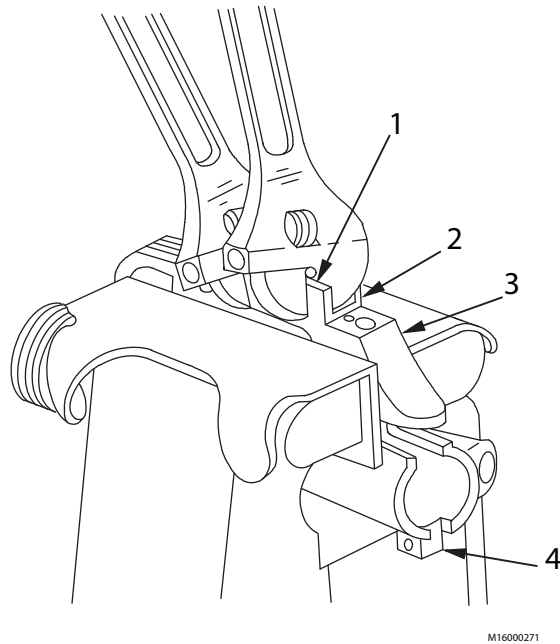
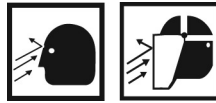


Figure 6. Straightening Rear Sight Guards.

REPAIR - Continued**WARNING****SOLID FILM LUBRICANT****CAUTION**

Do not use wire brush on aluminum surfaces.

4. Apply SFL (WP 0048, Table 1, Item 28) to brightened area for final protective coating.
5. If rear sight guards cannot be straightened utilizing the above procedures, replace the upper receiver.

END OF TASK**REPLACE**

1. Replace flat spring if sight aperture is not firm.
2. Replace all damaged or defective parts.

END OF TASK**CLEANING**

Clean and remove carbon deposits from all items.

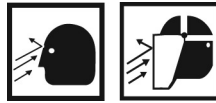
END OF TASK**LUBRICATION**

1. Lubricate upper receiver assembly and rear sight assembly. Apply CLP (WP 0048, Table 1, Item 12) to helical springs and ball bearings (three each) and threaded portion of screws before installation. Lubricate helical springs and ball bearings through their respective drain holes.
2. Apply CLP (WP 0048, Table 1, Item 12) to helical spring and forward assist assembly.

END OF TASK

ASSEMBLY

WARNING



Springs are under compression and can act as a projectile when being removed or installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Install helical spring (Figure 7, Item 3) and forward assist assembly (Figure 7, Item 4) into upper receiver (Figure 7, Item 1).
2. Install spring pin (Figure 7, Item 2).

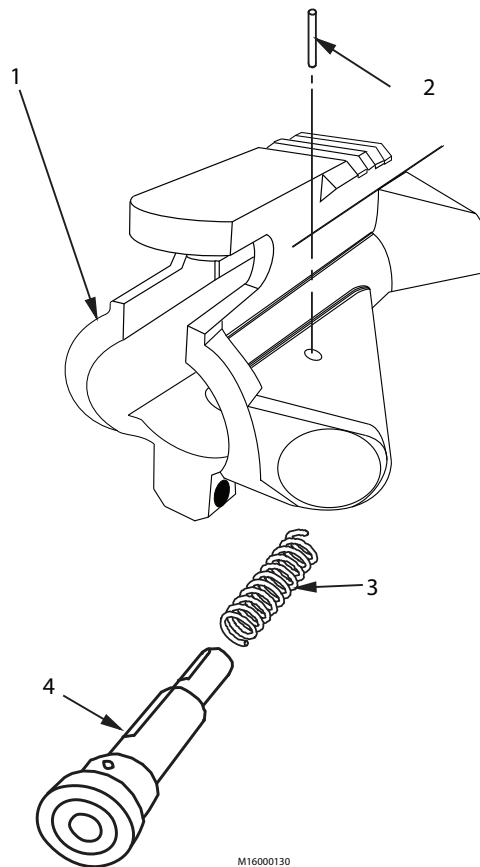


Figure 7. Installation of Forward Assist Assembly.

3. **M16A2 ONLY**
Assemble elevation knob (Figure 8, Item 6), elevation index (Figure 8, Item 7), and new index screw (Figure 8, Item 1). Do not overtighten index screw as scale will require adjustment.
4. Install ball bearing (Figure 8, Item 5) and helical spring (Figure 8, Item 4).
5. Depress ball bearing (Figure 8, Item 5) and slide elevation knob assembly (Figure 8, Item 2) into upper receiver (Figure 8, Item 3) from the side. Center elevation knob assembly.

ASSEMBLY - Continued

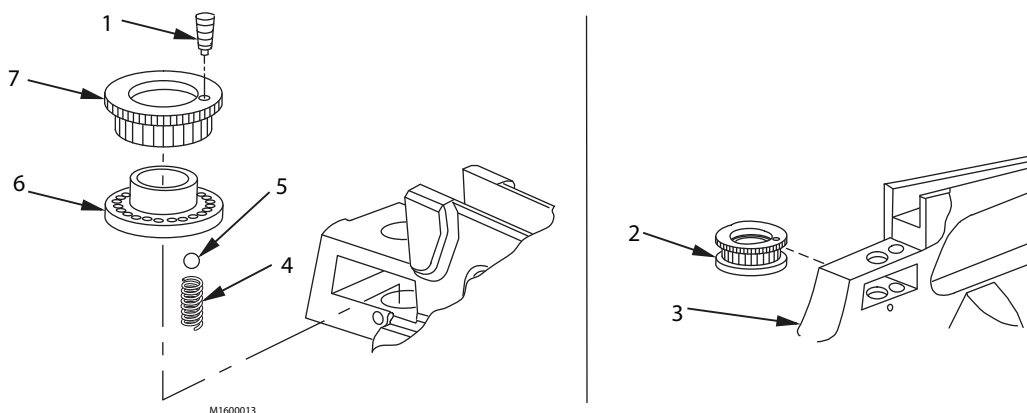


Figure 8. Assembly and Installation of Elevation Knob Assembly.

NOTE

All springs are identical when new. Once disassembled from the rifle, their free length may vary due to different amounts of compression when installed. If the length of springs varies, use longer spring with windage knob and shorter spring in rear sight base.

6. Insert threaded portion of rear sight base (Figure 9, Item 1) into upper receiver (Figure 9, Item 5) and rotate elevation knob assembly (Figure 9, Item 4) until threads engage.
7. Insert helical spring (Figure 9, Item 2) and ball bearing (Figure 9, Item 3) into hole as elevation knob assembly (Figure 9, Item 4) is further rotated and rear sight base (Figure 9, Item 1) is lowered into upper receiver (Figure 9, Item 5). Rotate elevation knob assembly until rear sight base is all the way down. Then come up 22 clicks before installing spring pin. Check spring action of helical spring on upper receiver.

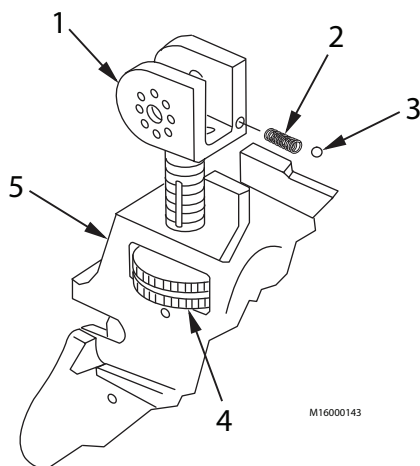


Figure 9. Installation of Rear Sight Base.

ASSEMBLY - Continued

8. Insert helical spring (Figure 10, Item 5) through underside of upper receiver (Figure 10, Item 2). Compress helical spring to install spring pin (Figure 10, Item 1). Spring pin must pass over helical spring, not through its coils. Rotate elevation knob assembly (Figure 10, Item 3) until rear sight base (Figure 10, Item 4) is all the way down.

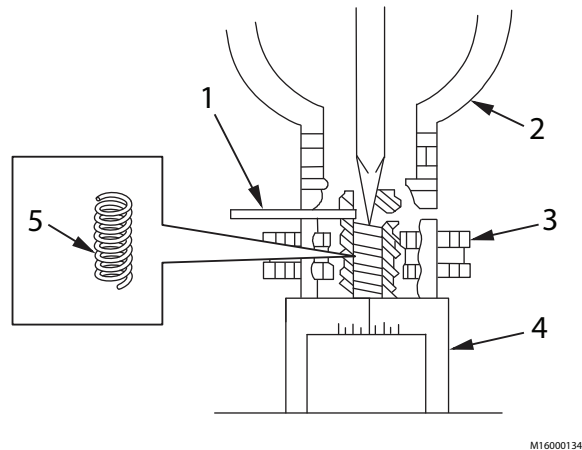


Figure 10. Installation of Helical Spring.

NOTE

Install sight aperture with large sight towards rear of rear sight base.

9. Install flat spring (Figure 11, Item 7) and sight aperture (Figure 11, Item 8) in rear sight base (Figure 11, Item 6). Install windage screw (Figure 11, Item 1).
10. Insert helical spring (Figure 11, Item 3) and ball bearing (Figure 11, Item 2) in windage knob (Figure 11, Item 4).

NOTE

Tilt upper receiver toward windage knob during positioning to prevent loss of ball bearing.

11. Position windage knob (Figure 11, Item 4) on shaft of windage screw (Figure 11, Item 1). Align holes in windage knob with hole of shaft in windage screw. Install spring pin (Figure 11, Item 5).

ASSEMBLY - Continued

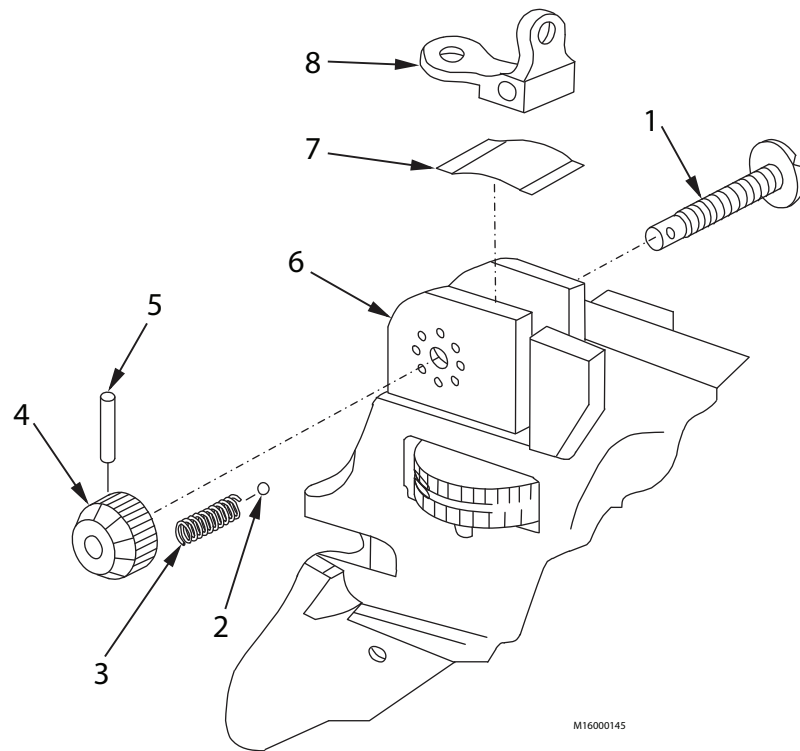


Figure 11. Installation of Sight Aperture and Windage Knob.

12. **ALL WEAPONS**

Position ejection port cover (Figure 12, Item 4) and helical spring (Figure 12, Item 3) on upper receiver with short leg of helical spring to the rear on inside of ejection port cover.

NOTE

Long leg of helical spring must be positioned and pretensioned before the headless grooved pin is installed.

13. Hold short leg of helical spring (Figure 12, Item 3) in this position and turn long leg one half turn (180 degrees).
14. Position long leg of helical spring (Figure 12, Item 3) against ejection port cover (Figure 12, Item 4). Hold helical spring and ejection port cover in this position and install headless grooved pin (Figure 12, Item 1). Check for proper spring tension during installation of retaining ring (Figure 12, Item 2).

ASSEMBLY - Continued

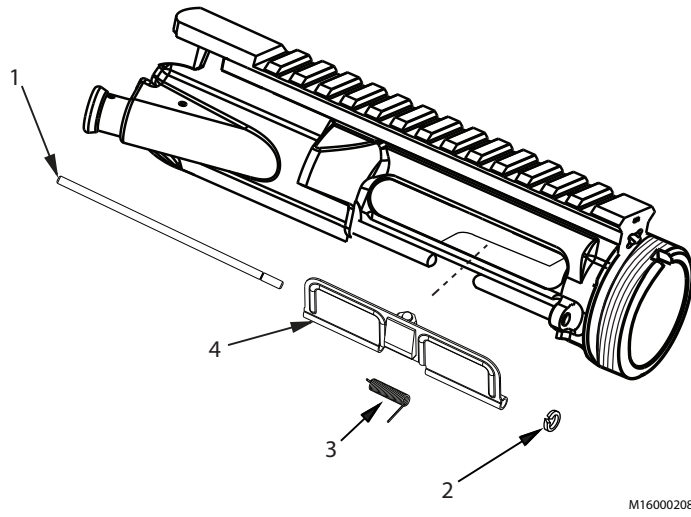


Figure 12. Installation of Ejection Port Cover.

END OF TASK

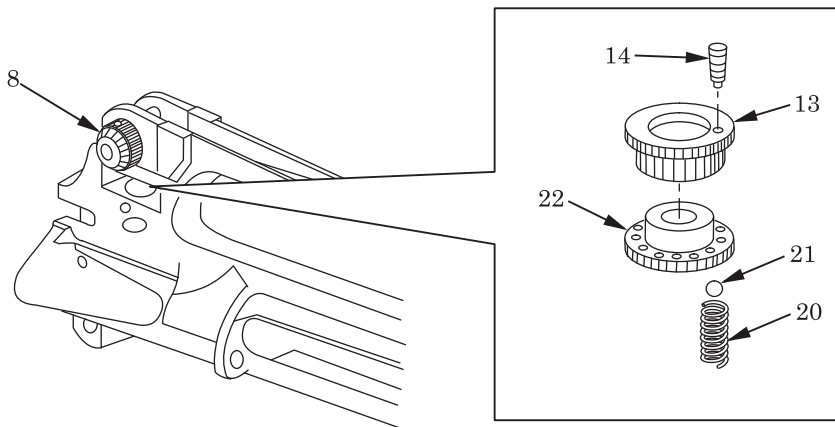
TEST

1. Rotate and test elevation index (Figure 13, Item 3) and windage knob (Figure 13, Item 6) for ease of functioning.
2. Test elevation knob zero as follows:
 - a. Rotate elevation knob (Figure 13, Item 6) counterclockwise until the rear sight assembly (Figure 13, Item 1) is all the way down. If a whole click is not felt as the rear sight assembly stops, the rear sight assembly has bottomed out and will not pivot freely.
 - b. Position elevation knob (Figure 13, Item 6) back slightly to its last whole click so the rear sight base is under tension of ball bearing (Figure 13, Item 4) and helical spring (Figure 13, Item 5). The 300 meter mark should align with mark on left side of upper receiver.

NOTE

The elevation knob should stop on the 300 meter mark $\frac{8}{3}$ on the M16A2 and $\frac{6}{3}$ on the M16A3, M16A4, M4, and M4A1.

- c. If 300 meter mark is not aligned with mark on receiver, slip range scale in the following manner:
 - (1) Position 300 meter mark with mark on receiver.
 - (2) Loosen index screw (Figure 13, Item 2) three turns.
 - (3) Rotate lower portion of elevation knob (Figure 13, Item 6) counterclockwise until it stops (range scale should not have moved). Elevation knob should be positioned on its last whole click.
 - (4) Tighten index screw (Figure 13, Item 2).
 - (5) Check for proper setting.



M16000352

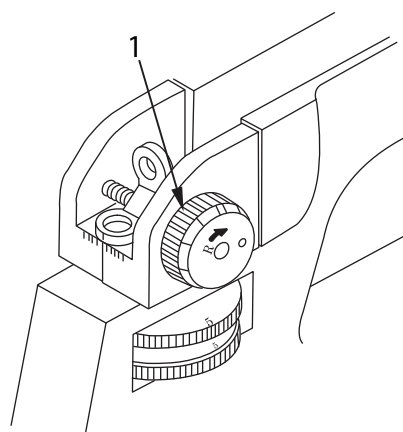
Figure 13. Zeroing Elevation Knob.

TEST - Continued

NOTE

This procedure, when used in conjunction with front sight mechanical zero adjustment, will give an approximate battle site zero to most M16A2 rifles. The following steps can also be used before firing a new or newly assigned rifle. Use the procedure to check rifles stored in preferred packaging during routine inspections. This will help to ensure that soldiers armed with the rifles will have a better chance of hitting an enemy if the rifles must be used before a live fire zero can be made. Whenever possible, zeroing of the rifle should be accomplished using ball ammunition on a 25 meter zeroing target using the "unmarked" small aperture.

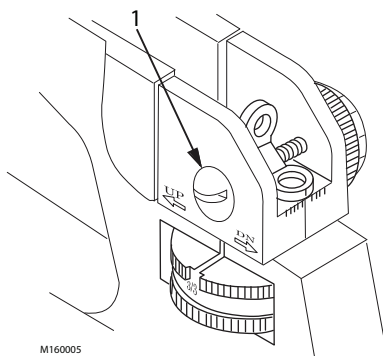
3. AIR FORCE ONLY: Perform mechanical zero procedures as follows:
 - a. Center rear sight by moving windage knob (Figure 14, Item 1) in the appropriate direction.



M1600052

Figure 14. Centering Rear Sight.

- b. Always push in on head of windage screw (Figure 15, Item 1) after making rear sight adjustments.



M160005

Figure 15. Adjustment of Rear Sight.

TEST - Continued

- c. Visually check rear sight (Figure 16, Item 1) to ensure it is centered after making adjustments. Ensure the rear sight is set in the short-range (0-2) position.

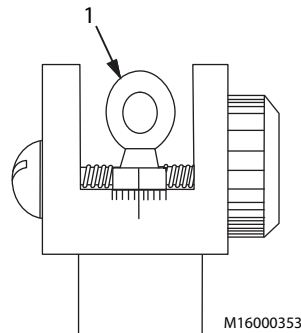


Figure 16. Visual Verification.

4. Assemble rifle (TM 9-1005-319-10).
5. After the rifle is assembled, center rear sight, place at the 300 meter mark, and perform the following check:
 - a. While looking at a light background, obtain good sight alignment.
 - b. If the hole in the rear sight aperture appears oval instead of round, the rear sight base or upper receiver should be replaced. To determine which part requires replacement, replace the rear sight base first. If this does not resolve the problem, replace the upper receiver.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install barrel (WP 0015).
2. Install charging handle (TM 9-1005-319-10).
3. Install bolt and bolt carrier (TM 9-1005-319-10).
4. Assemble upper and lower receivers (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
FORWARD ASSIST ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
File set, hand (WP 0049, Table 1, Item 6)

References

TM 9-1005-319-10

Materials/Parts

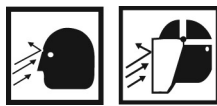
Cleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 12)

Equipment Condition

Weapon cleared (WP 0009)
Forward assist assembly removed (WP 0017)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Drive out spring pin (Figure 1, Item 2).
2. Remove forward assist pawl (Figure 1, Item 3), pawl detent (Figure 1, Item 4), and helical spring (Figure 1, Item 5) from plunger assembly (Figure 1, Item 1).

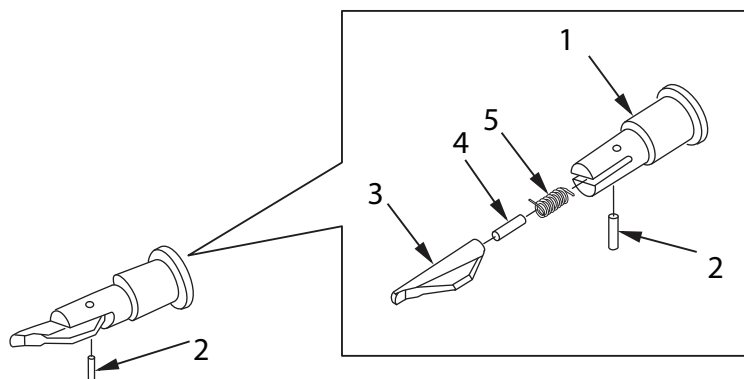


Figure 1. Disassembly of Forward Assist Assembly.

END OF TASK

INSPECTION

1. Inspect forward assist pawl for burrs, chips, and cracks. Minor burrs may be removed using fine files or stones as required. Do not deform forward assist pawl.
2. Inspect pawl detent for burrs and cracks. Minor burrs may be removed using fine files or stones, as required. Do not deform pawl detent.
3. Inspect helical spring for kinks, breaks, and wear.
4. Inspect plunger assembly for wear, burrs, chips, and breaks. Minor burrs may be removed using fine files or stones, as required. Do not deform plunger assembly.
5. Inspect spring pin for wear.

END OF TASK**CLEANING**

Clean all components of the forward assist assembly and ensure they are free from dirt and debris.

END OF TASK**LUBRICATION**

Lubricate helical spring, pawl detent, and forward assist pawl with CLP (WP 0048, Table 1, Item 12) before installation.

END OF TASK**REPLACE**

Replace all defective parts.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. Install helical spring (Figure 2, Item 3), pawl detent (Figure 2, Item 2), and forward assist pawl (Figure 2, Item 1) into plunger assembly (Figure 2, Item 4).

NOTE

Spring pin must be flush or slightly below flush after reassembly.

2. Align holes and install spring pin (Figure 2, Item 5).

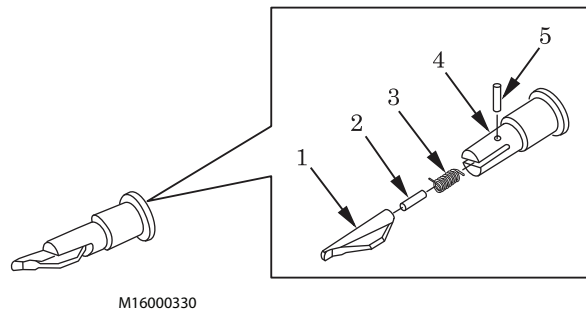
ASSEMBLY - Continued

Figure 2. Assembly of Forward Assist Assembly.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install forward assist (WP 0017).
2. Assemble weapon (TM 9-1005-319-10).
3. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
BARREL ASSEMBLY, REPLACEMENT BARREL AND FRONT SIGHT
ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Test Equipment**

Gun Maintenance Kit (WP 0049, Table 1, Item 17)

Tools and Special Tools

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Modified needle nose pliers (WP 0034, Table 1)
Self-igniting Butane Gas Soldering Iron and Hot Air Tool (WP 0049, Table 1, Item 21)
Vise, machinist's (WP 0049, Table 1, Item 27)

Materials/Parts

Abrasive Cloth (WP 0048, Table 1, Item 18)
Carbon Removing Compound (WP 0048, Table 1, Item 9)
Dry Cleaning Solvent (WP 0048, Table 1, Item 46)

Materials/Parts (cont.)

Gloves (WP 0048, Table 1, Item 24)
Solid Film Lubricant (SFL) (WP 0048, Table 1, Item 28)
Rivet (WP 0050, Table 1, Item 2) Qty: 1
Spring pin (WP 0050, Table 1, Item 9) Qty: 2

Personnel Required

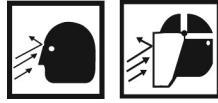
SMALL ARMS/ARTILLERY REPAIRER 91F

References

TM 9-1005-319-10

Equipment Condition

Weapon cleared (WP 0009)
Barrel removed (WP 0015)

DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

Remove front sight post only if parts are damaged.

1. Remove front sight post (Figure 1, Item 1) by turning counterclockwise from front sight assembly (Figure 1, Item 2).

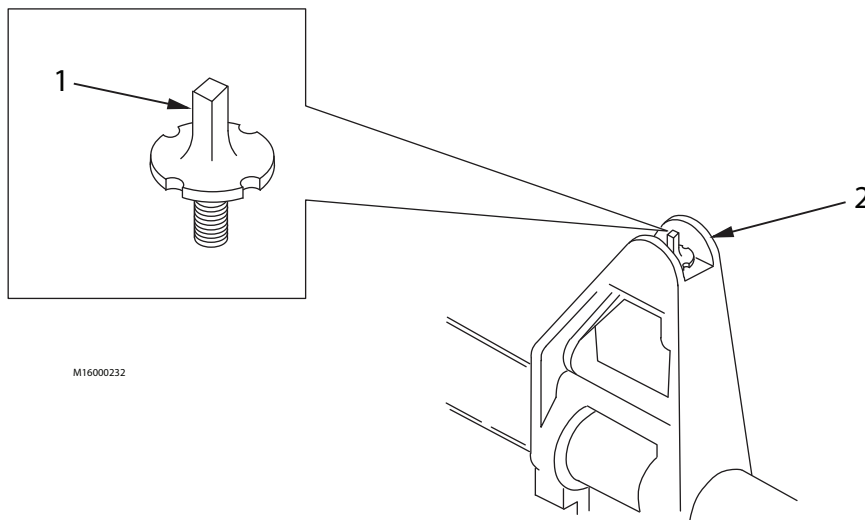


Figure 1. Removal of Front Sight Post.

2. Remove front sight detent (Figure 2, Item 1) and helical spring (Figure 2, Item 2).

DISASSEMBLY - Continued

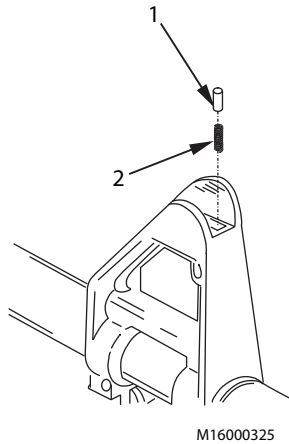


Figure 2. Removal of Front Sight Detent and Helical Spring.

NOTE

Disassemble small sling swivel only if repair is necessary.

3. Knock out tubular rivet (Figure 3, Item 1) and remove small sling swivel (Figure 3, Item 2) from barrel assembly (Figure 3, Item 3). Discard tubular rivet.

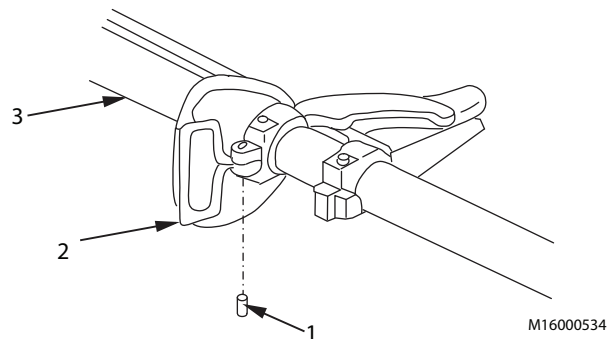


Figure 3. Removal of Front Sight Detent and Spring.

DISASSEMBLY - Continued**NOTE**

Disassemble small sling swivel only if repair is necessary.

4. **CARBINE ONLY**
Remove two spring pins (Figure 4, Item 1) from swivel mount. Discard spring pins.

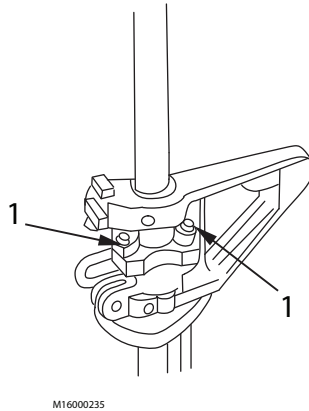


Figure 4. Removal of Spring Pins (Carbine).

5. Lift locking bar (Figure 5, Item 1) up and out of swivel mount (Figure 5, Item 2).

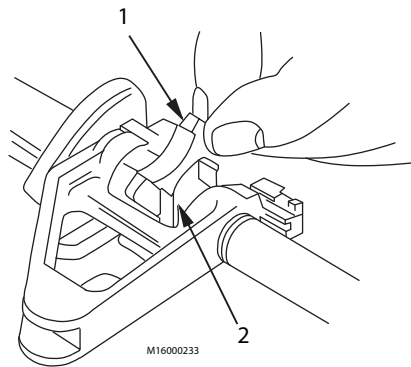


Figure 5. Removal of Locking Bar (Carbine).

6. Remove swivel mount (Figure 6, Item 1) from barrel and barrel extension assembly (Figure 6, Item 2).

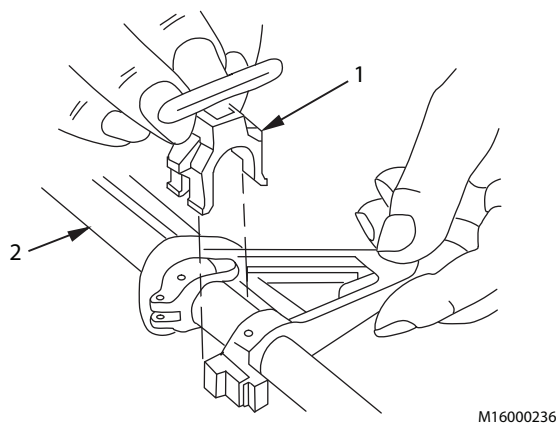
DISASSEMBLY - Continued

Figure 6. Removal of Swivel Mount (Carbine).

7. Remove tubular rivet (Figure 7, Item 2). Separate small sling swivel (Figure 7, Item 1) from swivel mount (Figure 7, Item 3).

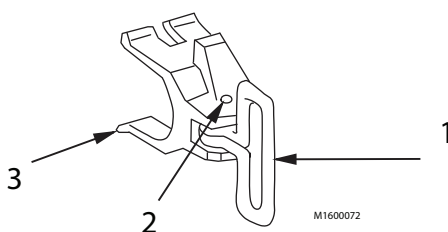


Figure 7. Disassembly of Swivel Mount (Carbine).

END OF TASK**INSPECTION**

1. Inspect front sight post, front sight detent, and helical spring for damage.
2. Inspect front sight assembly for chips, breaks, and cracks.
3. Inspect front sight guards for bends. If front sight has bends, repair.

END OF TASK**REPAIR**

1. Straighten bent front sight guards as follows:

NOTE

The sight post and plunger may be reused unless damaged.

- a. Remove front sight post, detent, and helical spring (see DISASSEMBLY).

REPAIR - Continued**CAUTION**

Use copper or brass caps (jaw inserts) on bench vise to prevent damage to front sight base during clamping.

- b. Place front sight base in a bench vise (Figure 8, Item 4).

CAUTION

Remove spring before heating. Heat will damage spring.

- c. Heat front sight guards (Figure 8, Item 1) and bend with pliers (Figure 8, Item 2). The front sight guards should be put back as nearly as possible to the original position. Allow front sight housing (Figure 8, Item 3) to air cool.

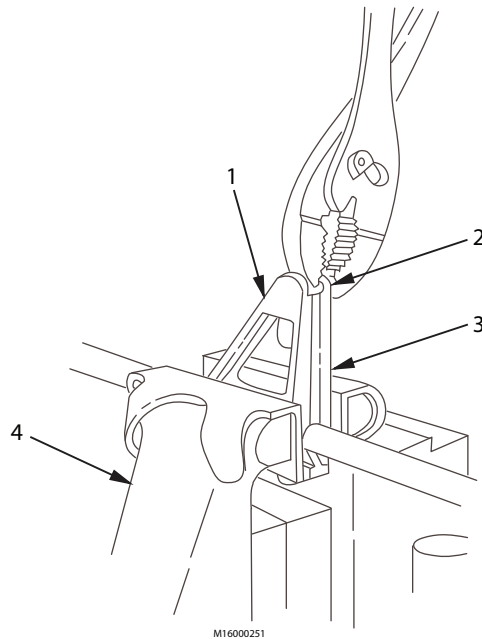


Figure 8. Repair of Front Sight Guards.

REPAIR - Continued**WARNING****DRY CLEANING SOLVENT**

- d. Roughen any damaged surface on front sight guards with abrasive cloth (WP 0048, Table 1, Item 18) and clean with dry cleaning solvent (WP 0048, Table 1, Item 46).

WARNING**SOLID FILM LUBRICANT****CAUTION**

Do not allow SFL to flow into front sight post threaded recess.

- e. Apply SFL (WP 0048, Table 1, Item 28) to cover the damaged finish.
 - f. If front sight guards cannot be straightened utilizing these procedures replace the barrel assembly.
2. Slightly bent barrels may be straightened as follows:
- a. Check straightness using straightness gauge. If barrel fails straightness test and the gauge remains in barrel in the area of the front sight assembly perform step b to determine if it may be straightened.

NOTE

If gauge does not pass through barrel when it is flexed, replace barrel assembly.

- b. With gauge remaining in bore, hold weapon in vertical position with muzzle pointing down. Ensure that if/when gauge passes through barrel it will not be damaged. Using hand pressure ONLY, flex portion of barrel between front sight assembly and compensator in all four directions (left, right, forward, and back). If barrel is only slightly bent, gauge will drop through when barrel is flexed in one of these directions. Note the direction in which allowed gauge to drop through the barrel.
- c. Place barrel in vise using appropriate protective jaws. Clamp barrel between front sight assembly and compensator approximately 1 in. (2.54 cm) from front sight assembly. The barrel assembly should be in a horizontal position with the side noted in previous step toward repairer.

CAUTION

Do not apply pressure to receiver.

- d. Grasp barrel near receiver so that when force is applied the barrel will flex in same direction as noted in step b.
- e. Attempt to straighten barrel by pushing or pulling against the bend in a single motion.
- f. Remove barrel from vise and recheck straightness (step a).
- g. If gauge still will not pass through barrel, perform step b to determine direction of bend. If barrel is still bent in same direction as before, perform steps c through f using slightly more force. If barrel is now bent in the opposite direction, replace barrel assembly.

REPAIR - Continued

- h. If gauge passes freely through barrel, barrel shall be considered straight and continue in service.

END OF TASK**REPLACE**

Replace all unserviceable parts.

END OF TASK**CLEANING**

Remove all dirt and debris from front sight assembly including recess that contains the front sight post spring and detent.

END OF TASK**LUBRICATE**

Lightly lubricate all items.

END OF TASK**ASSEMBLY****NOTE**

- Use a center punch and hammer to spread and flare hollow head of tubular rivet.
- Only perform steps 1-5 if small sling swivel was disassembled/repaired.

1. Install sling swivel (Figure 9, Item 1) and install new tubular rivet (Figure 9, Item 2).

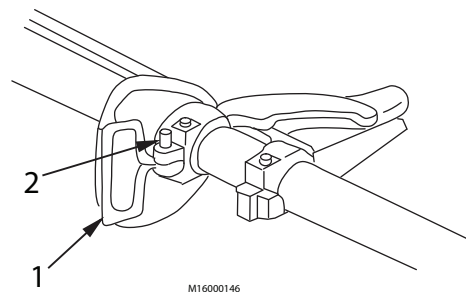


Figure 9. Installation of Small Sling Swivel (Rifle).

2. CARBINE ONLY

Install small sling swivel (Figure 10, Item 1) to swivel mount (Figure 10, Item 3) with new tubular rivet (Figure 10, Item 2).

ASSEMBLY - Continued

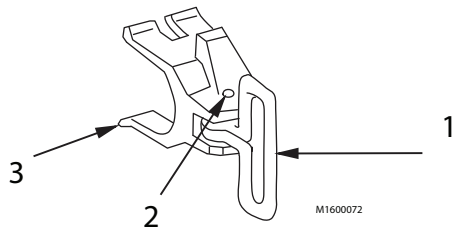


Figure 10. Installation of Small Sling Swivel (Carbine).

ASSEMBLY - Continued**NOTE**

It is recommended that the swivel mount be placed on the left side of carbine for right handed operators and right side for left handed operators. This will keep the sling out of the way when carbine is used. In addition, it shall be oriented so the integral stop normally positioned towards muzzle is to the rear; this change in orientation allows swivel to fold flat towards muzzle so side sling adapter does not interfere with installation of rail covers, forward handgrip or other accessories that require installation from the end of rail.

3. Install swivel mount (Figure 11, Item 1) onto barrel assembly (Figure 11, Item 2).

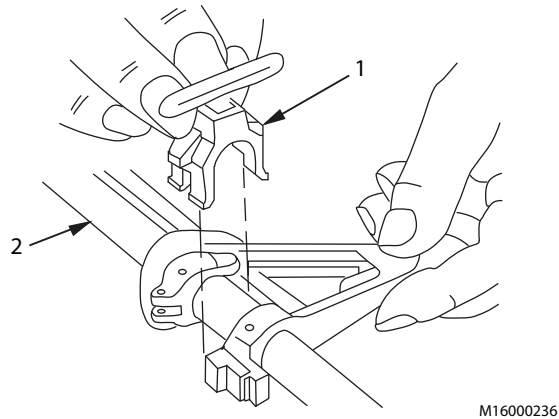


Figure 11. Installation of Sling Swivel Mount.

ASSEMBLY - Continued

4. Place swivel locking bar (Figure 12, Item 1) in swivel mount (Figure 12, Item 2).

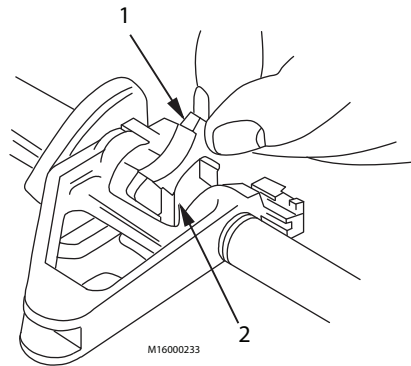


Figure 12. Installation of Swivel Locking Bar.

5. Install two new spring pins (Figure 13, Item 1) into swivel mount (Figure 13, Item 2).

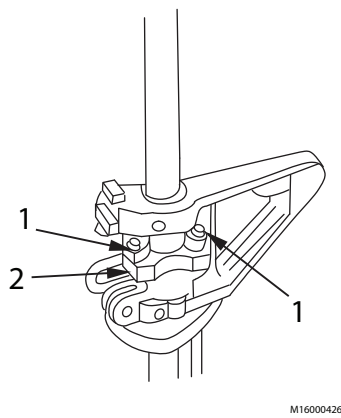


Figure 13. Installation of Sling Swivel Mount.

ASSEMBLY - Continued

6. ALL WEAPONS

Position helical spring (Figure 14, Item 2) and front sight detent (Figure 14, Item 1) into front sight post recess (Figure 14, Item 3).

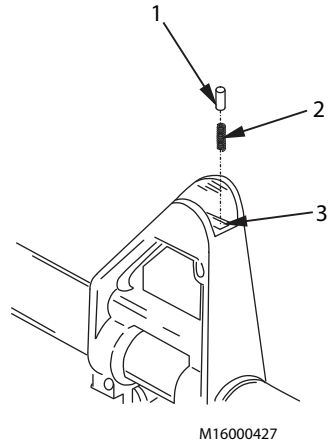
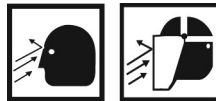


Figure 14. Installation of Front Sight Detent and Spring.

WARNING



Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

7. Install front sight post (Figure 15, Item 1) by turning clockwise until the front sight post base is flush with or slightly below front sight frame (Figure 15, Item 2).

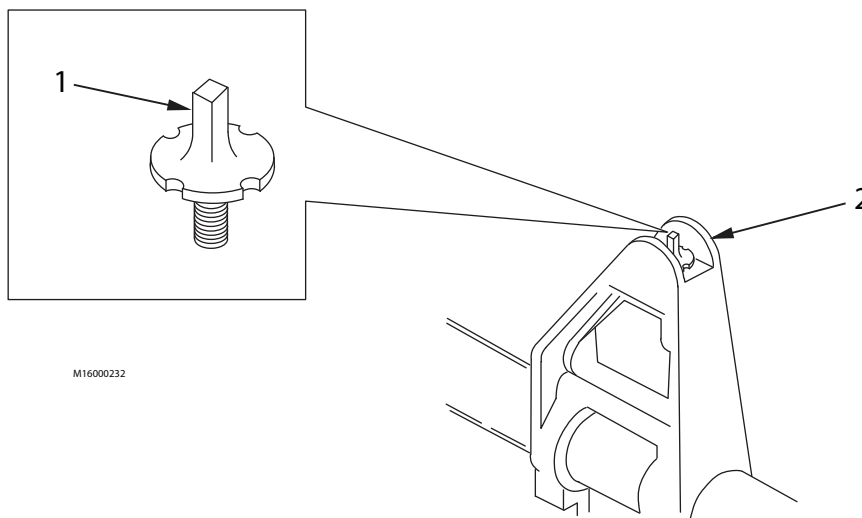


Figure 15. Installation of Front Sight Post.

ASSEMBLY - Continued**NOTE**

This procedure, when used in conjunction with rear sight mechanical zero adjustment, will give an approximate battle sight zero to most M16A2 rifles. The following steps can also be used before firing a new or newly assigned rifle. Use the procedures to check rifles stored in preferred packaging during routine inspections. This will help ensure soldiers armed with the rifles will have a better chance of hitting an enemy if the rifles must be used before a live fire zero can be made. Whenever possible, zeroing of rifle should be accomplished using ball ammunition with a 25 meter zeroing target using "L" aperture.

8. AIR FORCE ONLY

Perform mechanical zero procedures as follows:

- a. Mark a piece of plastic card stock or rigid paper with lines from 1mm to 5mm in 1mm increments. Set the card on front sight frame and check height of top of front sight post.

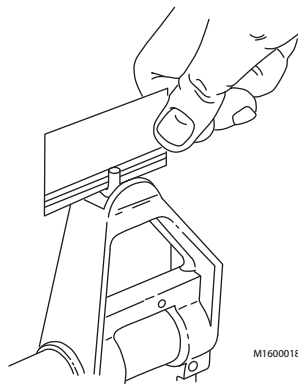


Figure 16. Measurement of Height of Front Sight Post.

- b. Adjust front sight using front sight post tool so top of front sight post is 5mm above machined surfaces of front sight frame.

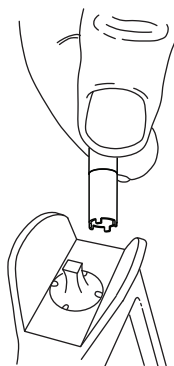


Figure 17. Adjustment of Front Sight Post.

ASSEMBLY - Continued

- c. Visually check front sight post top height by using the marked plastic or paper card. Card must sit level on machined surfaces of front sight frame to obtain an accurate reading.

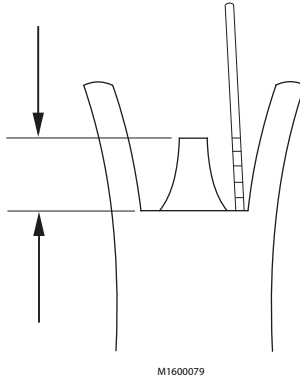


Figure 18. Final Measurement of Height.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install barrel (WP 0015).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
BARREL STOP ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

References

TM 9-1005-319-10

Materials/PartsHelical compression spring (WP 0050,
Table 1, Item 5) Qty: 2**Equipment Condition**Weapon cleared (WP 0009)
Handguards removed (WP 0015)**Personnel Required**

SMALL ARMS/ARTILLERY REPAIRER 91F

REMOVAL

1. Slide barrel stop towards upper receiver until it is over the thin portion of barrel.

NOTE

Do not contact gas tube when performing this step.

2. Rotate barrel stop until at 6 o'clock position.
3. Remove barrel stop (Figure 1, Item 1) from barrel assembly (Figure 1, Item 2).

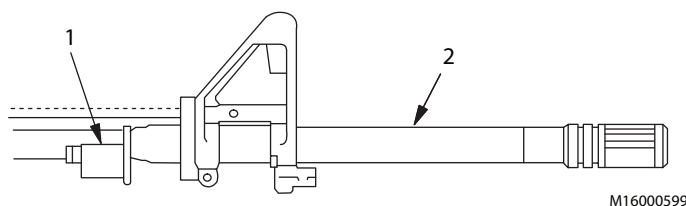


Figure 1. Removal of Barrel Stop.

END OF TASK**INSPECTION**

1. Inspect barrel stop for any cracks.
2. Inspect helical compression springs for wear or damage.

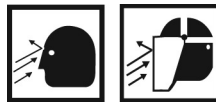
END OF TASK

CLEANING

Remove all dirt and debris.

END OF TASK**LUBRICATION**

Lightly lubricate barrel stop assembly.

END OF TASK**DISASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

Disassembly of barrel stop assembly should only be accomplished when helical compression springs are damaged.

Remove two helical compression springs (Figure 2, Item 2) from barrel stop (Figure 2, Item 1). Discard helical compression springs.

END OF TASK**REPLACE****NOTE**

The barrel stop for the M16A4 rifle barrel is provided as an integral component of rifle adapter rail. Please note that rifle adapter rail includes this item. The purpose of installing barrel stop to rifle is to provide a shoulder or "stop" that services as mounting point for M203A2 quick release bracket. Once stop and adapter rail are installed M203A2 grenade launchers can be mounted to the M16A4 rifle. All M16A4 rifles shall have this barrel stop as integral component of adapter rail system. Failure to install or maintain barrel stop will prevent M203A2 launcher from being mounted to M16A4.

If removed, replace helical compression springs.

END OF TASK

ASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

Install two new helical compression springs (Figure 2, Item 2) to barrel stop (Figure 2, Item 1) turning clockwise.

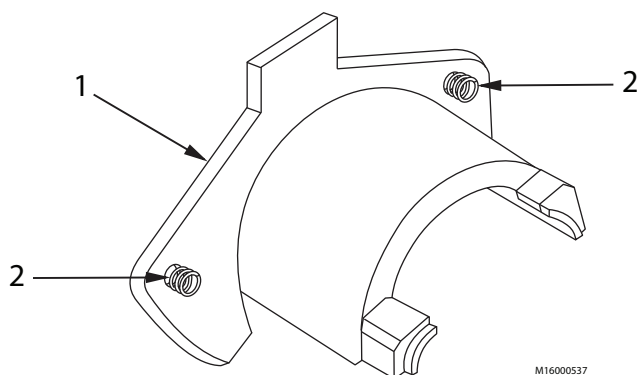


Figure 2. Disassembly and Assembly of Barrel Stop.

END OF TASK**INSTALLATION**

1. Install barrel stop (Figure 3, Item 1) by placing over thin section of barrel (Figure 3, Item 3) from 6 o'clock position and avoid contact with gas tube (Figure 3, Item 2).
2. Rotate barrel stop (Figure 3, Item 1) so opening points towards gas tube (Figure 3, Item 2).
3. Slide barrel stop (Figure 3, Item 1) forward until flat vertical portion fits into triangular side of forward handguard cap (Figure 3, Item 4) with springs to rear.

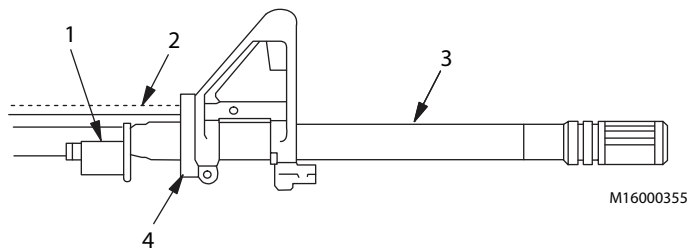
INSTALLATION - Continued

Figure 3. Installation of Barrel Stop.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install handguards (WP 0015).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
LOWER RECEIVER AND BUTTSTOCK ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Pivot pin installation tool (WP 0034, Table 1)
Pivot pin removal tool (WP 0034, Table 1)
Slave pin (WP 0034, Table 1)
Vise machinist's (WP 0049, Table 1, Item 27)

Materials/Parts

Cleaner, Lubricant, and Preservative (CLP) Qty: 1
(WP 0048, Table 1, Item 12)
Lock washer Qty: 1 (WP 0050, Table 1, Item 11)
Machine screw Qty: 1 (WP 0050, Table 1, Item 4)
Screw, cap, hexagon head Qty: 1 (WP 0050,
Table 1, Item 8)
Solid Film Lubricant (SFL) Qty: 1 (WP 0048,
Table 1, Item 28)

Personnel Required

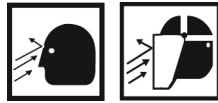
SMALL ARMS/ARTILLERY REPAIRER 91F

References

MIM 16-013
NAVSEA instruction 8370.2
TO 11W3-5-5-24
WP 0015
WP 0025

Equipment Condition

Weapon cleared (WP 0009)
Upper receiver and barrel assembly removed (TM
9-1005-319-10)

DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

If selector lever does not have an "F" on it and personal replace any of the internal fire control components in the lower receiver it is mandatory to replace the selector lever.

1. Remove machine screw (Figure 1, Item 2) and lock washer (Figure 1, Item 3) from pistol grip (Figure 1, Item 1). Discard lock washer.
2. Carefully remove pistol grip (Figure 1, Item 1). Catch helical spring (Figure 1, Item 5) and safety detent (Figure 1, Item 4) to prevent loss.

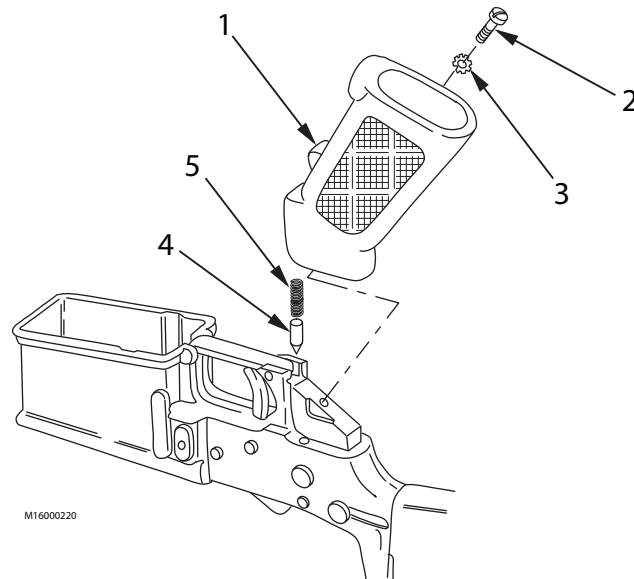


Figure 1. Removal of Pistol Grip.

NOTE

If machine screw is removed, it must be discarded and replaced with a new one.

3. **RIFLE ONLY**
Remove machine screw (Figure 2, Item 1) from buttstock (Figure 2, Item 2). Discard machine screw.

DISASSEMBLY - Continued

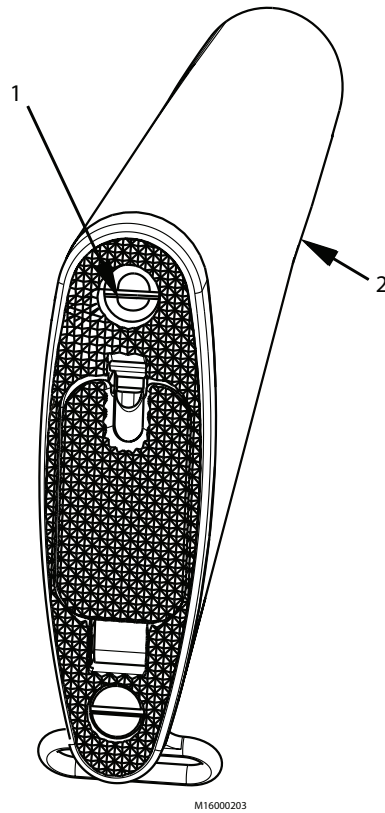


Figure 2. Removal of Machine Screw.

4. Remove buttstock assembly (Figure 3, Item 1) carefully and catch helical spring (Figure 3, Item 5), takedown pin detent (Figure 3, Item 4), takedown pin (Figure 3, Item 3), and stepped spacer (Figure 3, Item 2) to prevent loss.

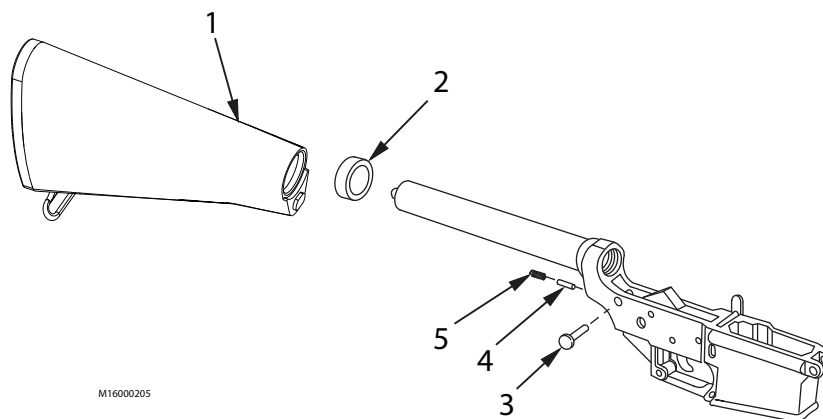


Figure 3. Removal of Buttstock Assembly (Rifle).

DISASSEMBLY - Continued**5. CARBINE ONLY**

Fully extend buttstock assembly (Figure 4, Item 1).

6. Grasp lock release lever (Figure 4, Item 4) in area of retaining nut (Figure 4, Item 3), pull downward, and slide buttstock assembly (Figure 4, Item 1) to the rear to separate from lower receiver extension (Figure 4, Item 2).

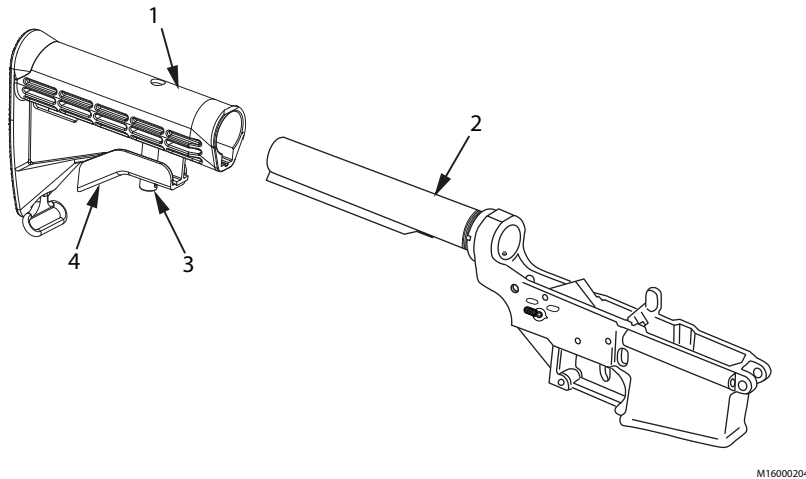


Figure 4. Removal of Buttstock Assembly (Carbine).

NOTE

AIR FORCE ONLY: Lower receivers without a pivot pin detent are acceptable for use by Air Force personnel for all mission requirements worldwide. Refer to Air Force TO 11W3-5-5-24 for National Stock Numbers for replacement pivot pins.

7. ALL WEAPONS

Insert fabricated pivot pin removal tool to compress pivot pin detent. Turn pivot pin (Figure 5, Item 1) a quarter turn. Remove tool and pivot pin.

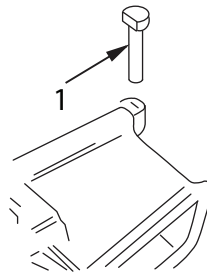


Figure 5. Removal of Pivot Pin.

8. Catch pivot pin detent (Figure 6, Item 2) and helical spring (Figure 6, Item 1) to prevent loss.

DISASSEMBLY - Continued

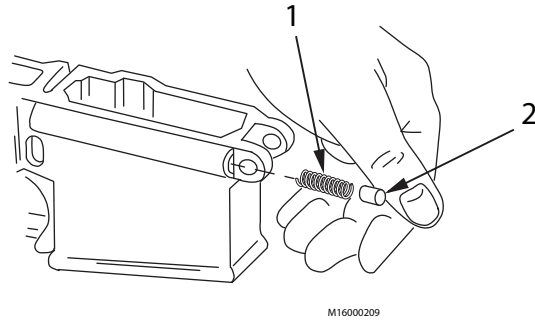


Figure 6. Removal of Detent and Helical Spring.

DISASSEMBLY - Continued**NOTE**

Make sure hammer is cocked and selector lever is set on SAFE or SEMI before removing buffer assembly.

9. Press buffer assembly (Figure 7, Item 2) in about 1/4 in. (0.635 cm). Depress buffer retainer (Figure 7, Item 3) and release buffer assembly and action spring (Figure 7, Item 1). Remove buffer assembly and action spring.

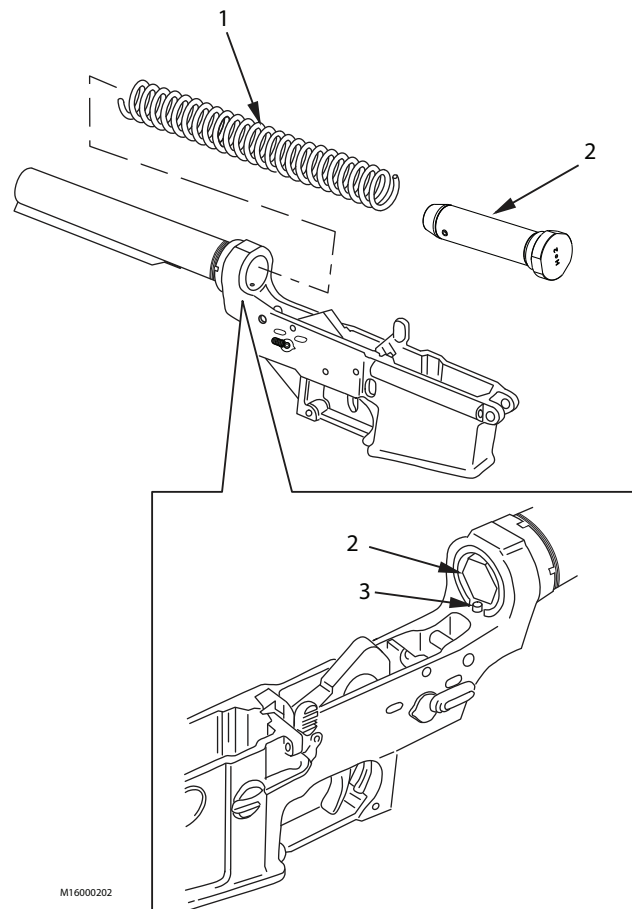


Figure 7. Removal of Buffer Assembly and Action Spring.

10. Remove spring pin (Figure 8, Item 1) from lower receiver (Figure 8, Item 5).
11. Remove bolt catch (Figure 8, Item 2), bolt catch plunger (Figure 8, Item 4), and bolt catch spring (Figure 8, Item 3) from lower receiver (Figure 8, Item 5).

DISASSEMBLY - Continued

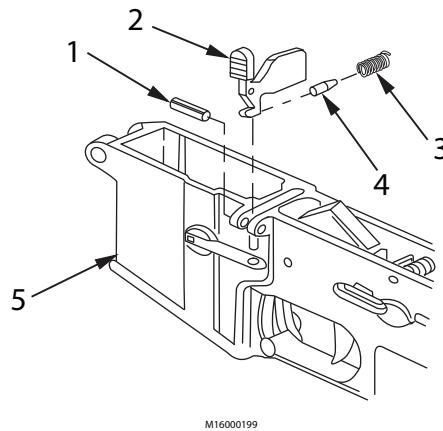


Figure 8. Removal of Bolt Catch.

12. Press magazine catch button (Figure 9, Item 2) and turn magazine catch (Figure 9, Item 3) counterclockwise to unscrew and remove.
13. Remove magazine catch button (Figure 9, Item 2) and magazine catch spring (Figure 9, Item 1) from lower receiver (Figure 9, Item 4).

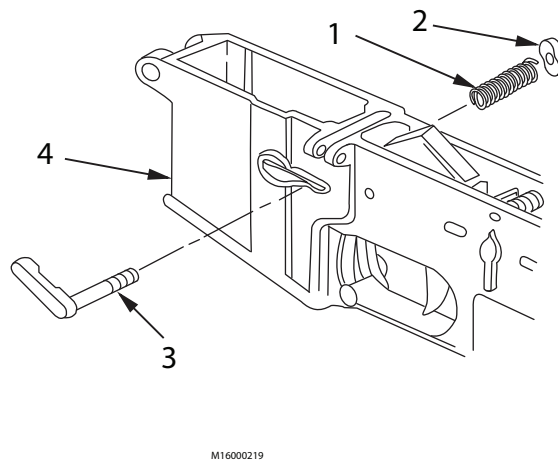


Figure 9. Removal of Magazine Catch.

DISASSEMBLY - Continued

14. Remove cap screw (Figure 10, Item 1) and right side selector lever (Figure 10, Item 2) from lower receiver and receiver extension assembly (Figure 10, Item 3). Discard cap screw.

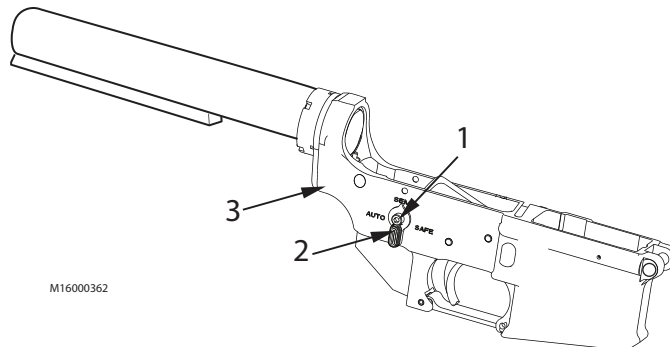


Figure 10. Ambidextrous Selector Removal.

15. Remove automatic sear pin (Figure 11, Item 2) from lower receiver and receiver extension assembly (Figure 11, Item 4).

NOTE

To remove automatic sear, selector lever (if installed) must be positioned to BURST/AUTO.

16. Remove automatic sear (Figure 11, Item 1) and main selector lever (Figure 11, Item 3) from lower receiver (Figure 11, Item 4).

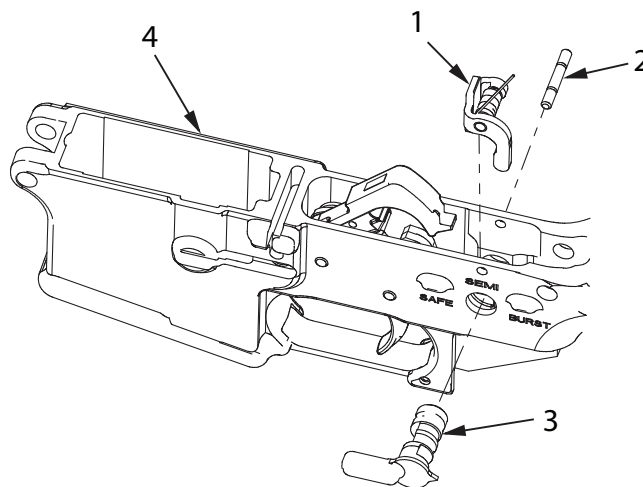


Figure 11. Removal of Sear and Selector Lever.

NOTE

To remove hammer assembly, position selector lever (if installed) to SEMI position. Ensure hammer is in forward position.

DISASSEMBLY - Continued

17. Remove hammer pin (Figure 12, Item 2) from lower receiver and receiver extension assembly (Figure 12, Item 3).
18. Remove hammer assembly (Figure 12, Item 1).

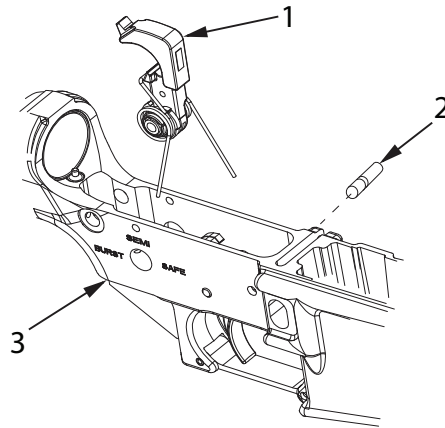


Figure 12. Removal of Hammer Assembly.

DISASSEMBLY - Continued**NOTE**

Use of fabricated slave pin will allow removal of the following parts as a unit.

19. Remove trigger pin (Figure 13, Item 4) by pushing from the left side of lower receiver and receiver extension assembly (Figure 13, Item 3) with fabricated slave pin (Figure 13, Item 8).
20. **M16A2, M16A4, and M4 ONLY**
Remove semiautomatic disconnecter (Figure 13, Item 1), lock release lever (Figure 13, Item 2), and trigger assembly (Figure 13, Item 9).
21. **M16A3 and M4A1 ONLY**
Remove disconnecter (Figure 13, Item 7) and trigger assembly (Figure 13, Item 5) with disconnecter spring (Figure 13, Item 6) from lower receiver and receiver extension assembly (Figure 13, Item 3).

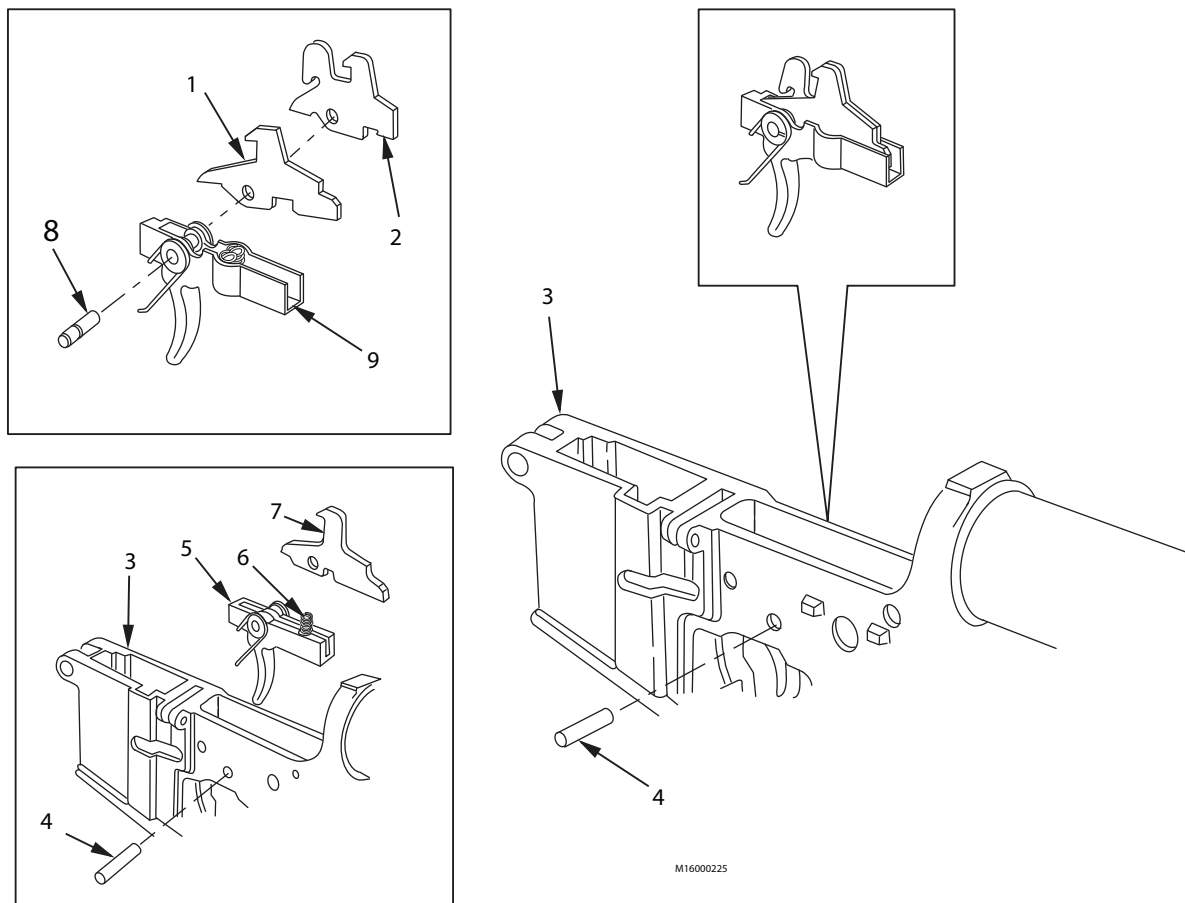


Figure 13. Removal of Trigger Assembly.

END OF TASK**INSPECTION**

1. Inspect buffer assembly (Figure 14, Item 1) for cracks or damage. The buffer assembly has a hole with pin installed which protrudes equally on each side approximately 1/32 in. (0.08 cm).

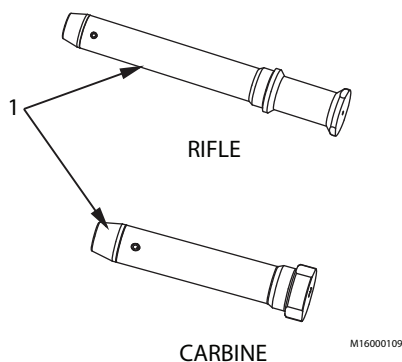
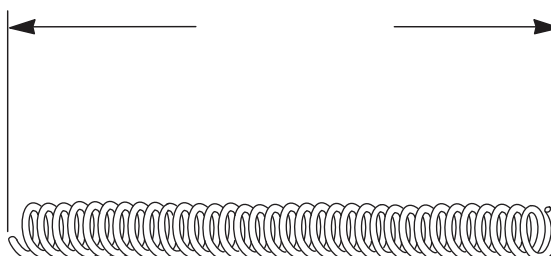
INSPECTION - Continued

Figure 14. Inspection of Buffer Assembly.

NOTE

- Do not attempt to adjust the length of action spring by stretching.
 - Do not interchange action springs from one weapon to another. Doing so may result in weapon malfunction.
 - RIFLE ONLY: The free length must be no longer than 13 1/2 in. (34.29 cm).
 - CARBINE ONLY: The free length must be no longer than 11 1/4 in. (25.8 cm).
 - If measurement is longer than maximum listed length, replace.
2. Check free length of action spring.



M16000107

Figure 15. Inspection of Free Length of Action Spring.

3. Inspect spring for cracks, kinks, or broken action spring.

INSPECTION - Continued**NOTE**

- ARMY ONLY: If serial number is hard to read, repair (WP 0025).
 - AIR FORCE ONLY: If serial number is hard to read, evacuate to depot maintenance.
4. Inspect lower receiver and receiver extension assembly (Figure 16, Item 1) (without further disassembly) for legibility of serial number.

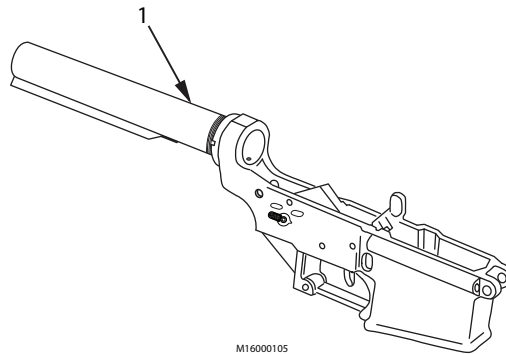


Figure 16. Inspection of Serial Number.

5. Inspect lower receiver for corrosion in lower receiver lobes of pivot area or hinge pin area. If extensive corrosion appears in these areas, the receiver cannot be repaired and weapon should be turned in for replacement. Lower receiver extensions with shiny or corroded surfaces may be repaired. Lower receiver extensions with thin walls or holes must be replaced.

INSPECTION - Continued

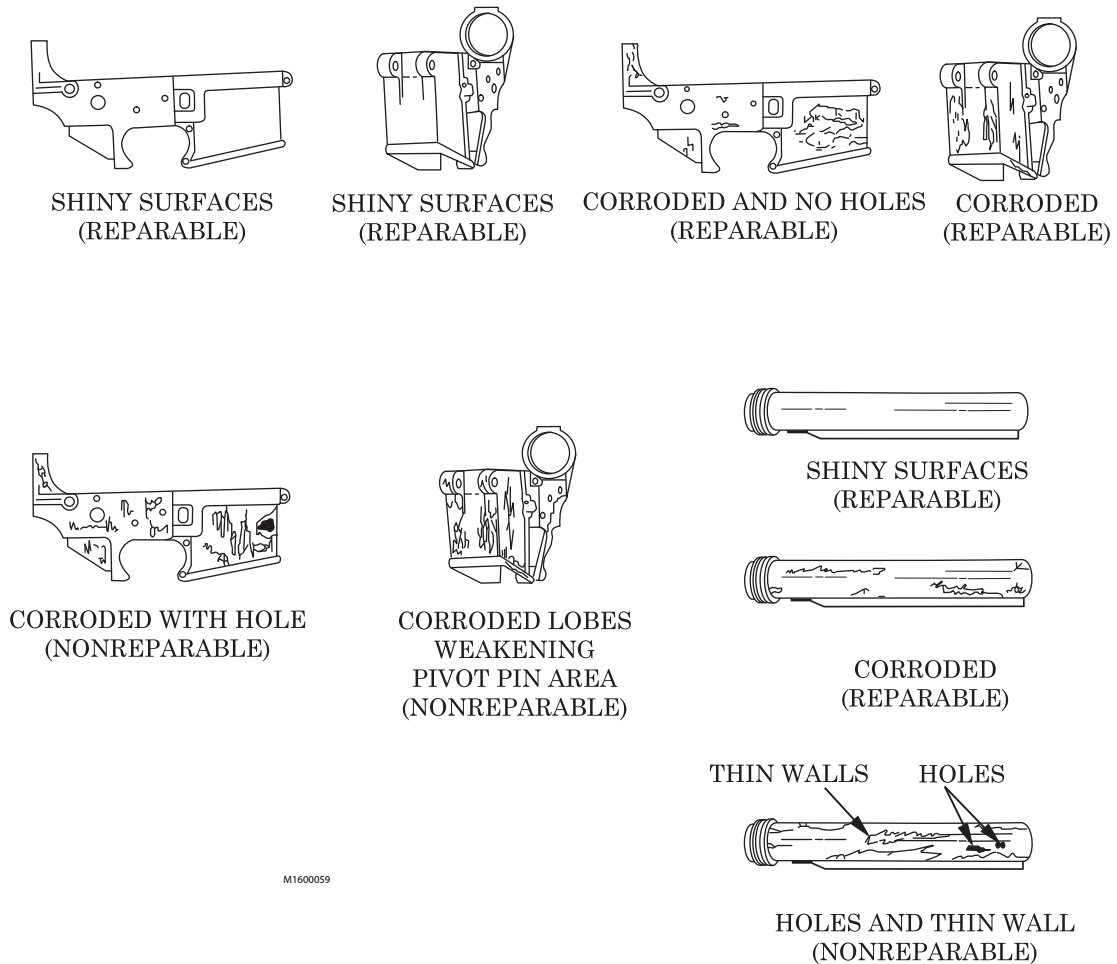


Figure 17. Condemnation Criteria.

NOTE

- If a weapon's lower receiver is missing one third or more of its exterior protective finish, resulting in an unprotected, light-reflecting surface, it is candidate for overhaul. This missing finish will be considered a shortcoming. This shortcoming requires action to obtain a replacement weapon. Evacuate the original weapon to depot for overhaul, then order a replacement.
 - AIR FORCE ONLY: Units will have to contact AF item manager for disposition instructions prior to shipment of weapon to depot or requesting replacement weapon.
 - NAVY ONLY: Refer to NAVSEA instruction 8370.2 small arms and weapons management policy and guidance, and maintenance requirements cards.
6. Inspect for missing or damaged parts. Inspect lower receiver for shiny spots. Touch up with SFL as required.

INSPECTION - Continued

7. Inspect takedown pin, takedown pin detent, and helical spring for cracks, bends, or damage.

END OF TASK**CLEANING**

Clean and remove carbon deposits from all items.

END OF TASK**LUBRICATION**

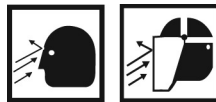
Lightly lubricate all metal components.

END OF TASK**REPAIR**

Repair shiny or corroded surfaces (WP 0015).

END OF TASK**REPLACE**

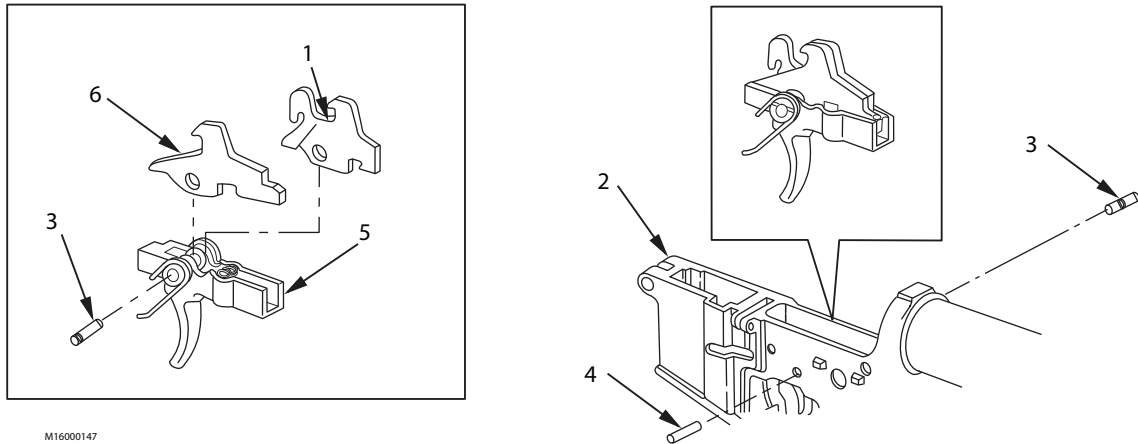
Replace all defective parts of lower receiver and buttstock assembly.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed/installed.
Wear safety goggles. Failure to comply may result in injury to personnel.

1. Assemble semiautomatic disconnecter (Figure 18, Item 6), lock release lever (Figure 18, Item 1), and trigger assembly (Figure 18, Item 5). Install as a unit in lower receiver and receiver extension assembly (Figure 18, Item 2) using slave pin (Figure 18, Item 3).
2. Install trigger pin (Figure 18, Item 4) until flush with lower receiver and receiver extension assembly. Slave pin (Figure 18, Item 3) will be pushed out.

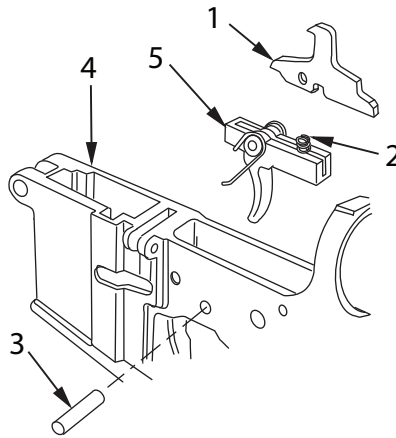
ASSEMBLY - Continued



M16000147

Figure 18. Installation of Trigger Assembly (M16A2, M16A4, and M4).

3. Install trigger assembly (Figure 19, Item 5), disconnecter spring (Figure 19, Item 2), and disconnecter (Figure 19, Item 1) into lower receiver and receiver extension assembly (Figure 19, Item 4).
4. Install trigger pin (Figure 19, Item 3). Push in until flush.



M16000148

Figure 19. Installation of Trigger Assembly (M16A3 and M4A1).

ASSEMBLY - Continued**NOTE**

Ends of hammer spring are installed to rear of trigger pin, resting in the annular groove on upper surface of trigger pin.

5. Install hammer assembly (Figure 20, Item 3) into lower receiver (Figure 20, Item 2).
6. Install hammer pin (Figure 20, Item 1) into lower receiver (Figure 20, Item 2). Push hammer pin in until flush with lower receiver.

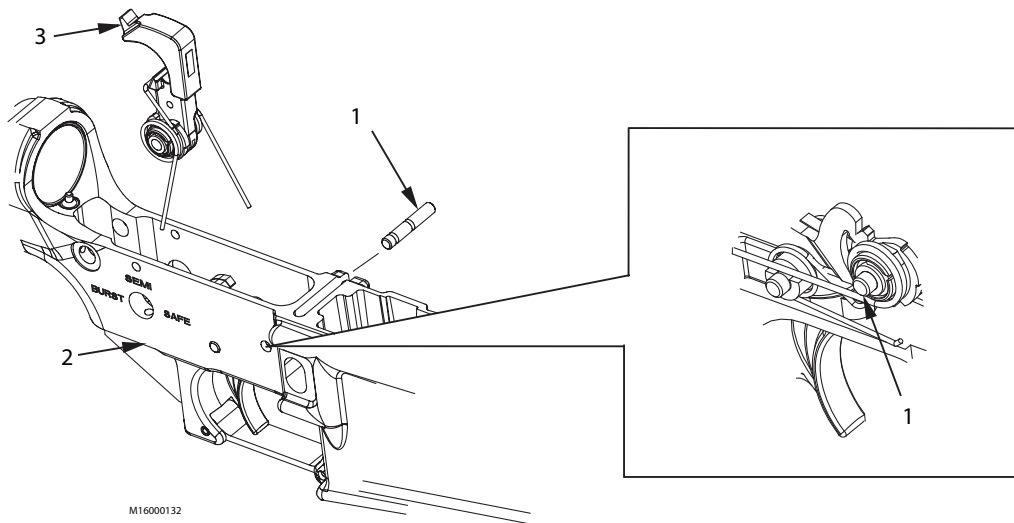


Figure 20. Installation of Hammer Assembly.

NOTE

- Hammer assembly should be cocked prior to installing the selector lever.
 - Selector lever (if installed) must be positioned to BURST. Long leg of automatic sear spring must rest on top of selector lever.
 - If selector lever does not have an "F" on it and personal replace any of the internal fire control components in the lower receiver it is mandatory to replace the selector lever.
7. Install main selector lever (Figure 21, Item 4) and automatic sear (Figure 21, Item 2) into lower receiver and receiver extension assembly (Figure 21, Item 1).
 8. Install automatic sear pin (Figure 21, Item 3) into right side of lower receiver and receiver extension assembly (Figure 21, Item 1). Push in until flush.

ASSEMBLY - Continued

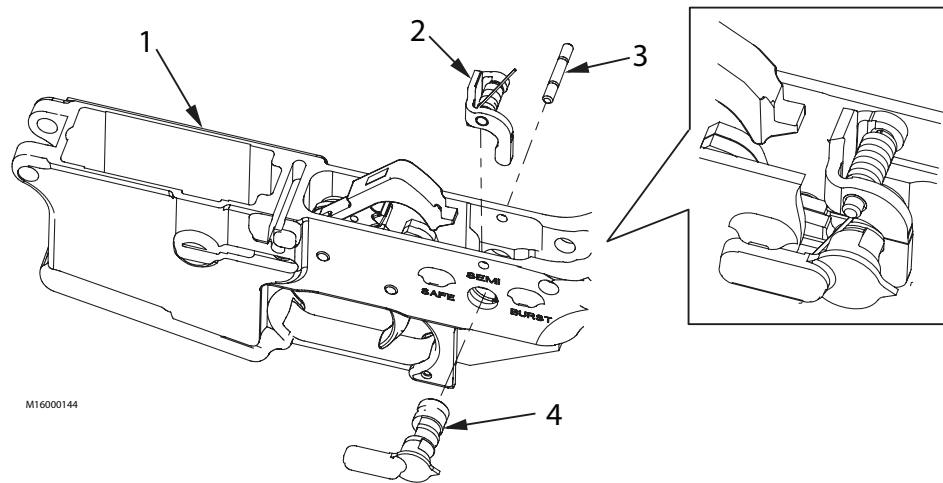


Figure 21. Installation of Sear and Selector Lever.

9. Install right side selector lever (Figure 22, Item 2) and new cap screw (Figure 22, Item 1) into lower receiver and receiver extension assembly (Figure 22, Item 3).

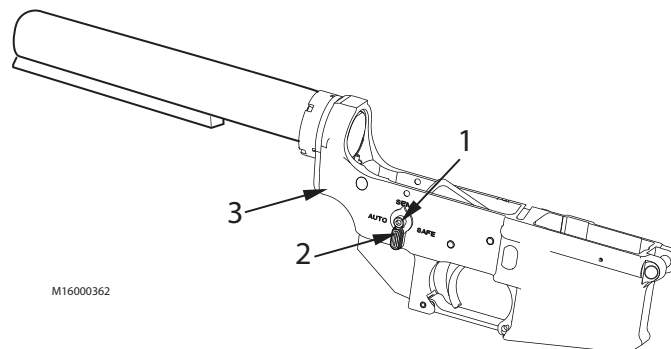
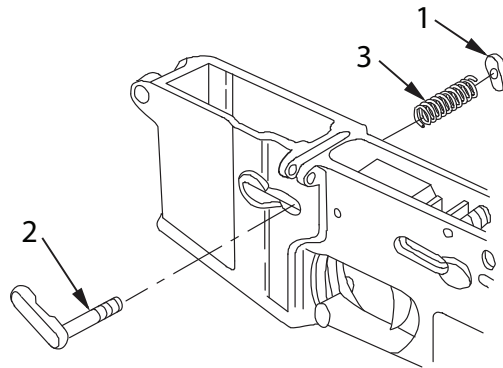


Figure 22. Installation of Ambidextrous Selector.

ASSEMBLY - Continued

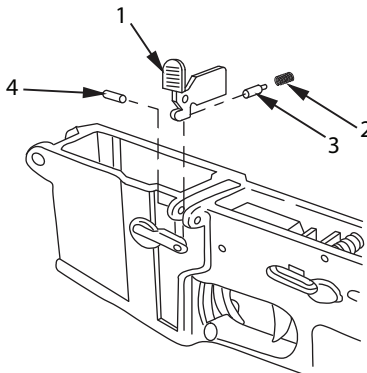
10. Install magazine catch spring (Figure 23, Item 3) and magazine catch button (Figure 23, Item 1).
11. Install magazine catch (Figure 23, Item 2). Push on magazine catch button (Figure 23, Item 1) and turn magazine catch clockwise until threaded end of magazine catch is flush with head of magazine catch button.



M16000138

Figure 23. Installation of Magazine Catch.

12. Install bolt catch spring (Figure 24, Item 2), bolt catch plunger (Figure 24, Item 3), and bolt catch (Figure 24, Item 1).
13. Secure by installing spring pin (Figure 24, Item 4).



M1600034

Figure 24. Installation of Bolt Catch.

NOTE

Make sure hammer is cocked and selector lever is positioned to SAFE or SEMI before installing buffer assembly.

14. Press inward on action spring (Figure 25, Item 1) and buffer assembly (Figure 25, Item 2) until buffer retainer (Figure 25, Item 3) snaps up and holds them in place.

ASSEMBLY - Continued

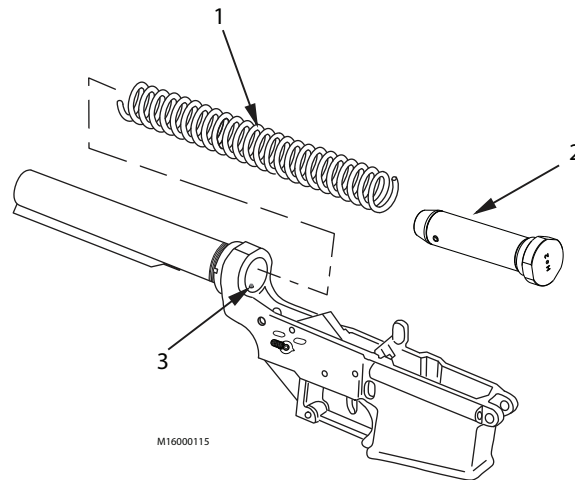


Figure 25. Installation of Action Spring and Buffer Assembly.

15. Install fabricated pivot pin installation tool (Figure 26, Item 1). Insert helical spring (Figure 26, Item 3) and pivot pin detent (Figure 26, Item 2). Compress pivot pin detent in recess and rotate tool.

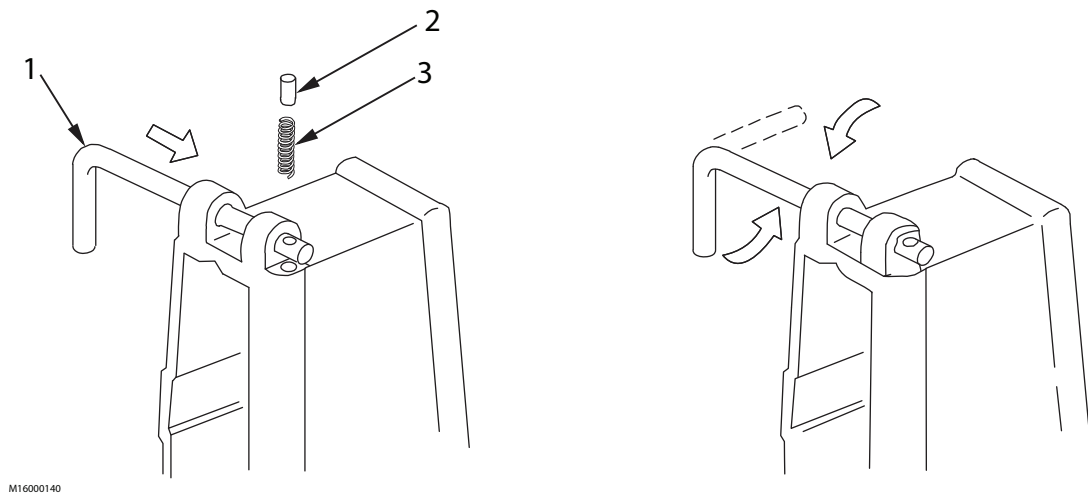


Figure 26. Installation of Pivot Pin Detent.

ASSEMBLY - Continued**NOTE**

Rounded end of pivot pin detent must be in groove of pivot pin when assembly is complete.

16. Position pivot pin (Figure 27, Item 1) against fabricated pivot pin installation tool (Figure 27, Item 3). Maintain pressure on tool while sliding pivot pin into hole. Rotate pivot pin to receive pivot pin detent (Figure 27, Item 2).

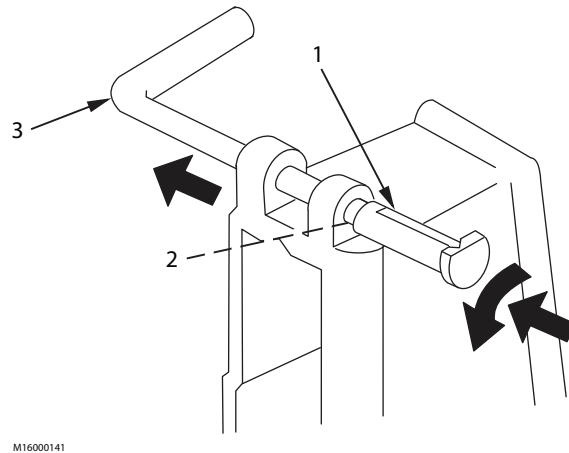


Figure 27. Installation of Pivot Pin.

17. **RIFLE ONLY**
Install takedown pin (Figure 28, Item 3) with groove toward the rear. Install takedown pin detent (Figure 28, Item 4) and helical spring (Figure 28, Item 5) from the rear.

CAUTION

Do not kink helical spring during assembly.

18. Install stepped spacer (Figure 28, Item 1) on lower receiver and receiver extension assembly (Figure 28, Item 2) and carefully slide buttstock assembly (Figure 28, Item 7) into position to compress helical spring (Figure 28, Item 5).

NOTE

If removed, machine screw must be discarded and replaced with a new one.

19. Install new machine screw (Figure 28, Item 6) to secure buttstock assembly (Figure 28, Item 7).

ASSEMBLY - Continued

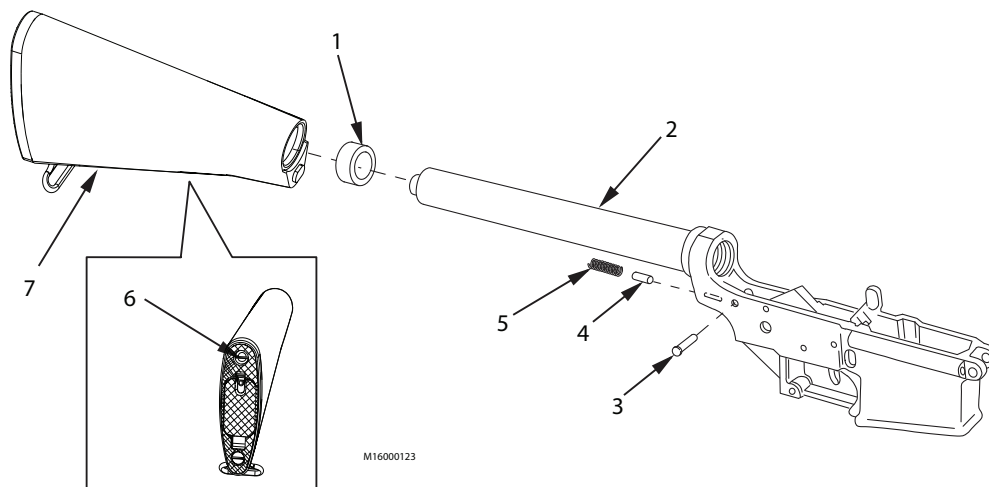


Figure 28. Installation of Buttstock Assembly (Rifle).

20. CARBINE ONLY

Pull down lock release lever (Figure 29, Item 4) in area of retaining nut (Figure 29, Item 3) and reinstall buttstock assembly (Figure 29, Item 1) onto lower receiver and receiver extension assembly (Figure 29, Item 2).

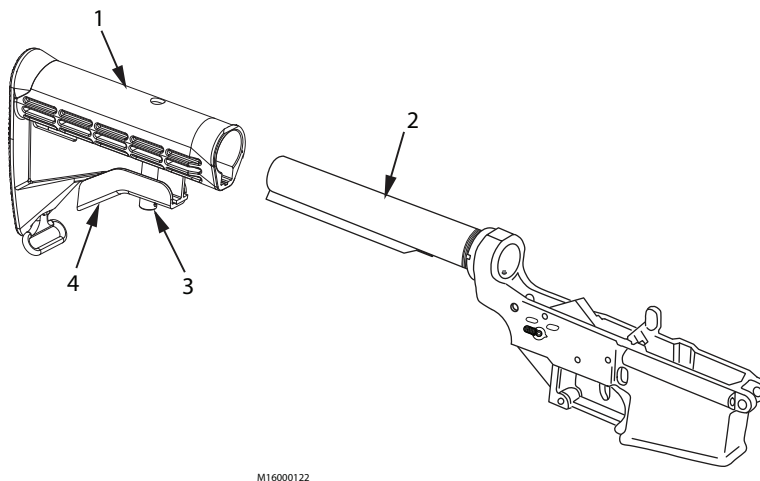
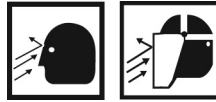


Figure 29. Installation of Buttstock Assembly (Carbine).

ASSEMBLY - Continued**21. ALL WEAPONS**

Install safety detent (Figure 30, Item 5), pointed end first, and helical spring (Figure 30, Item 6) into bottom of lower receiver and receiver extension assembly (Figure 30, Item 4).

WARNING

Any screw longer than 1 1/8 inch used could cause a hazardous situation. Longer screws impede trigger function. Failure to comply may result in death or injury to personnel.

NOTE

A portion of the helical spring will fit in a hole in the pistol grip.

22. Install pistol grip (Figure 30, Item 1) to compress helical spring (Figure 30, Item 6). Secure pistol grip in place with new lock washer (Figure 30, Item 3) and machine screw (Figure 30, Item 2).

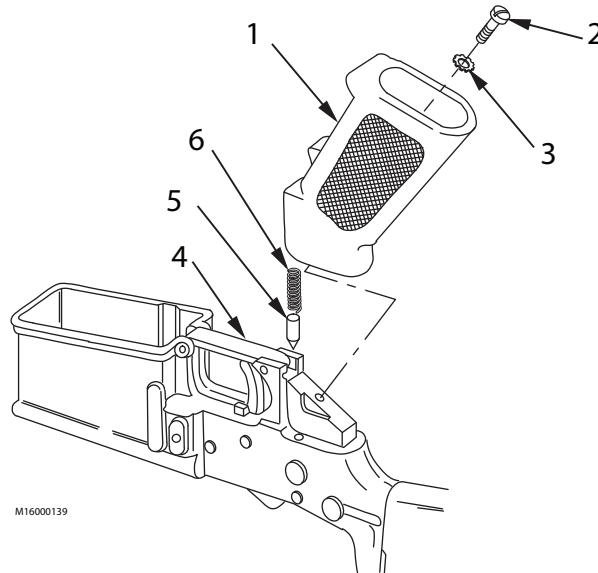


Figure 30. Installation of Pistol Grip.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Assemble weapon (TM 9-1005-319-10).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
BUTTSTOCK ASSEMBLY MAINTENANCE**

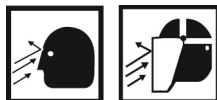
INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

References

TM 9-1005-319-10

Materials/PartsCleaner, Lubricant, and Preservative (CLP) Qty:
1 (WP 0048, Table 1, Item 12)**Equipment Condition**Weapon cleared (WP 0009)
Buttstock assembly removed (WP 0021)**Personnel Required**SMALL ARMS/ARTILLERY REPAIRER 91F

DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed.
Wear safety goggles. Failure to comply may result in injury to personnel.

1. RIFLE ONLY

Remove machine screw (Figure 1, Item 3), small sling swivel (Figure 1, Item 2), and buttplate (Figure 1, Item 4) from buttstock (Figure 1, Item 1).

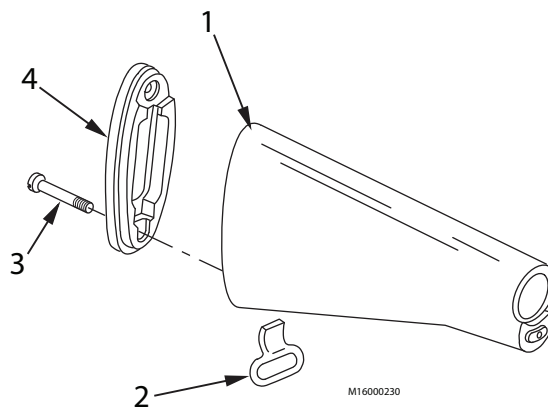


Figure 1. Removal of Buttplate (Rifle).

DISASSEMBLY - Continued

2. Push down on plunger (Figure 2, Item 2) and lift door assembly (Figure 2, Item 1) from buttplate (Figure 2, Item 3).

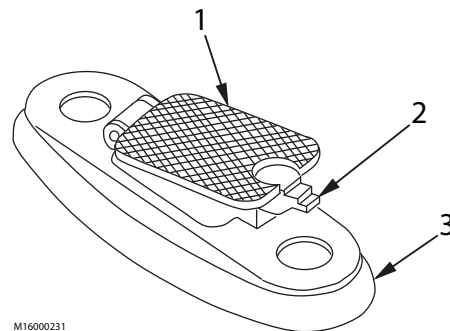


Figure 2. Disengaging of Door Assembly.

3. Remove straight pin (Figure 3, Item 4) and separate hinge (Figure 3, Item 3) and door assembly (Figure 3, Item 1) from buttplate (Figure 3, Item 2).

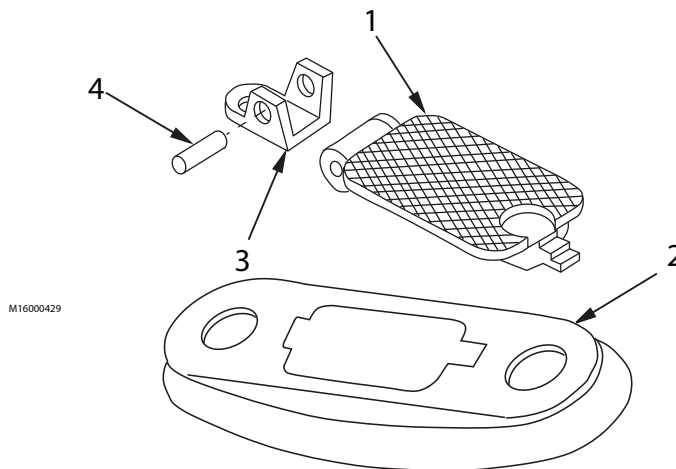


Figure 3. Removal of Door Assembly.

4. CARBINE ONLY

- Tap out spring pin (Figure 4, Item 6) located in oval slot of self-locking nut (Figure 4, Item 5).
5. Insert index finger into forward end of buttstock (Figure 4, Item 1) and push down on headless shoulder pin (Figure 4, Item 3). Unscrew self-locking nut (Figure 4, Item 5) and remove lock release lever (Figure 4, Item 4), headless shoulder pin, and helical spring (Figure 4, Item 2). Remove machine screw (Figure 4, Item 8) and small sling swivel (Figure 4, Item 7).

DISASSEMBLY - Continued

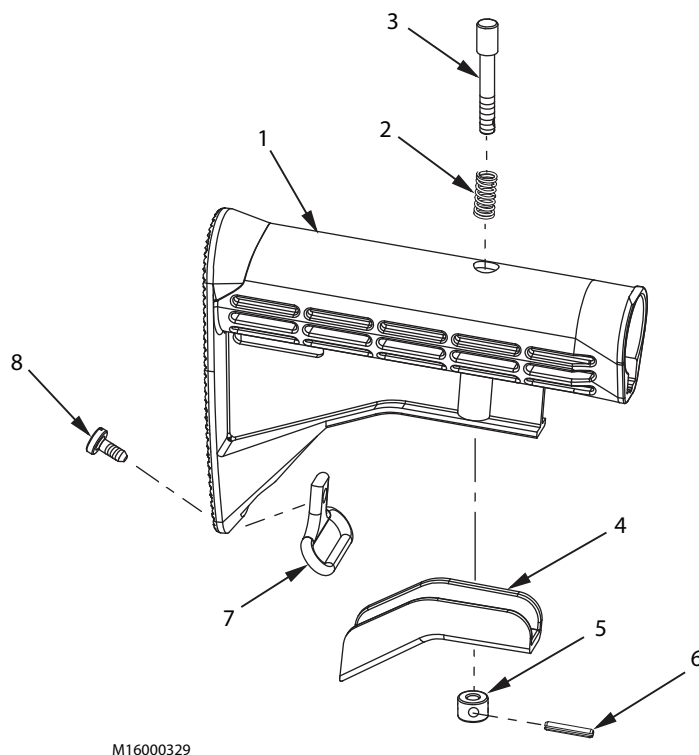


Figure 4. Disassembly of Buttstock Assembly (Carbine).

END OF TASK

INSPECTION

1. Inspect buttstock for cracks using the following guidelines:
 - a. Under the following conditions, hairline cracks (no chipped away material allowed) originating from buttplate end of buttstock are acceptable.
 - (1) One hairline crack, not to exceed 1 in. (2.54 cm) in length, per side of buttstock.
 - (2) Two additional hairline cracks up to 0.25 in. (0.64 cm) in length, per side of buttstock.
 - (3) A total of three cracks per side of buttstock, originating from buttplate end, are allowable.
 - b. Cracks in the critical area at the front end of buttstock are not acceptable and these buttstocks must be replaced.
2. While buttplate is installed on rifle, inspect for cracks around mounting holes. Check for cracks in excess of 0.25 in. (0.64 cm) in length which extend through the buttplate.
3. Inspect door assembly for cracks, corrosion, stuck plunger, separations on outer face, or other damage.
4. Inspect buttstock for unauthorized markings. M16A2 buttstocks with unauthorized marking may be used under the following conditions:
 - a. The only authorized markings are those temporary in nature (e.g. paint, tape, etc.).
 - b. When marking buttstock, use only temporary markings.

INSPECTION - Continued

- c. Buttstocks with unauthorized markings that may have been stamped into the surface of the buttsock will not be used.
- d. Unauthorized markings that have previously been scratched, etched, carved, etc. may continue in use if the marks do not extend into the fiber of buttstock. Cutting into the fiber of the buttstock may weaken it.
- e. These marks may be at any location on the buttsock. Unauthorized markings are not desirable. However, if previously applied, they will be allowed to continue in use due to the cost of the buttstock.

END OF TASK**CLEANING**

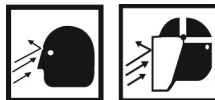
1. Clean all parts with CLP (WP 0048, Table 1, Item 12).
2. Clean knurled surface of door assembly.

END OF TASK**LUBRICATION**

Lubricate all metal components.

END OF TASK**REPLACE**

Replace all unserviceable items.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. **RIFLE ONLY**
Position hinge (Figure 5, Item 2) on door assembly (Figure 5, Item 1) and install straight pin (Figure 5, Item 3).

ASSEMBLY - Continued

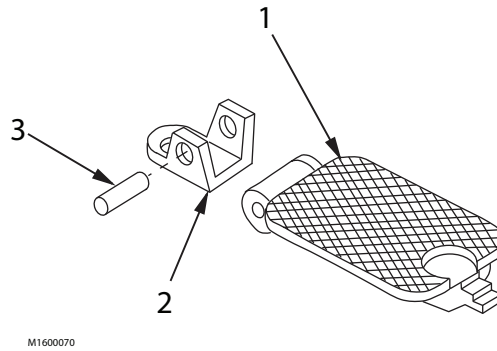


Figure 5. Assembly of Buttstock Door Assembly (Rifle).

2. Install door assembly (Figure 6, Item 4) into buttplate (Figure 6, Item 6) and press plunger (Figure 6, Item 5) to lock.
3. Position buttplate (Figure 6, Item 6) and small sling swivel (Figure 6, Item 2) onto buttstock (Figure 6, Item 1) and secure with machine screw (Figure 6, Item 3).

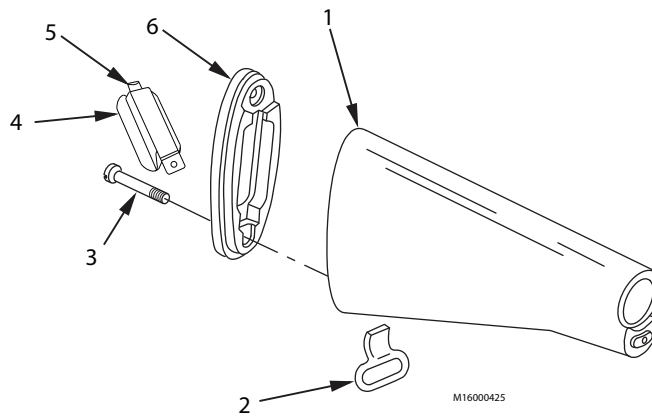


Figure 6. Assembly of Buttstock Assembly.

ASSEMBLY - Continued

4. **CARBINE ONLY**
Insert helical spring (Figure 7, Item 2) onto headless shoulder pin (Figure 7, Item 3).
5. Insert headless shoulder pin (Figure 7, Item 3) and helical spring (Figure 7, Item 2) into hole on top of buttstock (Figure 7, Item 1), threaded end first.
6. Insert index finger into forward end of buttstock (Figure 7, Item 1) and push down on headless shoulder pin (Figure 7, Item 3).
7. Install lock release lever (Figure 7, Item 4) onto threaded portion of headless shoulder pin (Figure 7, Item 3) protruding through bottom of buttstock (Figure 7, Item 1).
8. Screw on self-locking nut (Figure 7, Item 5) until flush with headless shoulder pin (Figure 7, Item 3). Align slot in self-locking nut with spring pin hole in headless shoulder pin.
9. Lightly tap spring pin (Figure 7, Item 6) until flush on both sides of self-locking nut (Figure 7, Item 5).
10. Attach small sling swivel (Figure 7, Item 7) to buttstock (Figure 7, Item 1) with machine screw (Figure 7, Item 8).

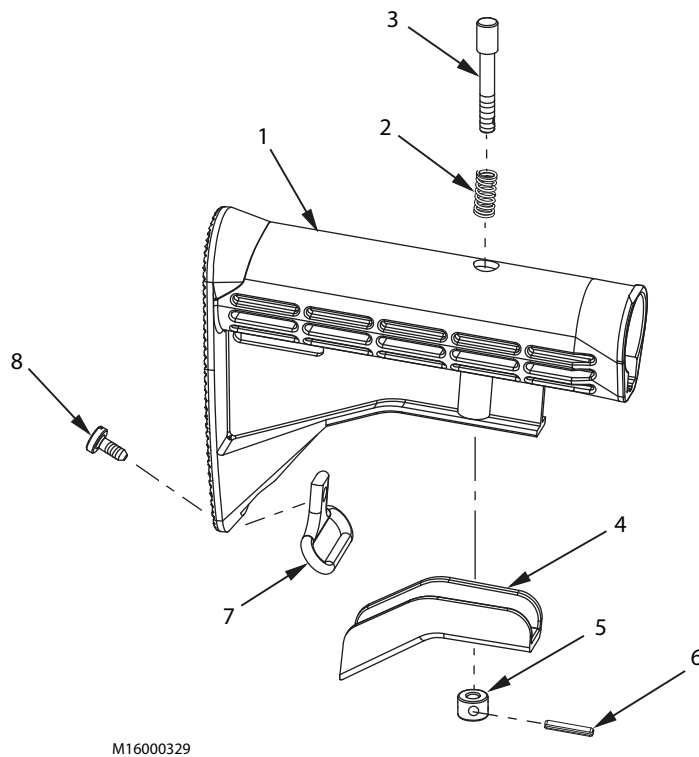


Figure 7. Assembly of Buttstock Assembly (Carbine).

END OF TASK

FOLLOW-ON MAINTENANCE TASKS

1. Rifle only: install buttstock onto lower receiver extension (WP 0021).
2. All weapons: assemble weapon (TM 9-1005-319-10).
3. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

MAINTAINER MAINTENANCE HAMMER ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

References

TM 9-1005-319-10

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Equipment Condition

Weapon cleared (WP 0009)
Hammer assembly removed (WP 0021)

DISASSEMBLY

WARNING



Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

1. **M16A2, M16A4, and M4 ONLY**
Remove hammer spring (Figure 1, Item 1), burst cam spring (Figure 1, Item 2), and burst cam (Figure 1, Item 3) from hammer and hammer pin retainer assembly (Figure 1, Item 4).
2. **M16A3 and M4A1 ONLY**
Remove hammer spring (Figure 1, Item 5) from hammer (Figure 1, Item 6).

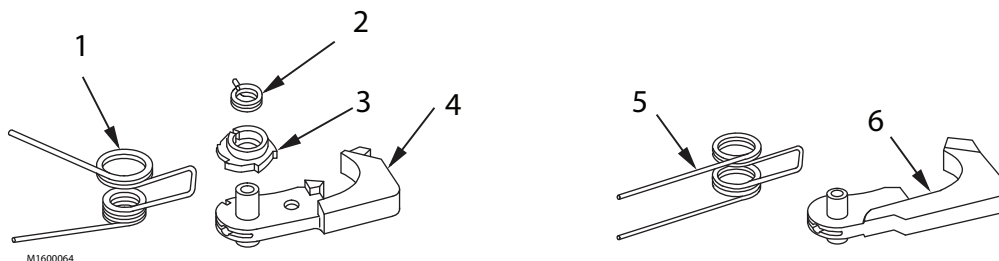


Figure 1. Disassembly of Hammer Assembly.

END OF TASK

INSPECTION

1. Inspect hammer spring for deformities, breaks, and bends. Pay special attention to large coil.
2. Inspect burst cam spring and burst cam for deformities, breaks, and bends.

INSPECTION - Continued

3. Inspect hammer and hammer pin retainer assembly for chips and breaks. Hammer pin should click home under strong finger pressure. Install hammer pin into hole in hammer to check spring retention of hammer pin.
4. Inspect hammer assembly to ensure M16A2 has black burst cam and M4 has nickel colored (shiny) burst cam.

END OF TASK**REPLACE**

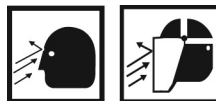
Replace all defective parts.

END OF TASK**CLEANING**

Remove all dirt and debris from hammer assembly.

END OF TASK**LUBRICATION**

Lightly lubricate all components.

END OF TASK**ASSEMBLY****WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

- M16A2 burst cam is black. M4 burst cam is nickel colored (shiny).
- Burst cam spring should be assembled with bend to inside. Large loop of hammer spring should be assembled over burst cam (M16A2, M16A4, and M4).

1. **M16A2, M16A4, M4 ONLY**
Install burst cam (Figure 2, Item 3), burst cam spring (Figure 2, Item 2) and hammer spring (Figure 2, Item 1) on hammer and hammer pin retainer assembly (Figure 2, Item 4).
2. **M16A3, M4A1 ONLY**
Install hammer spring (Figure 2, Item 5) on hammer (Figure 2, Item 6).

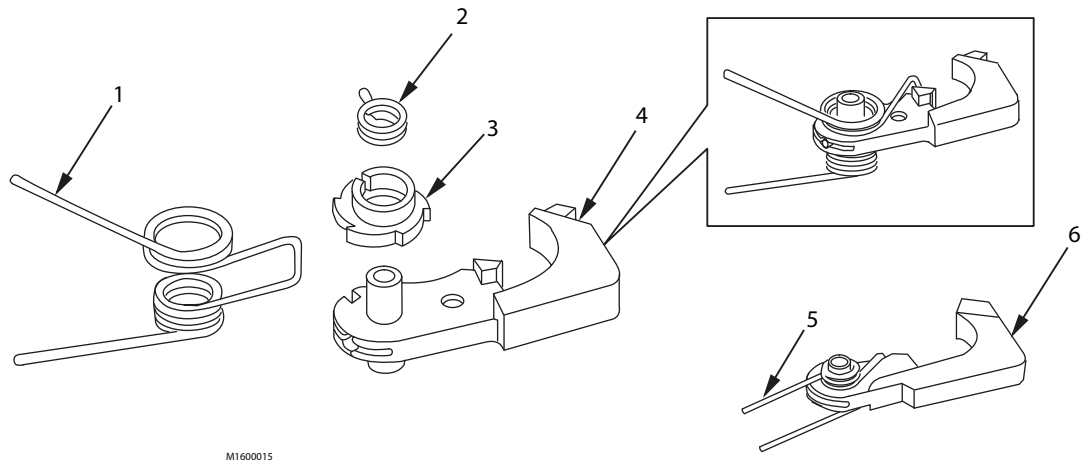
ASSEMBLY - Continued

Figure 2. Assembly of Hammer Assembly.

END OF TASK**FOLLOW-ON MAINTENANCE TASKS**

1. Install hammer assembly into lower receiver (WP 0021).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

**MAINTAINER MAINTENANCE
TRIGGER ASSEMBLY AND TRIGGER SUBASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Bolt carrier key tool (WP 0049, Table 1, Item 16)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Vise, machinist's (WP 0049, Table 1, Item 27)

References

TM 9-1005-319-10

Equipment Condition

Weapon cleared (WP 0009)
Trigger assembly removed (WP 0021)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

DISASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

Do not remove disconnecter springs unless required for repair.

1. **M16A2, M16A4, AND M4 ONLY**
Remove trigger spring (Figure 1, Item 3) and two disconnecter springs (Figure 1, Item 1) from trigger (Figure 1, Item 2).
2. **M16A3 AND M4A1 ONLY**
Remove disconnecter spring (Figure 1, Item 4) and trigger spring (Figure 1, Item 5) from trigger (Figure 1, Item 6).

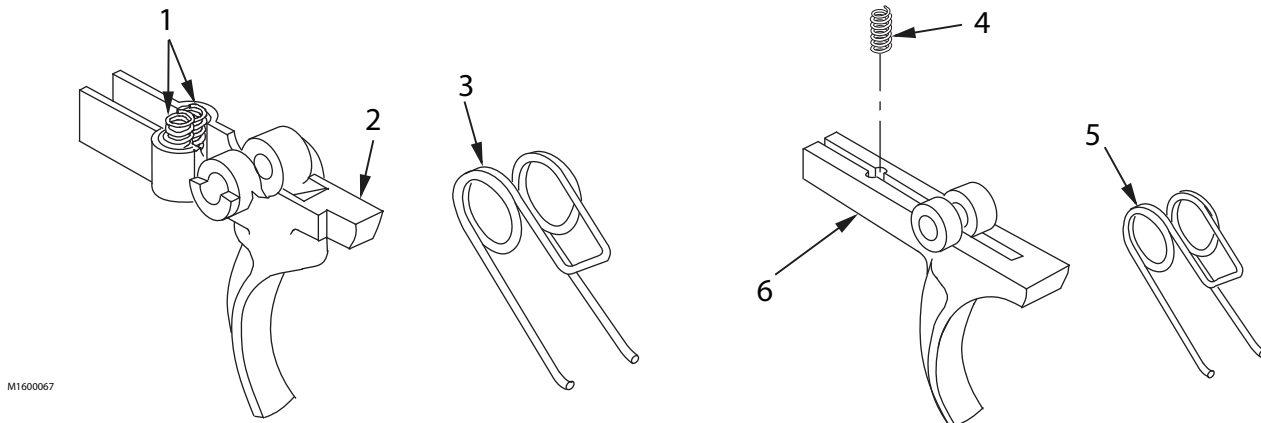
DISASSEMBLY - Continued

Figure 1. Disassembly of Trigger Assembly.

END OF TASK**INSPECTION**

1. Inspect trigger spring for kinks, deformities, and weakness.
2. Inspect disconnecter springs for deformities, bends, breaks, and weakness.
3. Inspect trigger for chips, wear, and cracks. Inspect for damaged searing surface on trigger nose.

END OF TASK**REPLACE**

Replace all defective parts.

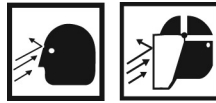
END OF TASK**CLEANING**

Remove all dirt and debris from trigger assembly.

END OF TASK**LUBRICATE**

Lightly lubricate all components.

END OF TASK

ASSEMBLY**WARNING**

Springs are under compression and can act as a projectile when being removed/installed. Wear safety goggles. Failure to comply may result in injury to personnel.

NOTE

M4 ONLY: The SEMI and BURST disconnecter springs are not the same. The SEMI disconnecter spring (left side) is black while the BURST disconnecter spring (right side) is nickel (shiny). Ensure that the correct spring is installed on each side for proper functioning.

1. Use the following procedure to install two disconnecter springs (Figure 2, Item 1) using the bolt carrier key tool:
 - a. Secure trigger (Figure 2, Item 2) in soft vise jaws or similar device.
 - b. Place one spring (Figure 2, Item 1) firmly on the bolt carrier key tool with large diameter coils outward.
 - c. Press spring (Figure 2, Item 1) into recess to solid height.
 - d. Hold spring (Figure 2, Item 1) at solid height and slide spring into one of the holes until the bolt carrier key tool is flush and perpendicular with the recess wall.
 - e. Turn spring (Figure 2, Item 1) one to two turns opposite of coil winding of the spring.
 - f. Discontinue winding when click or snap is heard or felt. This indicates that the spring is seated.
 - g. Hold spring (Figure 2, Item 1) in place when removing the tool to avoid unseating or damaging the spring.

ASSEMBLY - Continued

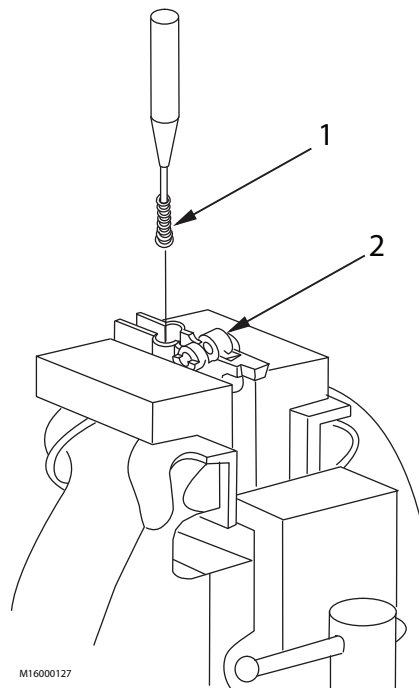


Figure 2. Installation of Disconnecter Springs (M16A2, M16A4, and M4).

2. **M16A2, M16A4, and M4 ONLY**
Install trigger spring (Figure 3, Item 4).
3. **M16A3 and M4A1 ONLY**
Install disconnector spring (Figure 3, Item 1) by inserting large end of spring into trigger (Figure 3, Item 3).
4. Install trigger spring (Figure 3, Item 2) on trigger (Figure 3, Item 3).

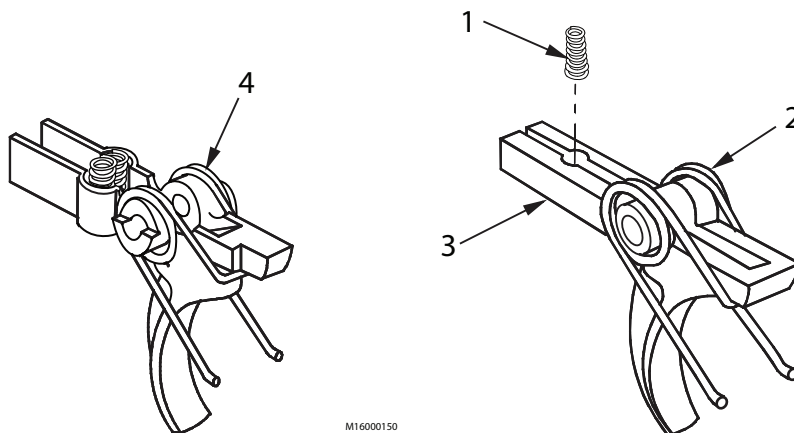


Figure 3. Installation of Trigger Spring.

END OF TASK

FOLLOW-ON MAINTENANCE TASKS

1. Install trigger (WP 0021).
2. Perform function check (TM 9-1005-319-10).

END OF TASK**END OF WORK PACKAGE**

MAINTAINER MAINTENANCE
LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaws (WP 0049, Table 1, Item 2)
Combination wrench (WP 0049, Table 1, Item 28)
Die, set, metal stamping (WP 0049, Table 1, Item 4)
Spanner wrench (WP 0049, Table 1, Item 29)
Vise, machinist's (WP 0049, Table 1, Item 27)
Wrench, torque, ft-lb (WP 0049, Table 1, Item 24)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Equipment Condition

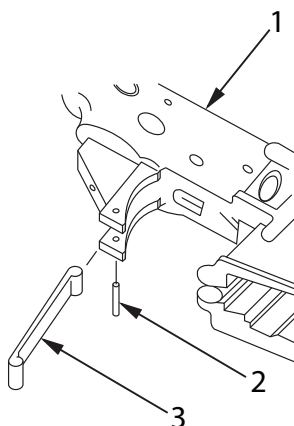
Weapon cleared (WP 0009)
Upper and lower receiver separated (TM 9-1005-319-10)
Lower receiver disassembled (WP 0021)

Materials/Parts

Abrasive cloth (WP 0048, Table 1, Item 18) Qty: 1
Molybdenum disulfide grease (WP 0048, Table 1, Item 26) Qty: 1
Solid Film Lubricant (SFL) (WP 0048, Table 1, Item 28) Qty: 1

DISASSEMBLY

1. Remove spring pin (Figure 1, Item 2) from lower receiver (Figure 1, Item 1).
2. Remove trigger guard (Figure 1, Item 3).



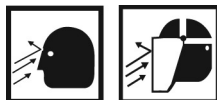
M16000226

Figure 1. Removal of Trigger Guard.

DISASSEMBLY - Continued**CAUTION**

Use padding between lower receiver and brass vise jaws. Grip the solid portion of the lower receiver with brass vise jaws which conform to the shape of the lower receiver in this area.

3. Clamp lower receiver (Figure 2, Item 5) in a machinist's vise using vise jaw caps and tighten on solid portion just tight enough to hold.

WARNING

To avoid injury to your eyes, use care when removing spring-loaded parts. Failure to comply may result in death or injury to personnel.

NOTE

As lower receiver extension is removed, catch buffer retainer and helical spring. Lower receiver is a serial number controlled item.

4. **RIFLE ONLY**
Remove lower receiver extension (Figure 2, Item 1) from lower receiver (Figure 2, Item 5) using combination wrench (Figure 2, Item 4). Catch buffer retainer (Figure 2, Item 2) and helical spring (Figure 2, Item 3).

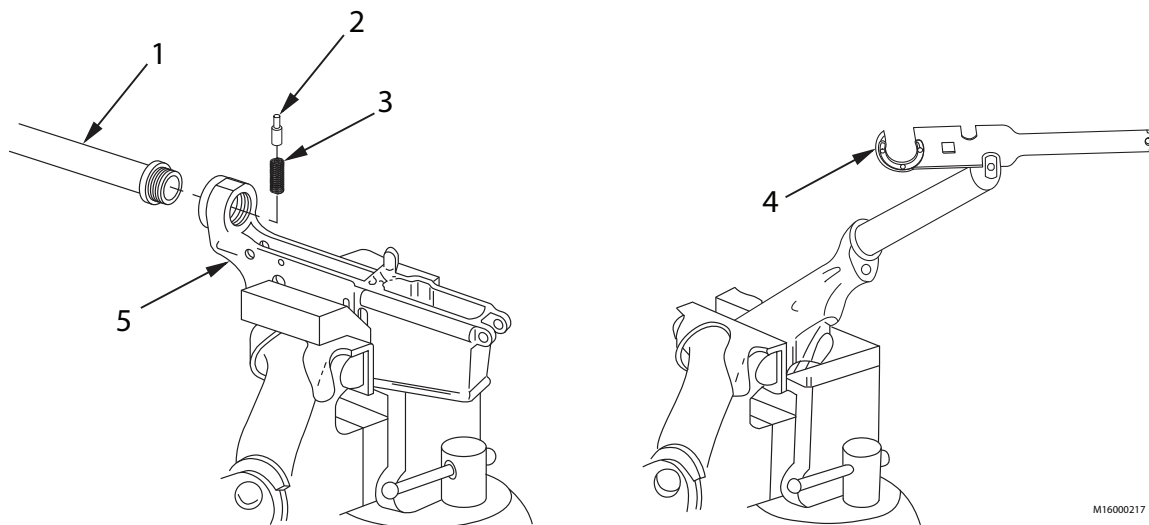


Figure 2. Removal of Lower Receiver Extension (Rifle).

CAUTION

While performing the following step, care should be taken to restrain the pivot pin spring and detent.

5. **CARBINE ONLY**
Loosen round plain nut (Figure 3, Item 1) using spanner wrench (Figure 3, Item 10) to allow receiver end plate (Figure 3, Item 2) to disengage from lower receiver (Figure 3, Item 5). Catch headless straight pin (Figure 3, Item 7) and helical spring (Figure 3, Item 8).

DISASSEMBLY - Continued

6. Remove takedown pin (Figure 3, Item 6) from lower receiver (Figure 3, Item 5).
7. Loosen lower receiver extension (Figure 3, Item 9) by un-threading counterclockwise. Catch buffer retaining detent (Figure 3, Item 3) and helical spring (Figure 3, Item 4) to prevent loss.
8. Remove lower receiver extension (Figure 3, Item 9), receiver end plate (Figure 3, Item 2), and round plain nut (Figure 3, Item 1).

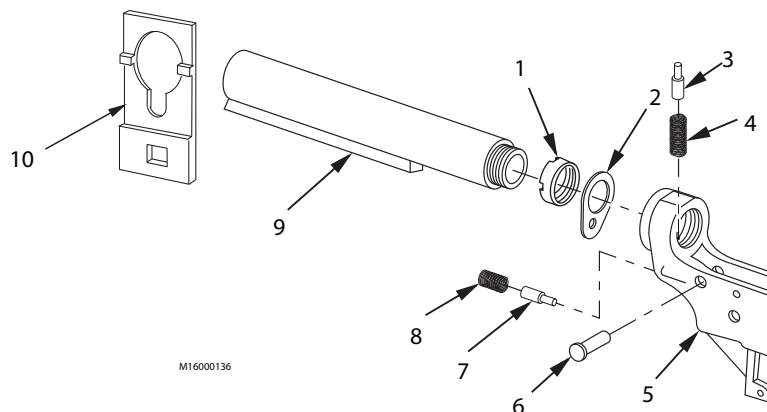


Figure 3. Removal of Lower Receiver Extension (Carbine).

END OF TASK**INSPECTION**

1. Inspect lower receiver extension for corrosion, dents, cracks, and wear. Remove light corrosion with abrasive cloth (WP 0048, Table 1, Item 19). Retouch using SFL (WP 0048, Table 1, Item 28).
2. Inspect buffer retainer for wear.
3. Inspect helical spring for deformities and breaks.
4. Inspect trigger guard for deformities and check operation of plunger and spring.
5. **CARBINE ONLY**
Inspect receiver end plate and round plain nut for damage.
6. Inspect detent, helical spring, and takedown pin for wear and deformities.

END OF TASK**CLEANING**

Clean and remove carbon deposits from all items.

END OF TASK

REPLACE

Replace all defective parts.

END OF TASK**REPAIR****NOTE**

- AIR FORCE ONLY: Only depot maintenance is authorized to restamp the serial number on weapon.
- ARMY ONLY: Only maintainer is authorized to restamp serial number.
- Most rifle/carbine serial numbers are 1/8 in. (0.31 cm) in height or close enough that this size is acceptable for such restamping. In the event that a weapon has a serial number that cannot be reproduced by the use of the die sets contained in the Set D Field Maintenance Post, Camp, and Station Small Arms Shop Set, local purchase of an appropriate size die set is authorized.

If serial number is hard to read on weapon, restamp as follows:

- a. Support the receiver in the stamping area to prevent bending and distortion of the receiver.
- b. Exercise extreme care to restamp the same serial number as the original.
- c. Restamp the serial number the same size as the original serial number.

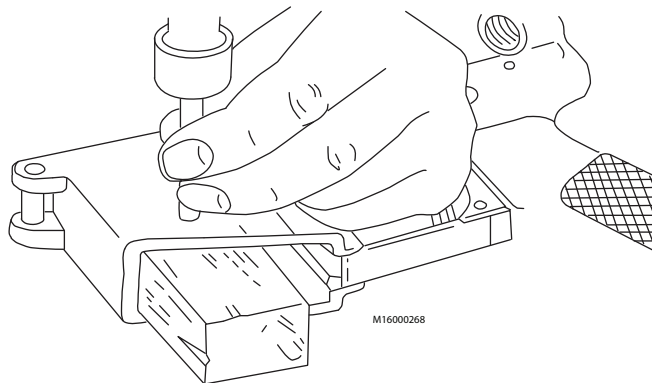
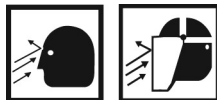


Figure 4. Serial Number Stamping.

END OF TASK**LUBRICATION**

Lubricate threads of lower receiver and lower receiver extension with molybdenum disulfide grease (WP 0048, Table 1, Item 26) before reassembly.

END OF TASK

ASSEMBLY**WARNING**

To avoid injury to your eyes, use care when installing spring-loaded parts. Failure to comply may result in death or injury to personnel.

1. Install helical spring (Figure 5, Item 2) and buffer retainer (Figure 5, Item 1) into lower receiver (Figure 5, Item 3).

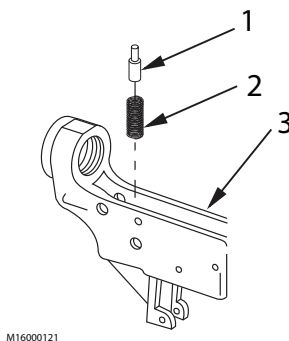


Figure 5. Installation of Buffer Retainer.

2. Install lower receiver extension (Figure 6, Item 1) into lower receiver (Figure 6, Item 3) while depressing buffer retainer (Figure 6, Item 2).

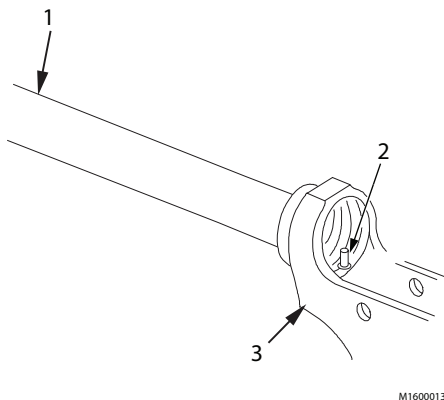


Figure 6. Installation of Lower Receiver Extension.

ASSEMBLY - Continued**CAUTION**

Use padding between lower receiver and brass vise jaws. Use vise jaws in vise and brass vise jaw caps, if available.

3. Clamp solid portion of lower receiver (Figure 7, Item 4) in a machinist's vise using vise jaws. Grip solid portion of lower receiver with vise jaws which conform to the shape of lower receiver in this area.
4. **RIFLE ONLY**
Using combination wrench (Figure 7, Item 1) and torque wrench (Figure 7, Item 2), torque lower receiver extension (Figure 7, Item 3) to 35-39 ft-lb (47.25-52.65 N-m). Torque is read when both wrenches are used together.

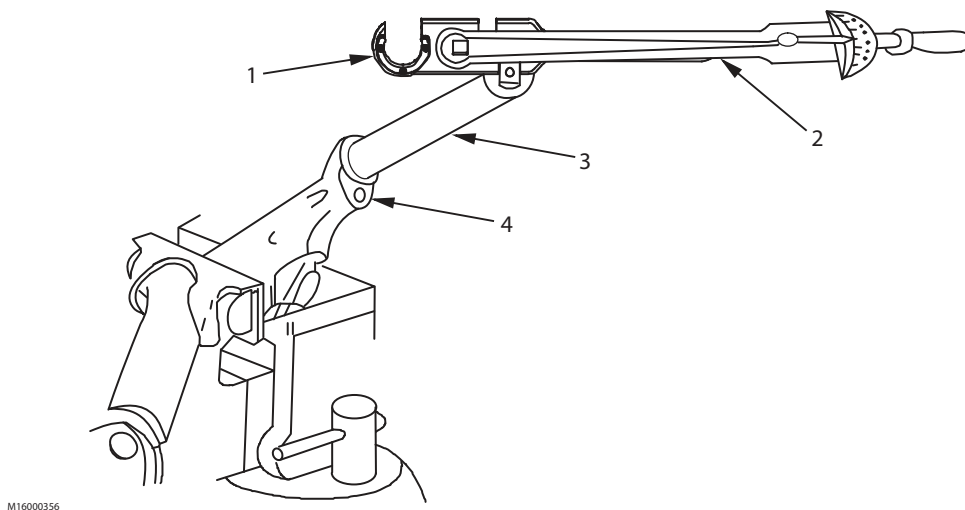


Figure 7. Torquing Lower Receiver Extension (Rifle).

5. **CARBINE ONLY**
Place helical spring (Figure 8, Item 4) and buffer retainer (Figure 8, Item 3) into retaining hole of lower receiver (Figure 8, Item 5). Screw round plain nut (Figure 8, Item 1) onto lower receiver extension (Figure 8, Item 9) with three notches on round plain nut facing forward.
6. Align receiver end plate (Figure 8, Item 2) onto lower receiver extension (Figure 8, Item 9) with lug of receiver end plate facing forward.
7. Place takedown pin (Figure 8, Item 6), headless straight pin (Figure 8, Item 7), and helical spring (Figure 8, Item 8) in lower receiver assembly (Figure 8, Item 5).
8. Push down on buffer retainer (Figure 8, Item 3) and helical spring (Figure 8, Item 4) while screwing lower receiver extension (Figure 8, Item 9) in until it retains buffer retainer in position.
9. Align lug of receiver end plate (Figure 8, Item 2) into rear of lower receiver (Figure 8, Item 5). Screw round plain nut (Figure 8, Item 1) forward until it contacts receiver end plate.
10. Tighten round plain nut (Figure 8, Item 1) using spanner wrench until snug.
11. Torque round plain nut (Figure 8, Item 1) to 38-42 ft-lb (51.53-56.95 N-m) using spanner wrench and torque wrench.
12. Stake receiver end plate (Figure 8, Item 2) in two places across from notches in round plain nut (Figure 8, Item 1).

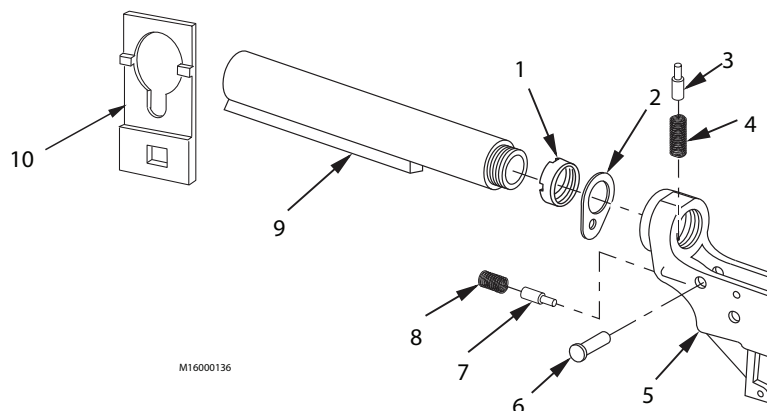
ASSEMBLY - Continued

Figure 8. Installation of Lower Receiver Extension (Carbine).

13. **ALL WEAPONS**

Install trigger guard (Figure 9, Item 2) into lower receiver (Figure 9, Item 1).

CAUTION

Damage to lower receiver assembly could result if trigger guard wings are not supported while installing rear trigger spring pin. Ensure trigger guard is in place prior to installing trigger guard pin.

14. Install spring pin (Figure 9, Item 3).

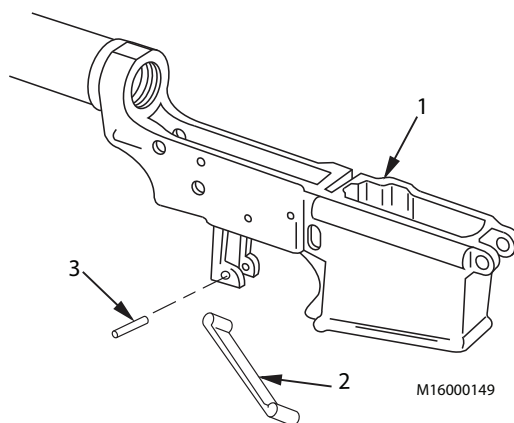


Figure 9. Installation of Trigger Guard.

END OF TASK

FOLLOW-ON MAINTENANCE TASKS

1. Assemble lower receiver (WP 0021).
2. Assemble weapon (TM 9-1005-319-10).

FOLLOW-ON MAINTENANCE TASKS - Continued

3. Perform function check (TM 9-1005-319-10).

END OF TASK

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
GAUGING**

INITIAL SETUP:**Test Equipment**

Gun Maintenance Kit (WP 0049, Table 1, Item 17)

Tools and Special Tools

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Fixture, measuring, trigger pull (WP 0049, Table 1, Item 8)

Personnel Required

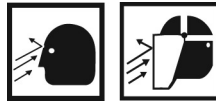
SMALL ARMS/ARTILLERY REPAIRER 91F

References

AFI 36-2654
MIP Series 7611
TB 43-180
TC 3-22-9
TM 9-1005-319-10
TO 33K-1-100-2
WP 0019
WP 0021

Equipment Condition

Weapon cleared (WP 0009)
Weapon disassembled (TM 9-1005-319-10)

GAUGING**WARNING**

To avoid injury to eyes, use care when removing and installing spring-loaded parts.

NOTE

- Initial gauging is required one year from receipt of the weapons.
 - AIR FORCE ONLY: Will be inspected in accordance with the guidance in AFI 36-2654.
 - Navy users shall refer to the applicable Maintenance Requirement Card (MRC) pursuant to the Navy's 3M Planned Maintenance System (PMS) or the small arms gauging requirements pursuant to NAVSEAINST 8370.2.
 - All Rifles and Carbines must be gauged at least once annually for safety.
 - It is recommended that training units inspect/gauge all Rifles at the end of each training cycle. Training units will inspect/gauge all rifles at least once annually.
 - Small arms gauges are precision tools used in the maintenance of Army small arms and as such should be handled, used, and stored with care. Periodically, they should be cleaned with the authorized cleaning solvent for weapons and given a light coating of lube. Do not use force when using gauges and use them as prescribed in this work package. Per TB 43-180 small arms gauges must be turned in for calibration every 360 days after they are put into use. Air Force will use guidance in TO 33K-1-100-2, TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide.
 - All Army Reserve and Army National Guard M16 series Rifles and M4 series Carbines must be inspected and gauged at least once every two years, after the initial inspection gauging procedures have been accomplished. This initial gauging procedure is required one year from receipt of the weapons. This two year interval may be maintained unless Preventive Maintenance Checks and Services (PMCS) or other physical evidence indicates that an individual unit's M16 series Rifles and M4 series Carbines require inspection gauging 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 the interval of inspection for other units.
 - Firing pin should touch gauge on minimum but should not touch on maximum.
1. Insert firing pin (Figure 1, Item 1) through bolt assembly (Figure 1, Item 3). Position firing pin protrusion gauge (Figure 1, Item 2) to check for proper protrusion of firing pin (minimum 0.028 in. (0.07 cm) to maximum 0.036 in. (0.09 cm)). Replace defective firing pin.

GAUGING - Continued

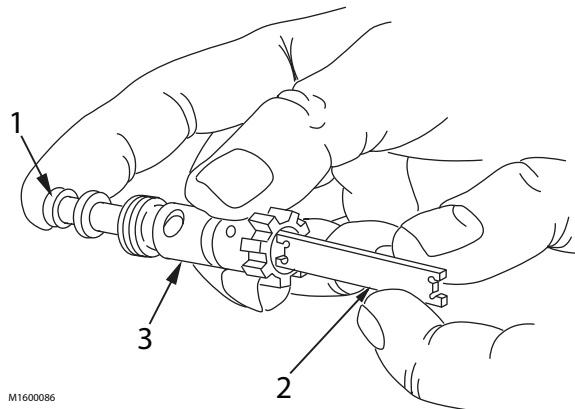


Figure 1. Firing Pin Protrusion Test.

NOTE

- Bolts with firing pin holes which permit the no-go plug gauge to fully penetrate at any position on the circumference will be rejected and replaced.
 - Replacement of the bolt assembly will require that the headspace be tested.
2. Test bolt (Figure 2, Item 1) for elongated or oversized firing pin hole using no-go plug gauge (Figure 2, Item 2).

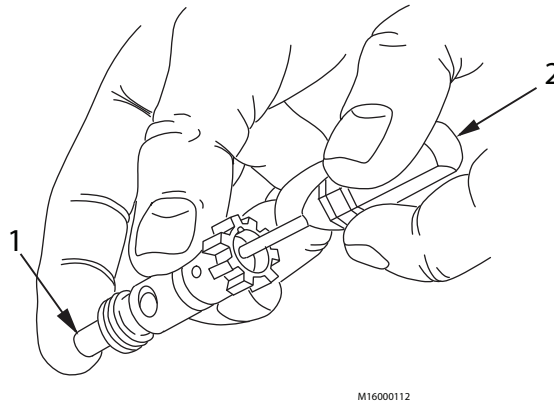


Figure 2. Inspection of Firing Pin Hole.

GAUGING - Continued

NOTE

- Always gauge trigger and hammer pin holes with no-go plug gauge before replacing parts.
 - If the lower receiver is not disassembled, visually inspect for broken or damaged parts and to ensure that the hammer and trigger springs are correctly installed before beginning this test. It is not necessary to disassemble the lower receiver for the sole purpose of this visual inspection. If broken or damaged parts are found, disassemble and repair as authorized.
3. Test two hammer pin holes and two trigger pin holes using no-go plug gauge (Figure 3, Item 1). This test may be conducted by disassembly of the lower receiver or by pushing the pin far enough to disengage the end of the pin from the side of the receiver which is being tested. If the lower receiver is not disassembled and the no-go plug gauge enters any hole to first shoulder (see A in Figure 3), the lower receiver must be disassembled and all four holes must be tested again.
 4. Gently insert the no-go plug gauge and rotate it 180 degrees. If the no-go plug gauge passes into any one of the four pin holes to the second shoulder (see B in Figure 3), the weapon is unserviceable and shall be turned in for replacement.
 5. After completion of gauging operation, visually inspect hammer and trigger springs to ensure proper location of spring legs.

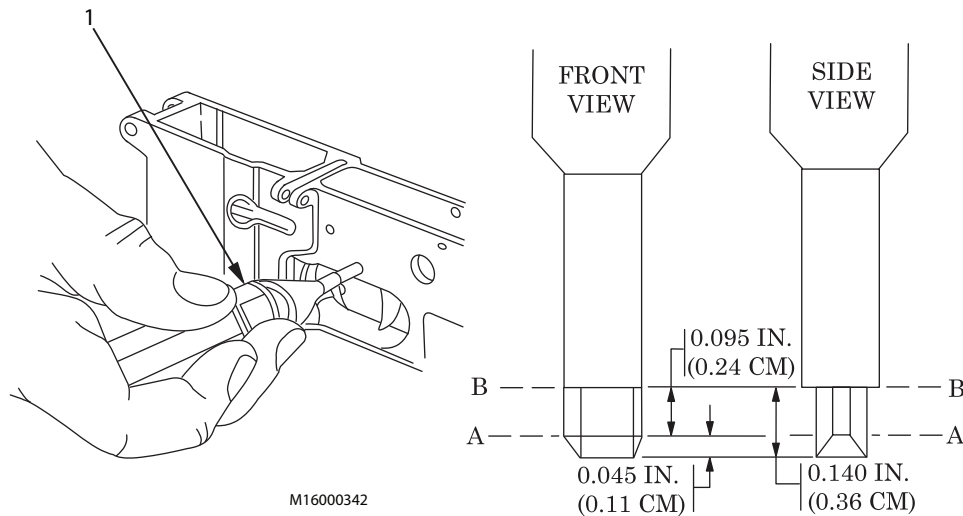


Figure 3. Use of Trigger and Hammer Gauge.

GAUGING - Continued**NOTE**

- Barrel erosion gauge, P/N 13076673, will be used to gauge all chrome lined Rifle and Carbine barrels.
 - M4 series Carbines and M16 series Rifles will be gauged depending on the majority of ammunition type fired. Rifles and Carbines firing a majority of M855 will gauge to "M855 REJECT" line on erosion gauge. Rifles and Carbines firing a majority of M855A1 will gauge to "M855A1 REJECT" line. If the majority of ammunition type fired is unknown, gauge to "M855 REJECT" line. Weapons are considered Non-Mission Capable (NMC) for combat if they fail the "M855 REJECT".
 - When gauging barrel erosion prior to deployment of weapons, use the pre-embarkation reject mark on erosion gauge.
6. Install key and bolt carrier assembly with bolt assembly and firing pin removed. Hold upper receiver in vertical position with receiver up. Insert barrel erosion gauge (Figure 4, Item 1) into the rear of upper receiver. The reject mark (Figure 4, Item 2) must be read at the rear edge of the upper receiver assembly (Figure 4, Item 3).
 7. If the reject mark passes beyond rear surface of upper receiver assembly, the barrel is unserviceable and shall be replaced.

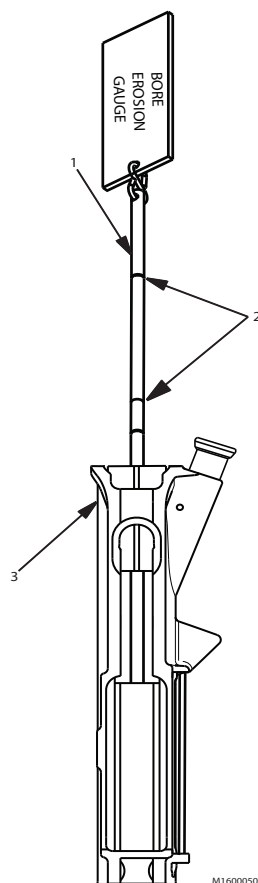


Figure 4. Use of Barrel Erosion Gauge.

GAUGING - Continued

CAUTION

Do not let straightness gauge fall freely. Catch when exiting barrel to prevent damage to straightness gauge.

NOTE

- Ensure barrel is clean prior to performing the following test.
 - Bore straightness gauge is required on all barrels. The gauge must pass through the barrel without being forced.
 - Gauge must pass freely through barrel. If gauge does not pass through barrel, recheck as follows. If gauge passes freely through the barrel, barrel is acceptable. If it does not, the barrel must be straightened or replaced (WP 0019).
8. Remove key and bolt carrier assembly from upper receiver (Figure 5, Item 2).
 9. Hold upper receiver and barrel assembly in vertical position with muzzle pointed down (Figure 5, Item 4) and insert straightness gauge (Figure 5, Item 1) into chamber end of barrel (Figure 5, Item 3). Release gauge and catch it as it exits muzzle end.

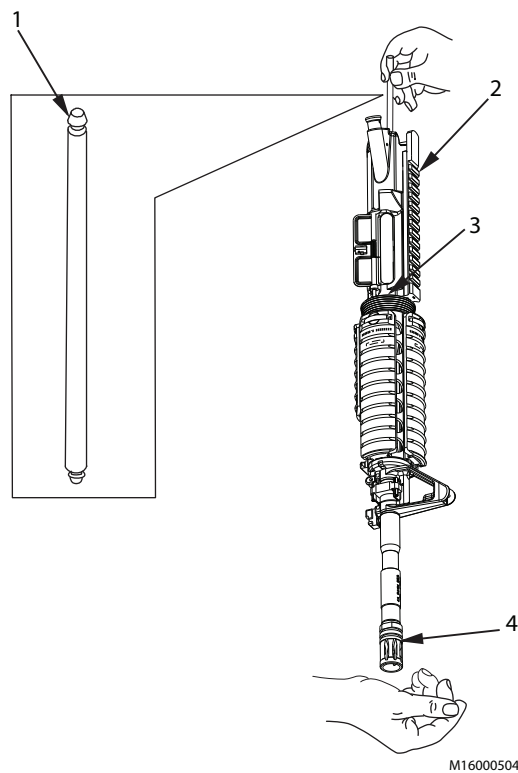


Figure 5. Use of Bore Straightness Gauge.

10. Install charging handle assembly (Figure 6, Item 1). Assemble and install bolt and bolt carrier assembly (Figure 6, Item 4) into upper receiver and barrel assembly (Figure 6, Item 3).
11. Pull bolt carrier back and insert headspace gauge (Figure 6, Item 2) in chamber with tapered end facing barrel.

GAUGING - Continued

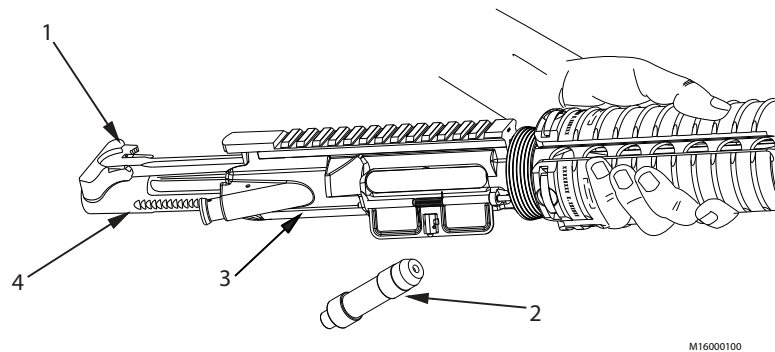


Figure 6. Insertion of Headspace Gauge.

12. Check headspace by pressing key and bolt carrier assembly (Figure 7, Item 3) and charging handle assembly (Figure 7, Item 1) forward using light finger pressure.
13. Bolt should not rotate to locked position. Key and bolt carrier assembly must protrude from rear of upper receiver assembly (Figure 7, Item 2) for proper headspace.

NOTE

- Weapons which have been re-barreled must be function-fired with seven rounds of 5.56mm ball ammunition at 25 meter range using target, prior to putting the weapon into service. This is the responsibility of the owning unit. Refer to TM 9-1005-319-10 and TC 3-22.9.
 - AIR FORCE ONLY: This is the responsibility of combat arms shop.
14. If excessive headspace, first replace bolt assembly and then recheck. If headspace is not corrected, replace barrel assembly then recheck with the original bolt to determine if bolt is still good or if the bolt should be replaced also.
 15. Remove bolt and bolt carrier assembly, charging handle assembly, and headspace gauge.

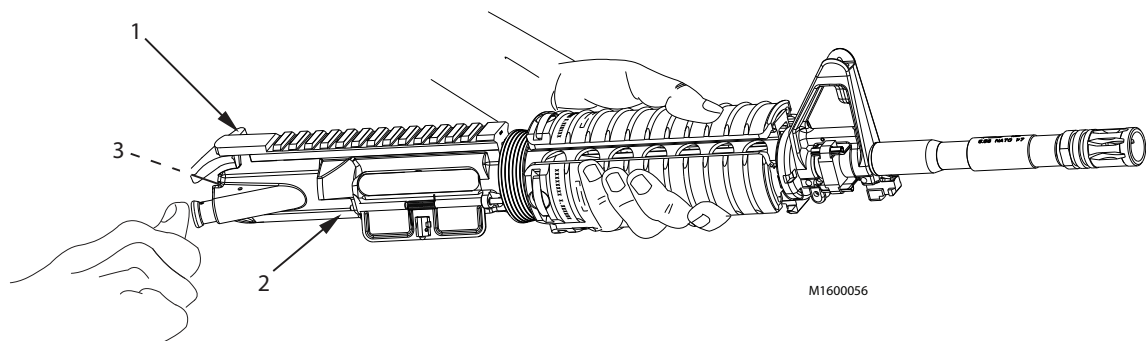


Figure 7. Checking Headspace.

16. Assemble weapon (TM 9-1005-319-10).
17. With the upper receiver attached to the lower receiver, and the pivot pin and takedown pins in place, perform the following test:
 - a. Apply hand pressure to push the upper receiver as far to one side as possible.

GAUGING - Continued

- b. Attempt to insert a 0.020 in. thickness gauge (Figure 8, Item 1) between the pivot pin lugs of the upper and lower receivers.
- c. If the thickness gauge penetrates to the pivot pin, continue to step 19. If thickness gauge does not penetrate to the pivot pin, continue to step 22.

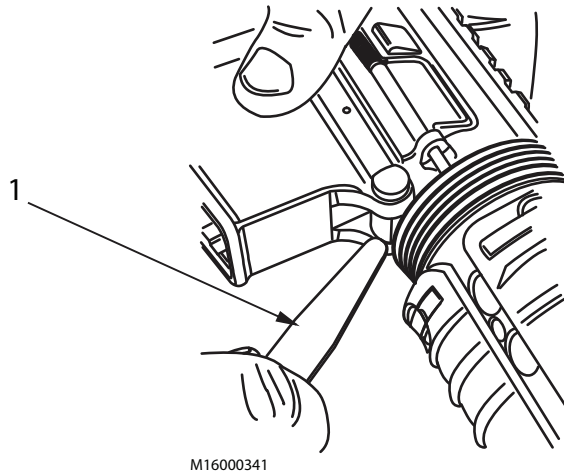


Figure 8. Use of Thickness Gauge.

18. Remove the upper receiver and install a "new" upper receiver and perform the test again.
19. If weapon now passes the above test, it shall be considered serviceable and continue in use.
20. If weapon fails the test with a new upper receiver, the failure shall be considered unserviceable. This requires action to obtain a replacement weapon. Once a replacement has been received, evacuate the original weapon to depot for overhaul.

21. Test trigger pull as follows:
M16A2, M16A4, and M4 ONLY

a.

NOTE

Remove magazine, if installed, prior to performing trigger pull test.

Clear the weapon. Place selector lever in BURST position. Squeeze the trigger and hold it to the rear. Pull the charging handle to the rear and return to the bolt closed position three times. This will place the BURST disconnecter in the deep notch of the BURST cam.

- b. Release the trigger. Place the selector lever in SEMI position. Hold the weapon in the vertical position. Using trigger pull measuring fixture (Figure 9, Item 1), add weights (Figure 9, Item 2) until hammer trips. Determine weight applied.
- c. Hammer must not trip when 5.5 lb (2.49 kg) have been applied; hammer must trip on applying 9.5 lb (4.31 kg).

M16A3 and M4A1 ONLY

- d. Clear the weapon. Charge weapon. Place selector lever in SEMI position and hold weapon in vertical position.
- e. Using trigger pull measuring fixture add weights until hammer trips. Determine weight applied.
- f. Hammer must not trip when 5.5 lb (2.49 kg) have been applied. Hammer must trip on applying 8.5 lb (3.86 kg).

GAUGING - Continued

ALL WEAPONS

- g. If weapon fails trigger pull test or excessive creep is present, replace trigger assembly and/or hammer assembly (WP 0021).

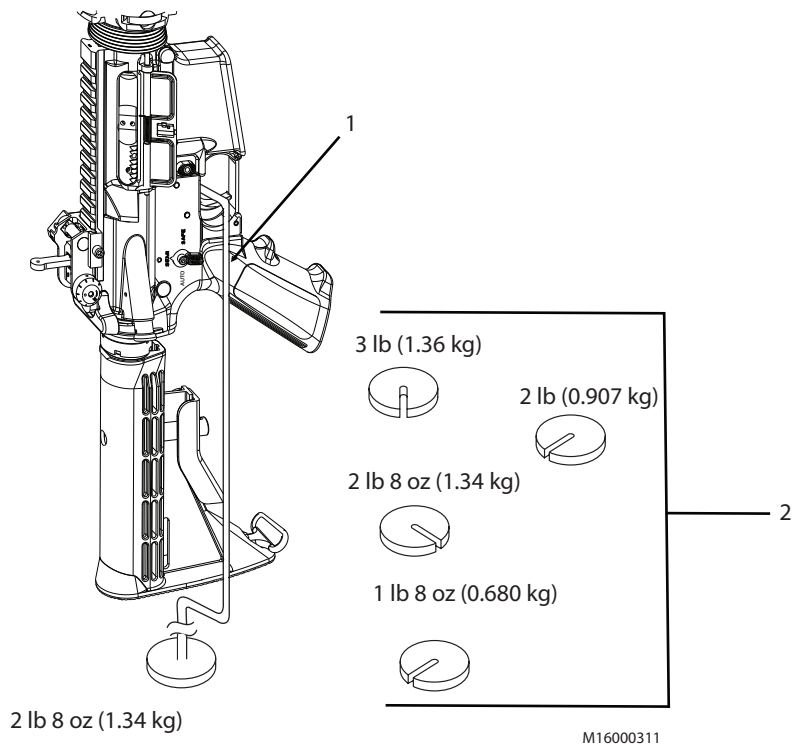


Figure 9. Trigger Pull Test.

END OF TASK

FOLLOW-ON MAINTENANCE TASKS

Perform function check (TM 9-1005-319-10).

END OF TASK

END OF WORK PACKAGE

MAINTAINER MAINTENANCE PREPARATION FOR STORAGE OR SHIPMENT

INITIAL SETUP:

References

MIL-STD-129
MIL-STD-1186
MIL-STD-2073
MIP Series 7611

References (cont.)

SPI 00-856-6885
TM 9-1005-319-10
WP 0009

PACKAGING

NOTE

Cleaning and packaging is the responsibility of the owning unit.

1. Packaging of M16 series Rifles and M4 series Carbines shall be in accordance with MIL-STD-129 and the following:
 - ARMY ONLY: Army users shall package the rifle and the carbine in accordance with each respective Packaging Data Sheet (PDS) for shipment or storage which may exceed 90 days. The PDS is part of the Army Master Data File Retrieval Microform System (ARMS) Packaging File.
 - AIR FORCE ONLY: Air Force users shall package the rifle in accordance with each respective Special Packaging Instruction (SPI) 00-856-6885 for shipment or storage which may exceed 90 days.
 - NAVY ONLY: Navy users refer to NAVSEA INST 8370.2 for packaging small arms weapons for shipment.
2. Packaging, if required, for shipping/storage which will not exceed 90 days shall be as follows:
 - a. Clean in accordance with TM 9-1005-319-10.
 - b. Wrap with MIL-B-121 waterproof material.
 - c. Place in barrier bag MIL-B-117, Type I, Class C, or wrap with MIL-B-121, Type I, Grade A, and seal with tape, PPP-T-76.
 - d. Place one or more of item in minimum size container. Block and brace in accordance with MIL-STD-1186. Cushion the weapons and similar weight items with PPP-C-843, and use PPP-F-320 as filler, to create a tight pack.
 - (1) Fiber board containers shall be in accordance with PPP-B-636 and may be Class Domestic. Gross weight and size of material shall determine grade of fiberboard container. PPP-B-640 may also be used.
 - (2) Wood containers shall be in accordance with PPP-B-601 or PPP-B-621.
 - e. Equivalent materials may be used.
3. NSNs are not assigned to all the specified material.

STOWAGE

1. Clear weapon (WP 0009).
2. Place selector lever in SEMI position.

STOWAGE - Continued

3. Squeeze trigger. Hammer should fall.
4. Close ejection port (dust) cover.
5. Place weapon in rack.

END OF WORK PACKAGE

MAINTAINER MAINTENANCE
PRE-EMBARKATION INSPECTION OF MATERIAL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

INITIAL SETUP:**Test Equipment**

Gun Maintenance Kit (WP 0049, Table 1, Item 17)

Materials/Parts

Penetrant kit (WP 0048, Table 1, Item 41) Qty: 1
Solid Film Lubricant (SFL) (WP 0048, Table 1, Item 28) Qty: 1
Dummy cartridge (WP 0048, Table 1, Item 21) Qty: 1

References (cont.)

AFTO Form 105
AR 725-50
DA Form 2408-9
DA PAM 750-8
MIM 16-013
SB 746-1
TO 11W-1-10
WP 0026

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

References

AMC PAM 310-9

PURPOSE**NOTE**

This work package applies to all the weapons unless stated otherwise.

This work package establishes standards for overseas shipment (pre-embarkation inspection criteria) for all weapons. These standards are provided to ensure that the user is furnished equipment which will perform its mission without early failure or major maintenance problems.

SCOPE**NOTE**

AIR FORCE ONLY: M16 series rifles with chrome plated bolts and bolt carriers, lower receivers without pivot pin detents, and bolt carriers without serrations may be used by Air Force personnel for all mission requirements.

1. The standards prescribed provide for a high percentage of remaining life in affected rifles; therefore, rifles designated for overseas shipment must qualify under the standards contained in the following paragraph, table, and in referenced DA publications, before they can be approved for shipping action.
2. Provisions of this standard apply to all US Army agencies/activities selecting or preparing rifles for shipment to US troops overseas. It also applies to CONUS troops preparing rifles for shipment overseas. Provisions do not apply either to rifles being prepared for shipment to Military Assistance Program/Military Assistance Service (MAP/MAS) recipients unless specifically prescribed by MAP/MAS transaction for the materiel or to rifle being returned to CONUS from overseas. The maintenance instructions and standards contained herein do not apply to rifles once the material has arrived at the overseas destination. At that time, maintenance instructions contained in the applicable TMs will be used.

SCOPE - Continued

3. This applies to rifles which are the logistic responsibility of the US Army Tank-automotive and Armaments Command (TACOM).
4. When inspecting a rifle belonging to another service, the inspector must abide by that service's unique requirements and that service's exceptions to standard guidance.

GENERAL

1. Only rifles which have been classified as serviceable condition code A, B, or C under AR 725-50 will be considered for overseas shipment.
2. Waivers to provisions can only be granted by the gaining command of any particular end item being considered for issue, deployment, or shipment. The issuing services may recommend issue or shipment of rifles not meeting the provisions when all the following conditions exist:
 - a. Repair parts in required quantities cannot be obtained from the supply system prior to delivery of the end item.
 - b. The gaining command concurs in the receipt of the end item for storage until required repair parts become available. The gaining command must also state that capability, facilities, and funds are available to perform the necessary work when parts become available.
 - c. Department of the Army approval is obtained on a case-by-case basis.
 - d. Required repair parts are requisitioned by the issuing command for delivery to the gaining command.
3. All Department of the Army Modification Work Orders (MWO) applicable to the specific rifle being considered for shipment overseas must have been applied.
4. Refer to SB 746-1 for pertinent publications relating to equipment processing and marking information.
5. Refer to AMC PAM 310-9 for publications containing applicable overhaul standards.

SHIPMENT OR ISSUE**Organizational Repair Parts, Tools, and Equipment**

Weapons must be complete with all items required by applicable Department of the Army publications, including those in the basic issue items list of the appropriate operator manual.

Publications

Operator publications applicable to the equipment log book (service packet) must accompany the equipment. All log book (service packet) entries must be complete and up-to-date including those covering any repairs, replacements, or adjustments made to the weapon in complying with this section.

Documentation

Prepare DA Form 2408-9 (Equipment Control Record) at time of overseas shipment or issue to another stock record or property book account, in accordance with the provisions of DA PAM 750-8.

AIR FORCE ONLY: When a weapon is deployed or shipped to a repair facility for repairs and is expected to be returned to the owning organization, ensure a copy of each weapon's AFTO Form 105 is processed in accordance with guidance in TO 11W-1-10 and is sent with the weapon. The original AFTO Form 105 will remain with the owning organization.

Preparation

Process weapons for shipment as required by shipping documents and pertinent regulations.

DISPOSITION

Disqualified weapons which do not qualify for shipment will either be redistributed within the camp, post, base, or station, be repaired, or become candidates for overhaul, controlled exchange, or other disposition as required by existing regulations.

GENERAL INSPECTION CRITERIA

WARNING



Before starting an inspection, be sure to clear the weapon. Do not pull the trigger until the weapon has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. Failure to comply may result in death or personnel injury.

1. Before inspection, the weapon must be thoroughly cleaned of all grease, dirt, or other foreign matter that might interfere with its proper function or the use of gauges and tools during inspection.
2. Weapon must be free of burrs, rust, or corrosion on functional surfaces.
3. Parts must not be cracked, bent, distorted, or damaged and must be free of detrimental wear or looseness.
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 surface.
 - a. Satisfactory metal surfaces for weapons range from black to light gray. A worn shiny metal surface is objectionable. No rifle will be rejected unless exterior parts have a shine. All rear sights must have a dull gray or black finish on all surfaces that would cause a glare.
 - b. Minor loss of finish (shiny spots, nicks, scratches) on exterior surfaces of the barrel and compensator shall not be cause for rejection of weapons located in hands of troops at training centers. Large shiny surfaces, nicks, scratches, etc., can be restored by the use of SFL (WP 0048, Table 1, Item 28). Rifles (small arms) missing in excess of one-third or more of the exterior finish resulting in an unprotected, light-reflecting surface, are considered candidates for overhaul. The only authorized level of maintenance to phosphate finish small arms is depot.
6. Plastic components must not be cracked or damaged in such a way as to interfere with their structural strength. Surface cracks, bruises, or dents that do not affect their strength will not be cause for rejection. Cracks will be cause for rejection. Criteria for determining which cracks are repairable are in Table 1.
7. Barrels must be clean and free of corrosion such as that caused by moisture and powder fouling. Standards of serviceability are indicated in a through h below.
 - a. Pits in the chamber are allowable if they do not cause extraction difficulties.
 - b. Pits as wide as a land and $\frac{3}{8}$ in. (0.95 cm) or less in length are allowable for 5.56mm barrels. Pits not greater than the width of a land and less than $\frac{3}{8}$ in. (0.95 cm) long are permissible.
 - c. Scattered, uniformly fine pits, or fine pits in a densely pitted area are allowable.
 - d. Tool marks are acceptable regardless of length. They will appear as lines running laterally in the grooves, or may run spirally across the top of lands.
 - e. Ringed bores or bores ringed sufficiently to bulge the outside surface of the barrel are cause for rejection. However, faint rings or shadowy depressions do not indicate an unserviceable barrel and will not be cause for rejection. Gap in lined barrels will not be classified as a ringed bore.

GENERAL INSPECTION CRITERIA - Continued

- f. Lands that appear dark due to coating of gilding metal from projectiles will not be cause for rejection.
 - g. Barrel erosion gauges are provided for lined barrels. For detailed instructions in the use of the above gauge and for serviceability limits, see (WP 0026). The pre-embarkation mark will be used to reject worn rifle and carbine barrels during pre-embarkation inspection.
 - h. Flaking or checking (fine cracks) of chromium plate in barrels or chambers will not be cause for rejection, unless accompanied by pitting to the degree that extraction difficulties are encountered or accuracy is unacceptable.
8. Springs must be free of distortion and broken coils. Springs must have sufficient tension to perform their intended function.
 9. Screw heads must be in serviceable condition and threads must not be stripped. Internal threads must not be stripped.
 10. The sear, hammer, and/or 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 and selector lever checks are met in accordance with instructions in (WP 0026).
 11. Chips, flat spots, or bent striker points on firing pins will be cause for rejection.
 12. The cartridge engaging surfaces on extractors must not be chipped or deformed.
 13. Evidence of any damage to sights will be cause for a sight alignment check. Rear sight bases should have no movement.
 14. Rear sight elevating and windage mechanisms must operate with distinct clicks, without binding. Sights must have sufficient tension to retain their setting during firing. Graduations and numerals must be legible. Graduation filler is not required.
 15. Safeties must positively position in both the SAFE and FIRE positions. When in the SAFE position, the rifle must not fire when the trigger is squeezed; when in the FIRE position, the rifle must fire when the trigger is squeezed.
 16. All locking devices such as latches, magazine latches, or detents must be positive in action and must not become disengaged due to normal handling and firing. Retaining pins and similar devices must not be subject to accidental loss during use or transportation.
 17. Each weapon must be hand functioned to check for unusual binding, positive cocking action, and general operation. Dummy ammunition must be used to assure positive feeding, chambering, extracting, and ejecting action.

Table 1. 5.56mm, M16 Series Rifle and M4 Series Carbine.

Item	Standard
General	Clear rifle/carbine of any ammunition and inspect in accordance with General Inspection Criteria.
Barrel and barrel extension	Check barrel erosion. Use barrel erosion gauge P/N 13076673 for chrome lined rifle and carbine barrels. Stripping of lands and grooves shall not be cause for rejection unless so determined by barrel erosion gauge.

GENERAL INSPECTION CRITERIA - Continued

Table 1. 5.56mm, M16 Series Rifle and M4 Series Carbine - Continued.

Item	Standard
	<p>Visually inspect using chamber reflector tool.</p> <p>Pits 1/8 in. (0.31 cm) in length and those pits large enough to extend from the body of the chamber into the shoulder stop area and forcing cone area are cause for rejection. Large pits are defined as 1/8 in. (0.31 cm) or more in diameter as determined by visual inspection. Only closed flash suppressors are acceptable.</p> <p>Check barrel for straightness using straightness gauge. Gauge must pass freely through the bore to be acceptable, either dropped from the muzzle or chamber end.</p>
Front sight and gas tube	<p>Inspect gas tube for proper alignment with carrier key. Gas tube must not bind when mating with the key.</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Function fire is the responsibility of the owning unit.</p> <p>Evidence of gas leaks around the front sight connection of the gas tube shall be cause for rejection until rifle has been function fired to determine if the loss of gas is sufficient to cause malfunction. If malfunctions occur during function firing, repairs are necessary.</p> <p>Inspect front sight for damage.</p>
Bolt carrier group	<p style="text-align: center;">NOTE</p> <p>AIR FORCE ONLY: Use of non-serrated bolt carriers is acceptable for all mission requirements. Use of chrome plated bolts and/or bolt carriers are acceptable for all mission requirements. Use of any style extractor spring is acceptable for all mission requirements, replace extractor spring only when they no longer enable extraction of cartridges.</p>

GENERAL INSPECTION CRITERIA - Continued

Table 1. 5.56mm, M16 Series Rifle and M4 Series Carbine - Continued.

Item	Standard
	<p>Inspect bolt for elongated or oversized firing pin hole using plain plug gauge.</p> <p>Firing pin holes which permit the plain plug gauge to fully penetrate at any position on the circumference will be rejected.</p> <p>Bolt face with a cluster of pits which are touching or tightly grouped, covering an area measuring approximately 1/8 in. (0.31 cm) across will be rejected.</p> <p>Bolts which contain pits extending into the firing pin hole will not be rejected unless firing pin hole gauging check determines rejection.</p> <p>Bolts which contain individual pits or scattered pits will not be cause for rejection.</p> <p>Only phosphated bolt carriers are acceptable for Army use. Both phosphated and chrome plated bolts are acceptable for Air Force use.</p>
<p>Bolt locking lugs and bolt pin cam hole</p>	<p>Inspect for cracks in the locking lugs and cam pin hole area. Use a black light, if available; otherwise, use a glass of no more than 3X magnification or use inspection penetrant. Use instructions contained in inspection penetrant kit for application. If cracks are detected, the bolts will be replaced.</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Particular attention must be given to the area where the lugs meet the bolt body and around the side walls of the cam pin hole.</p> <p>Bolt rings must not be broken. Ring gaps must be properly spaced approximately 1/3 turn apart and not in line.</p> <p>Firing pin protrusion must be not less than 0.028 in. (0.071 cm) or more than 0.036 in. (0.091 cm). Use firing pin protrusion gauge.</p> <p>Socket head cap screws must be staked.</p> <p>Carrier key must not be dented where end mates with gas tube. Repair or replace damaged carrier keys.</p>

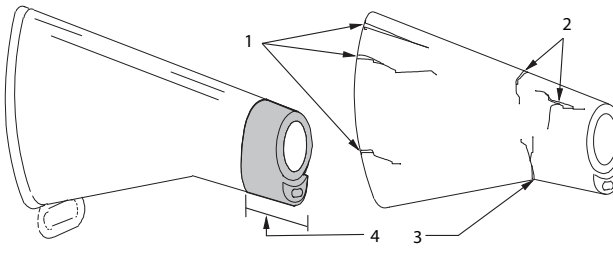
GENERAL INSPECTION CRITERIA - Continued

Table 1. 5.56mm, M16 Series Rifle and M4 Series Carbine - Continued.

Item	Standard
Headspace	Inspect headspace using headspace gauge. Excessive headspace will be cause for rejection.
Trigger pull	Inspect trigger pull using trigger measuring fixture. Test trigger pull (WP 0026).
Lower receiver group	<p>Inspect hammer and trigger pin holes using plain plug gauge. Penetration of the gauge in any of the four holes will be cause for rejection.</p> <p>Inspect for cracks, corrosion, or mutilation which would affect functioning. Small dents or gouges will not be cause for rejection.</p> <p>Inspect receiver for corrosion in the lobes of the pivot or hinge pin area. Width between lobes shall not exceed 0.515 in. (1.30 cm).</p> <p>Inspect receiver for break through of metal.</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Lower receivers without pivot pin detent may be used for all Air Force mission requirements.</p> <p>Inspect receiver and receiver extension for initial loss of protective coating.</p>
Action spring	<p style="text-align: center;">NOTE</p> <p style="text-align: center;">Minimum length measurement no longer required per MIM 16-013.</p> <p>RIFLE ONLY Free length of spring shall be a maximum of 13-1/2 in. (29.84-34.29 cm).</p> <p>CARBINE ONLY Free length of spring shall be a maximum of 11-1/4 in. (25.56-28.58 cm).</p>
Handguard	Inspect handguard assembly for breaks, separations, and cracks. Breaks and separations of material which prevent proper retention or interfere with functioning of the weapon will be cause for handguard rejection and replacement. Cracks up to 1 in. (2.54 cm) in length are acceptable provided they do not extend into the handguard retaining flange (critical area).

GENERAL INSPECTION CRITERIA - Continued

Table 1. 5.56mm, M16 Series Rifle and M4 Series Carbine - Continued.

Item	Standard
Buttstock assembly	<p>Inspect buttstock assembly for dents, cracks, and chips. Check for breaks and separation of material which could prevent proper functioning of weapon.</p> <p>RIFLE ONLY Under the following conditions, hairline cracks (Figure 1, Item 1) originating from buttplate end of buttstock are acceptable. No chipped away material is allowed.</p> <ul style="list-style-type: none"> a. One hairline crack, not to exceed 1 in. (2.54 cm) in length, per side of buttstock. b. Two additional hairline cracks up to 0.22 in. (0.55 cm) in length, per side of buttstock. <p>Buttstocks with unauthorized markings stamped into their surfaces will be replaced. Unauthorized markings, scratched, etched, carved, etc., are acceptable if they do not extend into the fiber of the buttstock which may weaken it. These marks may lie at any location on the buttstock.</p> <p>Cracks (Figure 1, Item 2) in the critical area at the front end of the buttstock (Figure 1, Item 3 and 4) are not acceptable and these buttstocks must be replaced.</p> <p>CARBINE ONLY Inspect for proper functioning. Repair as required.</p>  <p style="text-align: center;">Figure 1. Buttstock Inspection.</p>

END OF WORK PACKAGE

CHAPTER 5

**AUXILIARY EQUIPMENT MAINTENANCE INFORMATION
M16 SERIES RIFLES AND M4 SERIES CARBINES**

**MAINTAINER MAINTENANCE
AUXILIARY EQUIPMENT**

INITIAL SETUP:

Not Applicable

Table 1. Auxiliary Equipment.

Nomenclature	NSN
40mm Grenade Launcher M203 (Rifle Only)	1010-00-179-6447
40mm Grenade Launcher M203A1 (Carbine Only)	1010-01-434-9028
40mm Grenade Launcher M203A2 (M16A3/M16A4 Rifle or Carbine Only)	1010-01-495-8511
Advanced Target Point Illuminator Aiming Light PEQ15 (Black)	5855-01-534-5931
Advanced Target Point Illuminator Aiming Light PEQ15 (Tan)	5855-01-577-7174
Bayonet Knife M7	1005-00-073-9238
Bayonet-Knife Scabbard M10	1095-00-223-7164
Blank Firing Attachment M15A2 (Rifle Only) (Red)	1005-00-118-6192
Blank Firing Attachment M23 (Carbine Only) (Yellow)	1005-01-361-8208
Carrying Handle Assembly	1005-01-465-0401
Cleaning Kit, Individual	1005-01-624-1673
Close Quarters Battle Kit	1005-01-540-5549
Dual Beam Aim Light PEQ15A (Black)	5855-01-535-6166
Dual Beam Aim Light PEQ15A (Tan)	5855-01-579-0062
Enhanced Sliding Buttstock Assembly	1005-01-544-9825
Flashlight Mount (M16A3/M16A4 Rifle or Carbine Only)	5340-01-485-1916
Forward Grip Bipod	1005-01-563-8451

Table 1. Auxiliary Equipment - Continued.

Nomenclature	NSN
Forward Rail Bracket	1005-01-562-1866
Front Sight Tool	1005-01-660-5283
Heavy Weapon Thermal Sight (HWTS), AN/ PAS-13A(V)3	5855-01-458-0211
ILLUMINATOR, INTEGRATED, Storm Systems Kit AMPSQ 23 (Black)	5855-01-535-1905
ILLUMINATOR, INTEGRATED, Storm Systems Kit AMPSQ 23 (Tan)	5855-01-577-5946
ILLUMINATOR, INTEGRATED, Storm Systems Kit AMPSQ 23A (Tan)	5855-01-600-0486
Laser Borelight System	5860-01-471-2091
Light Weapon Thermal Sight (LWTS), AN/ PAS-13B(V)1	5855-01-464-3150
Lock Plate	1005-00-233-9031
M150 Sight, Rifle Combat Optic (RCO)	1240-01-557-1897
M2 Practice Bolt	1005-01-184-4041
M26 Modular Accessory Shotgun System (MASS)	1005-01-535-3487
M320 Grenade Launcher	1010-01-566-9083
M320A1 Grenade Launcher	1010-01-557-2542
M68 Reflex Sight Comp M2	1240-01-411-1265
M68 Reflex Sight Comp M4	1240-01-540-3690
M68 Reflex Sight Comp M4S	1240-01-576-6134
M9 Multi-Purpose Bayonet System	1005-01-227-1739
Medium Weapon Thermal Sight (MWTS), ANPAS-13A(V)2	5855-01-458-0210
Monocular Night Vision Device, AN/PVS-14	5855-01-432-0524
Multi-mag Holder	1005-01-562-9455
Squad Designated Marksmen (SDM) Bipod	1005-01-563-0152

Table 1. Auxiliary Equipment - Continued.

Nomenclature	NSN
Tactical Sling	1005-01-562-9457
Top Sling Adapter	1005-00-406-1570

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
LOCK PLATE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

References

TM 9-1005-319-10

Materials/Parts

Lock washer Qty: 1 (WP 0050, Table 1, Item 11)

Equipment Condition

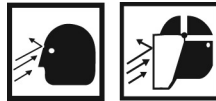
Weapon cleared (WP 0009)

Personnel RequiredSMALL ARMS/ARTILLERY REPAIRER 91F

INSTALLATION**NOTE**

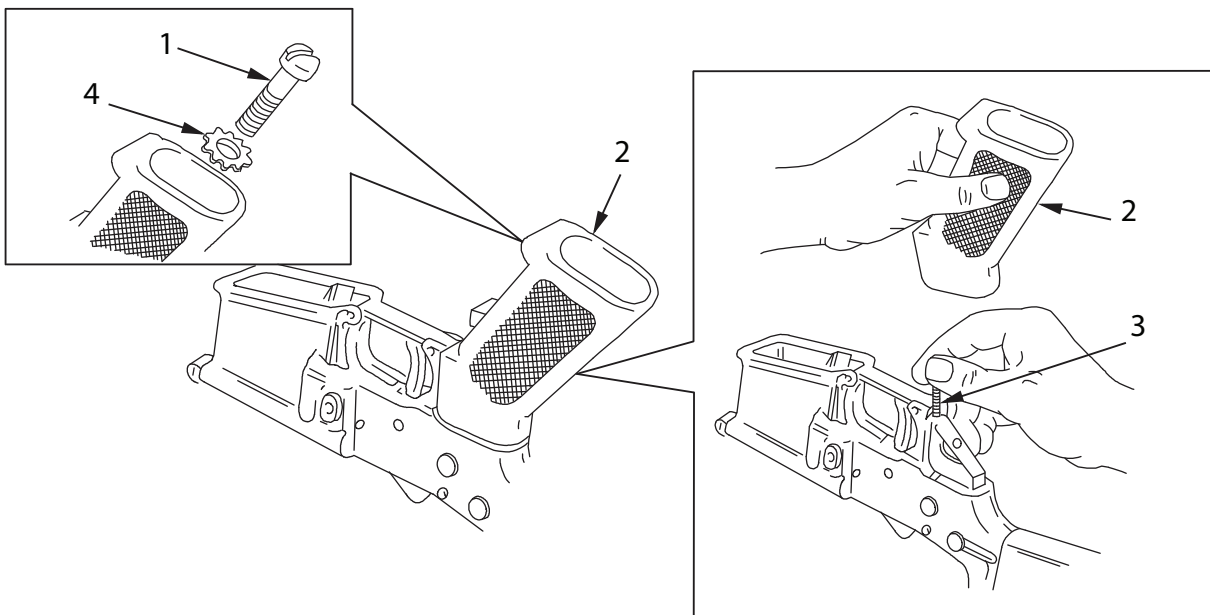
The lock plate prevents the selector lever from being placed in BURST/AUTO and will be installed at the discretion of the unit commander. It is mandatory for use in civil disturbance (riot control).

1. Remove screw (Figure 1, Item 1) and lock washer (Figure 1, Item 4) from pistol grip. Discard lock washer.

WARNING

To avoid injury to your eyes, use care when removing or installing spring loaded parts.

2. Carefully remove pistol grip (Figure 1, Item 2). Hold detent helical spring (Figure 1, Item 3) in place.



M16000243

Figure 1. Removing Pistol Grip for Lock Plate Installation.

3. Install lock plate (Figure 2, Item 2) with the detent helical spring (Figure 2, Item 1) passing through the hole in the right side of the lock plate and the arm on the outside of the receiver. The selector lever must point to the SAFE position.

INSTALLATION - Continued

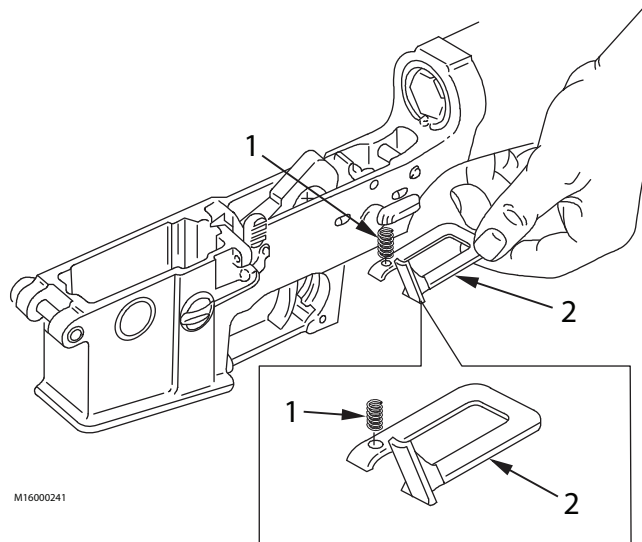


Figure 2. Installing Lock Plate.

4. Carefully compress detent helical spring (Figure 3, Item 1) and position pistol grip (Figure 3, Item 2).

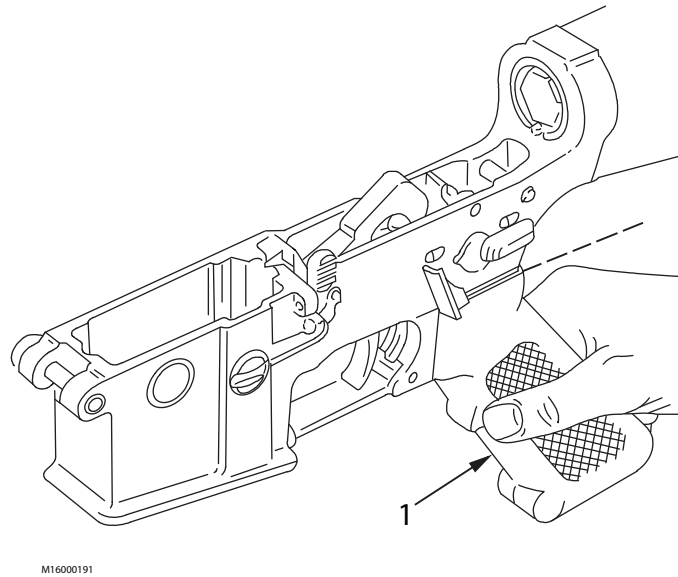


Figure 3. Positioning Pistol Grip with Lock Plate Installed.

INSTALLATION - Continued

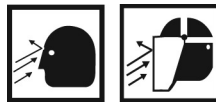
- Secure pistol grip (Figure 4, Item 2) by installing new lock washer (Figure 4, Item 4) and screw (Figure 4, Item 1).

END OF TASK**INSPECTION**

Inspect lock plate for serviceability and broken arm.

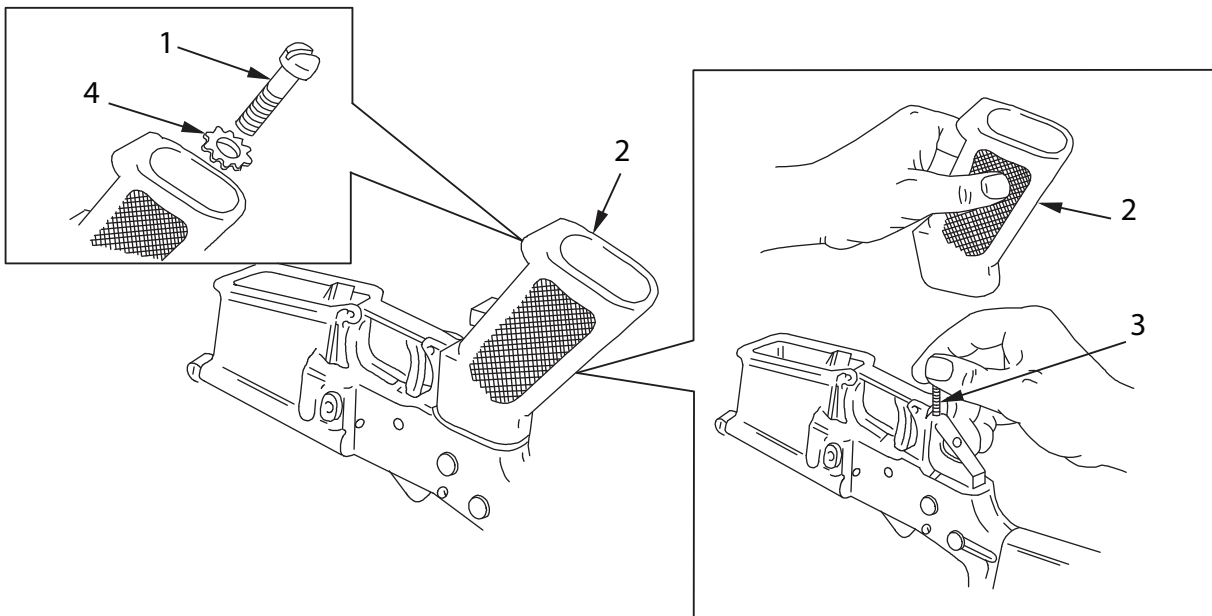
END OF TASK**REMOVAL**

- Remove screw (Figure 4, Item 1) and lock washer (Figure 4, Item 4) from pistol grip. Discard lock washer.

WARNING

To avoid injury to your eyes, use care when removing or installing spring loaded parts.

- Carefully remove pistol grip (Figure 4, Item 2). Hold detent helical spring (Figure 4, Item 3) in place.



M16000243

Figure 4. Removing Pistol Grip for Lock Plate Removal.

- Remove lock plate (Figure 5, Item 2) while continuing to hold the detent helical spring (Figure 5, Item 1) in place. The selector lever must point to the SAFE position.

REMOVAL - Continued

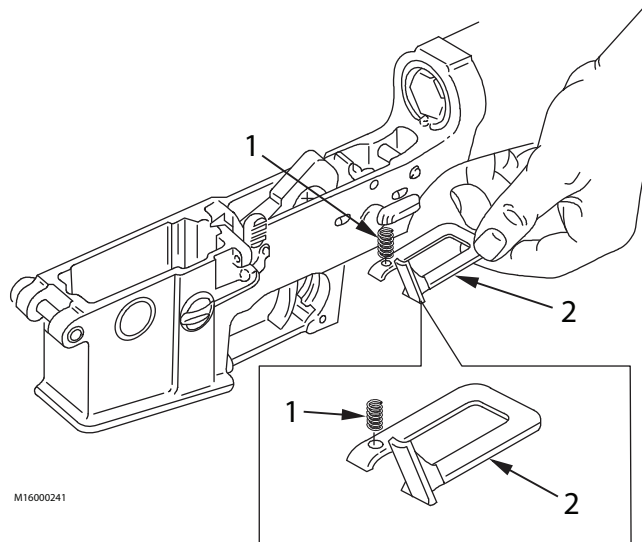
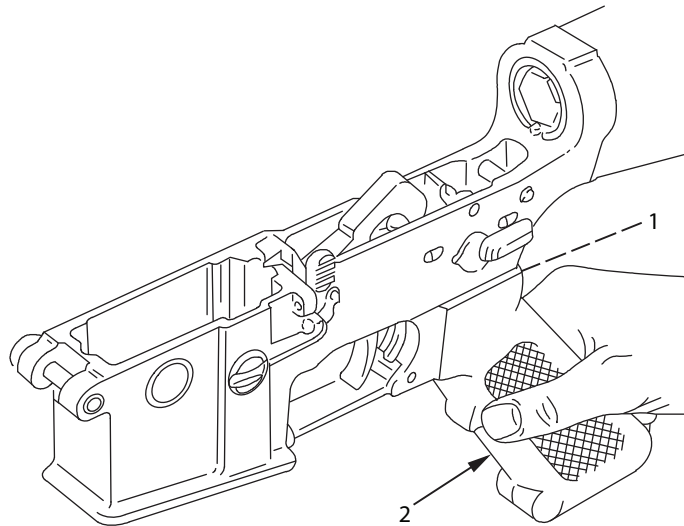


Figure 5. Remove Lock Plate.

4. Carefully compress detent helical spring (Figure 6, Item 1) and position pistol grip (Figure 6, Item 2).



M16000192

Figure 6. Positioning Pistol Grip with Lock Plate Removed.

REMOVAL - Continued

5. Install pistol grip (Figure 7, Item 2) with new lock washer (Figure 7, Item 3) and screw (Figure 7, Item 1).

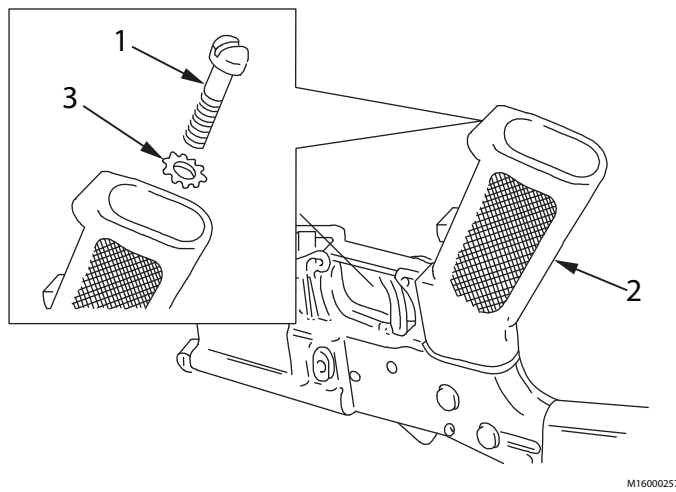


Figure 7. Securing Pistol Grip with Lock Plate Removed.

END OF TASK

FOLLOW-ON MAINTENANCE TASKS

Perform function check (TM 9-1005-319-10).

END OF TASK

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
CLOSE QUARTERS BATTLE SLING**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Materials/Parts

Rivet Qty: 1 (WP 0050, Table 1, Item 2)

Spring pin Qty: 2 (WP 0050, Table 1, Item 12)

Equipment Condition

Weapon cleared (WP 0009)

INSTALLATION**1. RIFLE ONLY**

Knock out tubular rivet (Figure 1, Item 1) and remove small sling swivel (Figure 1, Item 2). Discard tubular rivet.

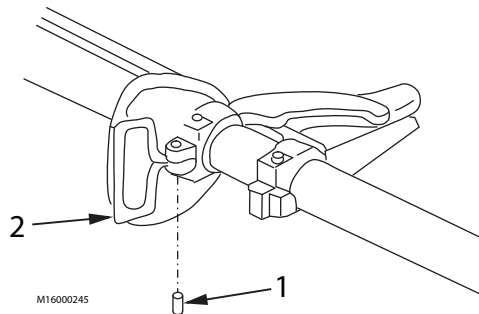
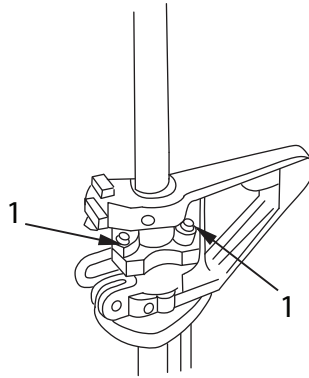


Figure 1. Removing Sling Swivel.

INSTALLATION - Continued**2. CARBINE ONLY**

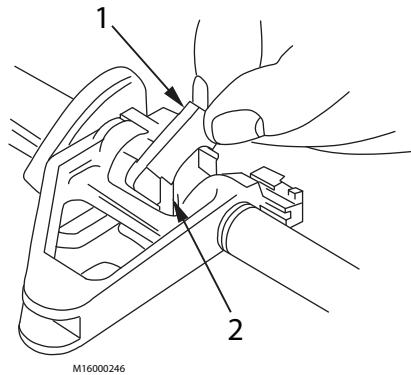
Remove two spring pins (Figure 2, Item 1). Discard spring pins.



M16000235

Figure 2. Removing Two Spring Pins.

3. Lift swivel locking bar (Figure 3, Item 1) up and out of swivel mount (Figure 3, Item 2).



M16000246

Figure 3. Removing Swivel Locking Bar.

4. Remove swivel mount (Figure 4, Item 1).

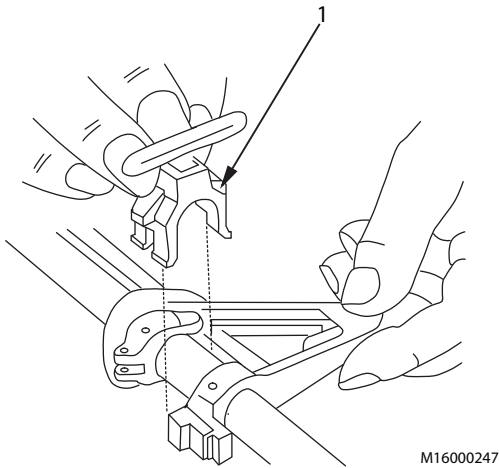
INSTALLATION - Continued

Figure 4. Removing Swivel Mount.

5. ALL WEAPONS

Install barrel band (Figure 5, Item 1) under front sight post. The barrel band must be bent out to fit around the barrel then bent back close after installation to ensure proper fit around the barrel.

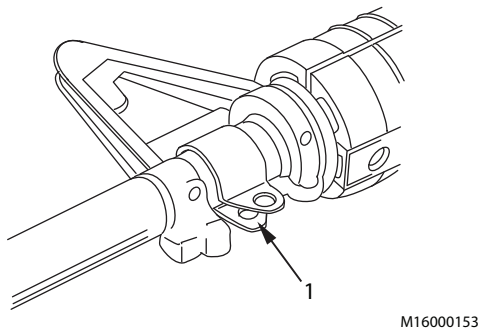


Figure 5. Installing Barrel Band.

INSTALLATION - Continued

6. Attach lanyard assembly to the barrel band using supplied hardware Figure 6.

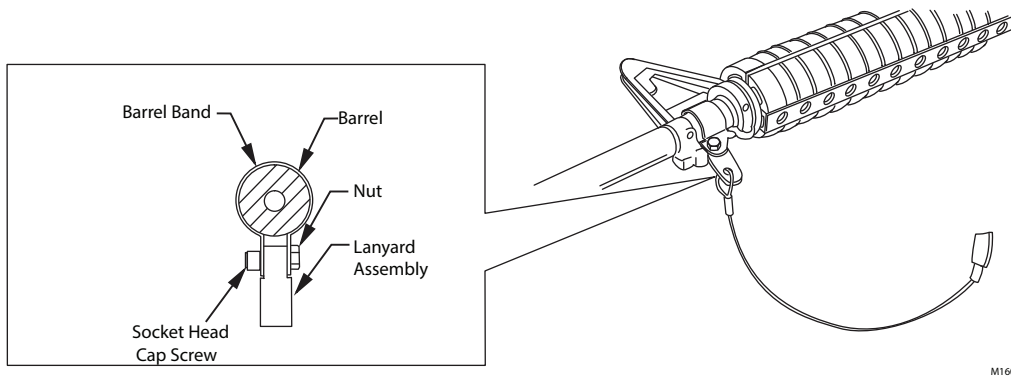


Figure 6. Attaching Lanyard Assembly.

7. Put the rear loop (Figure 7, Item 2) around the buttstock and pass the loop lock through the swivel.
8. Attach rear sling adapter (Figure 7, Item 1) to buttstock.

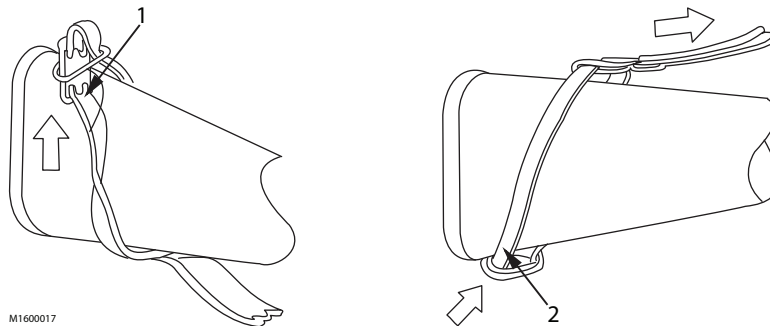


Figure 7. Attaching Rear Sling Adapter.

9. Assemble standard sling (Figure 8, Item 1) to rear sling adapter (Figure 8, Item 2).

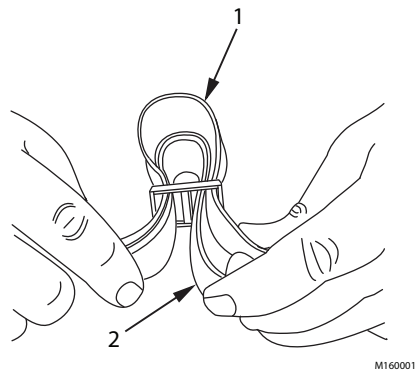


Figure 8. Assembling Sling to Rear Sling Adapter.

INSTALLATION - Continued

10. Attach end of standard sling (Figure 9, Item 1) to quick release swivel (Figure 9, Item 2).

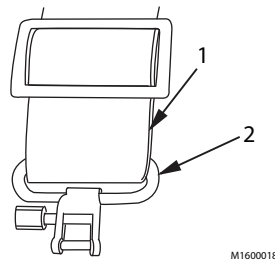


Figure 9. Attaching Sling to Quick Release Swivel.

11. Attach swivel (Figure 10, Item 1) to lanyard assembly. Unscrew nut counterclockwise while pulling outward, stopping when resistance is felt. Push inward on plastic nut and rotate plate a quarter turn.

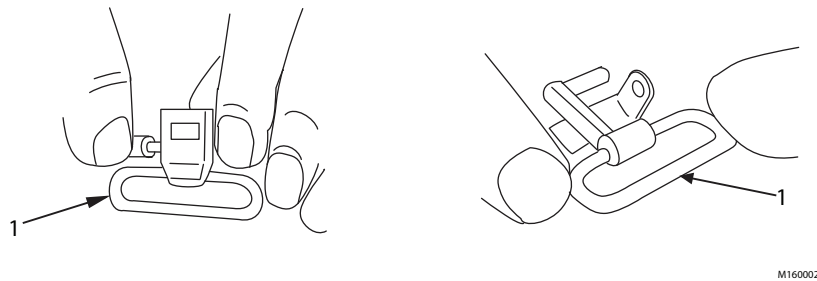


Figure 10. Attaching Swivel to Lanyard.

12. The swivel (Figure 11, Item 1) can be attached either to the lug on the end of the lanyard or to the lug attached to the barrel band. When the lanyard is attached to the barrel lug, note that the lanyard is dressed around the sling (Figure 11, Item 2) and inserted between the layers of the sling.

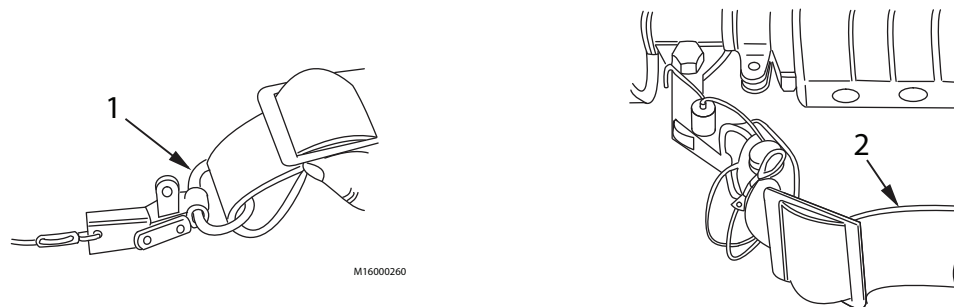


Figure 11. Securing Swivel and Lanyard.

END OF TASK

REMOVAL

1. Remove swivel (Figure 12, Item 1) from lanyard assembly.

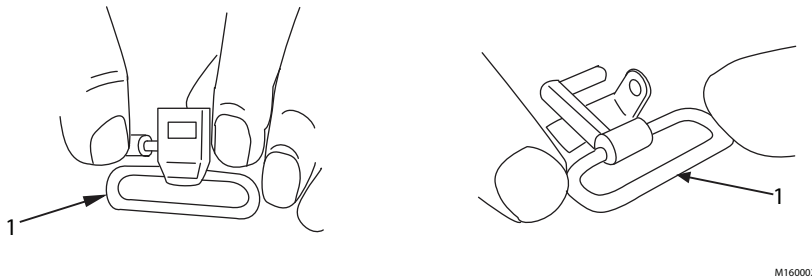


Figure 12. Remove Swivel from Lanyard.

2. Remove end of standard sling (Figure 13, Item 1) from quick release swivel (Figure 13, Item 2).

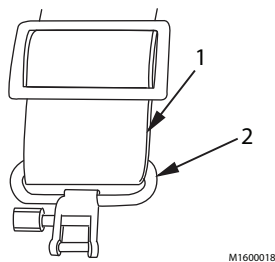


Figure 13. Remove Sling from Quick Release Swivel.

3. Remove standard sling (Figure 14, Item 1) from rear sling adapter (Figure 14, Item 2).

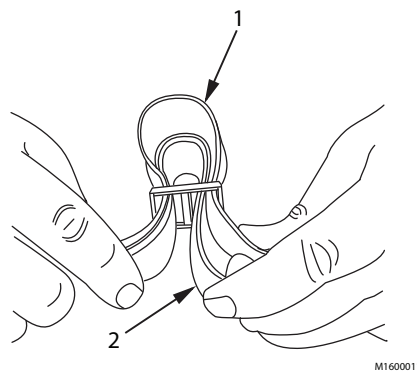


Figure 14. Remove Sling from Rear Sling Adapter.

4. Remove the rear loop (Figure 15, Item 2) and rear sling adapter (Figure 15, Item 1) from buttstock.

REMOVAL - Continued

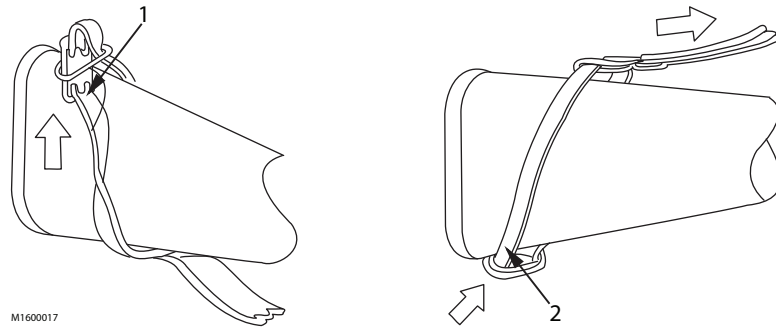


Figure 15. Remove Rear Sling Adapter.

5. Remove lanyard assembly from the barrel band Figure 16.

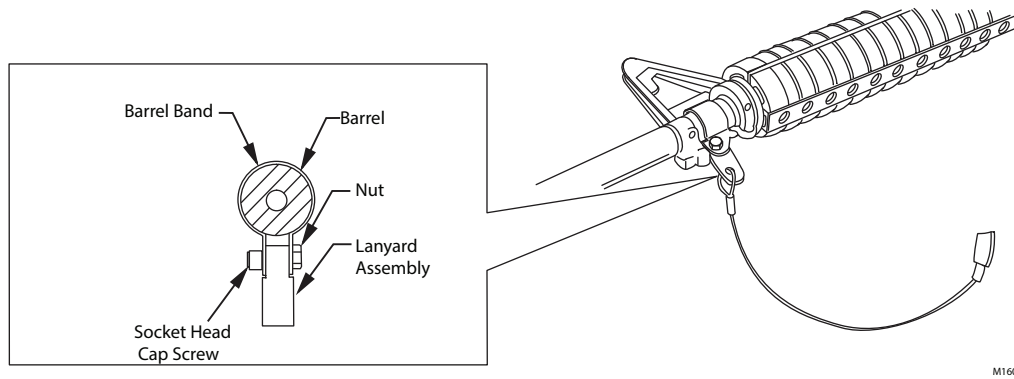


Figure 16. Removing Lanyard Assembly.

6. Remove barrel band (Figure 17, Item 1) from under front sight post. The barrel band must be bent to be removed.

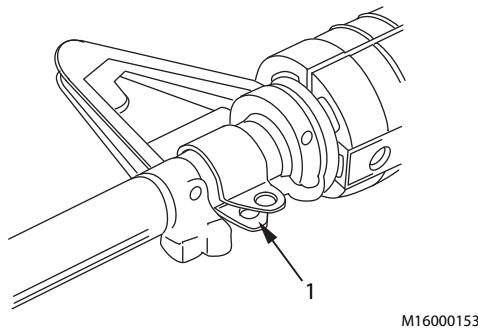


Figure 17. Remove Barrel Band.

7. **CARBINE ONLY**
Install swivel mount (Figure 18, Item 1).

REMOVAL - Continued

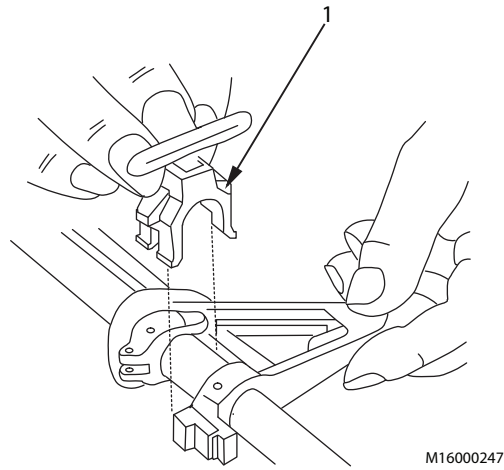


Figure 18. Install Swivel Mount.

8. Install swivel locking bar (Figure 19, Item 1) into swivel mount (Figure 19, Item 2).

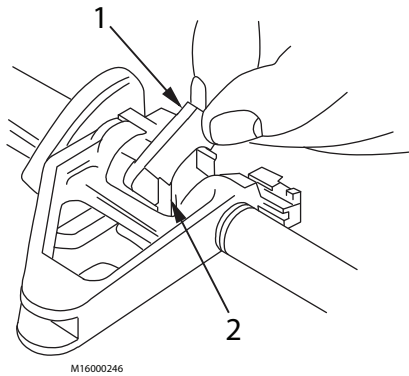


Figure 19. Install Swivel Locking Bar.

9. Install two new spring pins (Figure 20, Item 1).

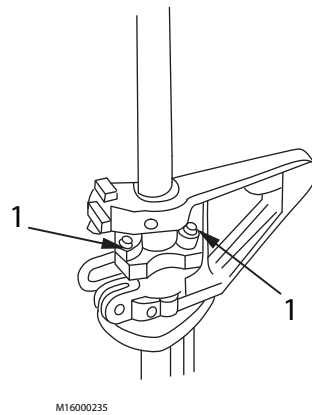
REMOVAL - Continued

Figure 20. Install Two Spring Pins.

10. RIFLE ONLY

Install new tubular rivet (Figure 21, Item 2) and small sling swivel (Figure 21, Item 1).

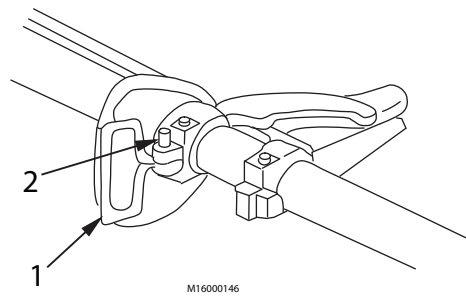


Figure 21. Install Sling Swivel.

END OF TASK

INSPECTION

Inspect close quarters battle sling for wear or damage.

END OF TASK

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
M12 STORAGE RACK**

INITIAL SETUP:

Tools and Special Tools

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Drill, electric (WP 0049, Table 1, Item 5)

Materials/Parts (cont.)

Olive drab enamel (WP 0048, Table 1, Item 22)
Rail protector (WP 0048, Table 1, Item 43)
Washer (WP 0048, Table 1, Item 53) Qty: 4

Materials/Parts

Machine screw (WP 0048, Table 1, Item 35)
Qty: 2
Mounting bracket (WP 0048, Table 1, Item 36)
Nut (WP 0048, Table 1, Item 37) Qty: 2

Personnel Required

ALLIED TRADE SPECIALIST 91E
SMALL ARMS/ARTILLERY REPAIRER 91F

INSTALLATION

1. CARBINE ONLY

When storing the M4 series Carbine in M12 storage rack, an adapter bar **MUST** be used for security reasons. Install the adapter bar to the M12 storage rack as follows:

NOTE

All dimensions shown are in inches with metric conversion to centimeters in parentheses.

- a. Fabricate adapter bar from 1 1/2 in. by 1 1/2 in. by 1/8 in. angle iron, NSN 9520-00-277-4902 or equivalent. Paint with olive drab enamel paint, NSN 8010-350-5249 or equivalent.

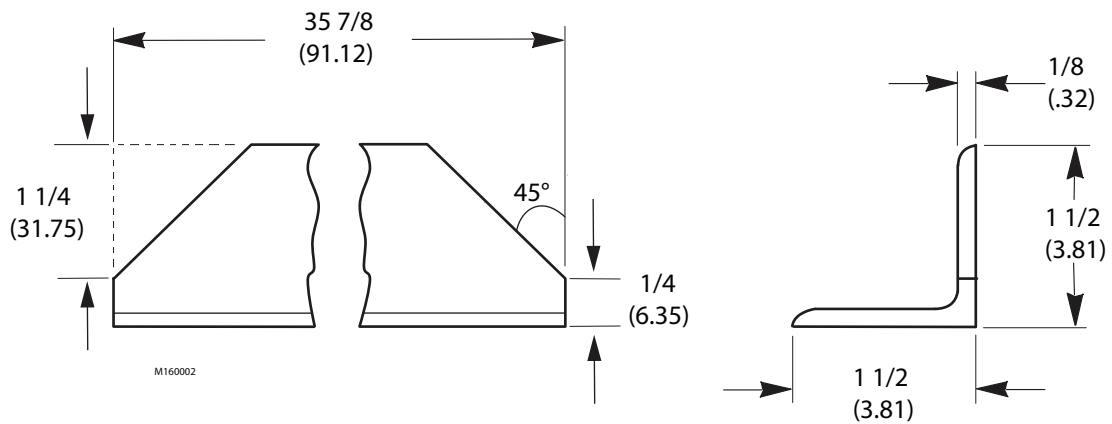


Figure 1. Adapter Bar for M12 Arms Rack.

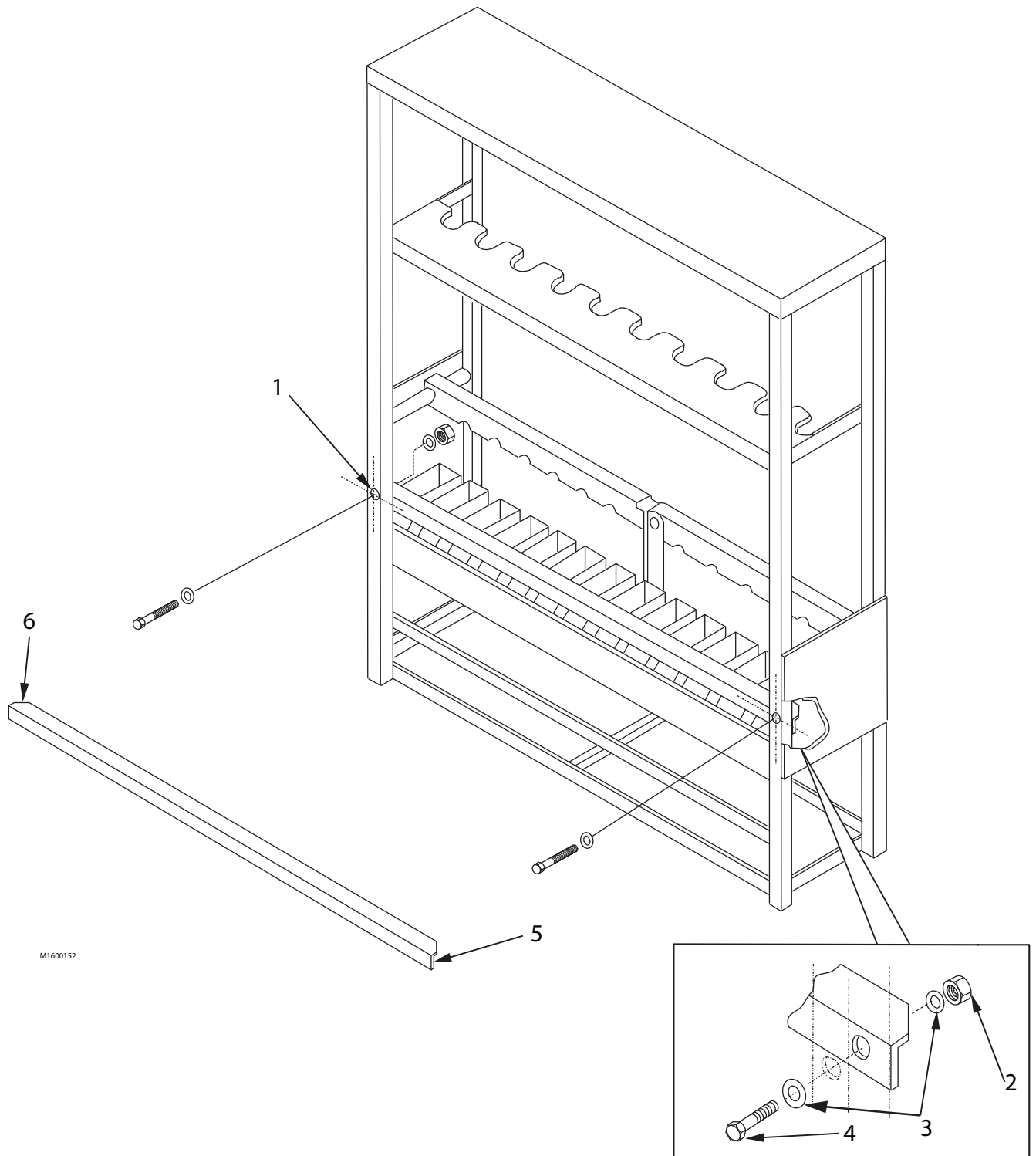
INSTALLATION - Continued

- b. Remove all weapons from the M12 storage rack and position the M12 storage rack to gain access to the back.
- c. The side of the adapter bar with the cut off corners (Figure 2, Item 6) is the top and the side with the square corners (Figure 2, Item 5) is the back. The portion of the bar must be placed so the cut corners face the front of the M12 storage rack.
- d. Holding the adapter bar at an angle, place one end into position inside the rear leg of the M12 storage rack. Lower the other end of the bar into position. Allow the adapter bar to rest on the M12 storage rack.
- e. Clamp both ends of the adapter bar into position. Mark the center line of the leg and adapter bar where they meet (Figure 2, Item 1). Mark location of the holes to be drilled where the center lines cross. The holes must be centered on both the leg and the adapter bar. Drill a 3/8 in. hole through both M12 storage rack legs and the ends of the adapter bar using the pilot holes as a guide. Remove the adapter bar. File the edges of all holes smooth. Paint all bare metal surfaces with olive drab enamel paint (WP 0048, Table 1, Item 22).

NOTE

- The bolts can be inserted from either the back or the front to meet your requirements.
 - If the M12 storage rack is placed close to a wall or another M12 storage rack, it is recommended that the bolts be inserted from the back.
- f. Reinsert the adapter bar into position on the M12 storage rack. Assemble adapter bar to M12 storage rack and tighten securely using two 3/8 in x 2 in machine screws (Figure 2, Item 4), four washers (Figure 2, Item 3), and two nuts (Figure 2, Item 2).
 - g. Tack weld, braze, or peen the threaded portion of the bolt to the nut to prevent easy removal.
 - h. Place M12 storage rack back into position and replace the weapons.

INSTALLATION - Continued



M1600152

Figure 2. Installing Adapter Bar on M12 Storage Rack.

INSTALLATION - Continued**NOTE**

It is necessary to either remove the carrying handle or move it back one notch in order to secure the locking bars of the M12 storage rack during storage of the M16A4 rifle and the M4 series Carbine. DO NOT mix carrying handles from one weapon to another; it may change the zero of the last weapon.

2. Rail protector shall be used during storage of the carbines when the carrying handle assembly or some accessory is not installed on the upper receiver to prevent damage to the mounting surface on the upper receiver.

NOTE

- Organizations that are having difficulty securing the M16A4 rifle with M5 adapter rail system mounted or M4 series Carbine with M4 adapter rail system mounted are authorized the following minor alteration to the M12 storage rack.
- Due to differing physical dimensions of the M12 storage racks (construction tolerances), a locking bar is required when storing M16A4 rifles or M4 series Carbine with adapter rail systems installed.

3. Fabricate and install locking bar as follows:

NOTE

The best length of the locking bar for each storage rack varies. The bar should be cut to the length that gives a very tight fit to ensure the M12 storage rack will meet arms rack certification criteria when using this locking bar. Measure and cut each length of angle iron to best fit each storage rack.

- a. Cut each piece of stock 1 1/2 in. x 1 1/2 in. x 1/8 in. angle iron needed for locking bars (one for each M12 storage rack). The dimensions shown below are approximate. Place the cross locking bars of the M12 storage rack in the up (unlocked) position.
- b. Place each piece of cut angle iron on each M12 storage rack separately to identify the location for the lock hole. Place the angle iron on the M12 storage rack with the angle iron behind the M12 storage rack lock hole. From the front of the M12 storage rack, trace the M12 lock hole onto the locking bar. The traced hole on the locking bar is larger than 3/8 in. (0.92 cm).
- c. Drill a 3/8 in. (0.92 cm) hole in the locking bar close to the top of the oversized traced hole on the angle iron. Ensure that as much metal as possible is left in the bottom portion of the angle iron's lock hole when drilling (1/8 in. (0.32 cm) minimum). Grind all cut and drilled surfaces to remove burrs.
- d. Position the two cross locking bars of the M12 storage rack in the up position.
- e. Place the M16A4, M4, or M4A1 weapons with the mounted adapter rail systems in the M12 storage rack.
- f. Place the fabricated M12 locking bar on the M12 storage rack with the lock hole of the locking bar behind the lock hole of the M12 storage rack. Place a series 5200 lock through the lock holes and lock.

INSTALLATION - Continued

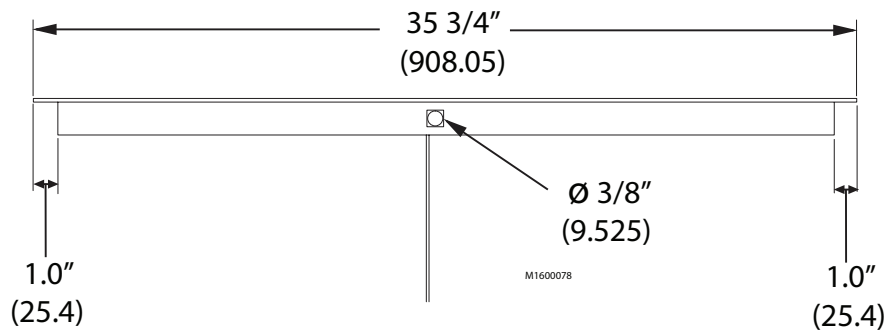


Figure 3. Fabrication of Locking Bar.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
CARRYING HANDLE ASSEMBLY MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Small Arms Tool Kit (WP 0049, Table 1, Item 23)
Caps, vise jaw (WP 0049, Table 1, Item 2)
Vise, machinist's (WP 0049, Table 1, Item 27)

Materials/Parts

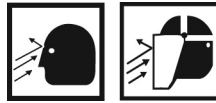
Cleaner, Lubricant, and Preservative (CLP)
(WP 0048, Table 1, Item 12)
Index screw (WP 0050, Table 1, Item 3)
Solid Film Lubricant (SFL) (WP 0048,
Table 1, Item 28)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Equipment Condition

Weapon cleared (WP 0009)
Carrying handle removed (TM 9-1005-319-10)

DISASSEMBLY**WARNING**

To avoid injury to eyes, use care when removing spring-loaded parts.

1. Drive out spring pin (Figure 1, Item 8). Catch helical spring (Figure 1, Item 7).
2. Rotate elevating mechanism (Figure 1, Item 1) until rear sight assembly (Figure 1, Item 3) clears gun carrying handle (Figure 1, Item 6). Catch ball bearing (Figure 1, Item 5) and helical spring (Figure 1, Item 4).
3. Push elevating mechanism (Figure 1, Item 1) out using slight rotation motion. Catch ball bearing (Figure 1, Item 10) and helical spring (Figure 1, Item 9).
4. Remove index screw (Figure 1, Item 2). Discard index screw. Separate elevating mechanism (Figure 1, Item 1) from knob (Figure 1, Item 11).

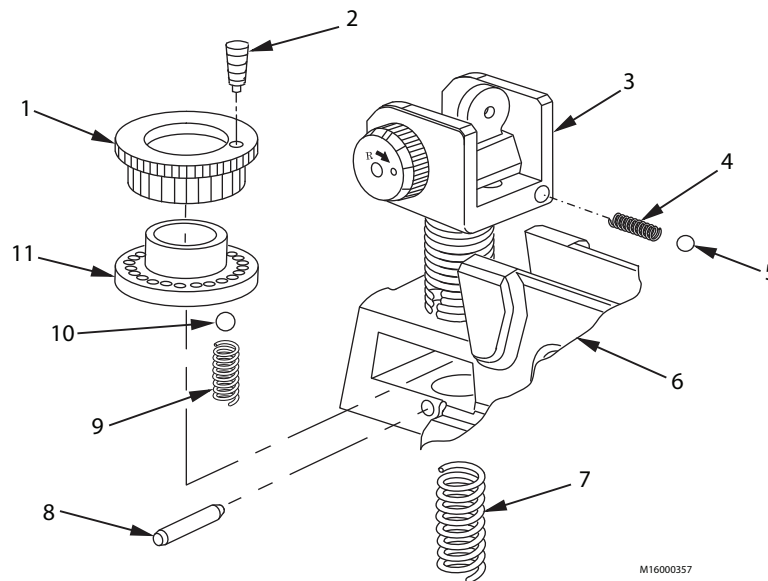


Figure 1. Disassembly of Carrying Handle Assembly.

END OF TASK**INSPECTION**

1. Check rear sight parts for serviceability. Inside of apertures should be round and distinct.
2. Inspect rear sight assembly helical springs and ball bearings for breaks, bends, and missing parts. Ball bearings should be smooth and round.
3. Check elevating mechanism for legibility of markings.
4. Check rear sight assembly for serviceability. Clear drain holes for springs. Threaded portion of rear sight assembly and knob should be well formed.
5. Inspect rear sight guards for bends.

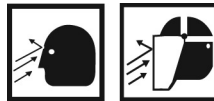
INSPECTION - Continued

6. Inspect all parts for damage and wear.

END OF TASK**REPAIR****NOTE**

The following procedure is to repair bent rear sight guards.

1. Place carrying handle assembly (Figure 2, Item 2) in a vise using jaw clamps. Tighten vise.
2. Using two adjustable wrenches, gradually bend guards (Figure 2, Item 1) to straighten. When bending the guards, gradually bend beyond the straight point as the guard will partially return when bending pressure is stopped.
3. After straightening, use a flat file to remove any nicks, kinks, or burrs that remain on the inside of guards (Figure 2, Item 1).

WARNING**SOLID FILM LUBRICANT****CAUTION**

Do not use wire brush on aluminum surfaces.

4. Apply SFL (WP 0048, Table 1, Item 28) to brightened area for final protective coating.
5. If rear sight guards cannot be straightened utilizing the above procedures, replace the carrying handle assembly.

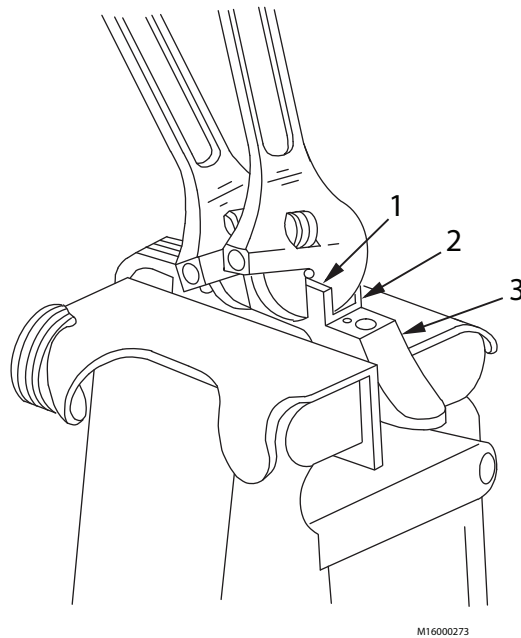
REPAIR - Continued

Figure 2. Straightening Rear Sight Guards.

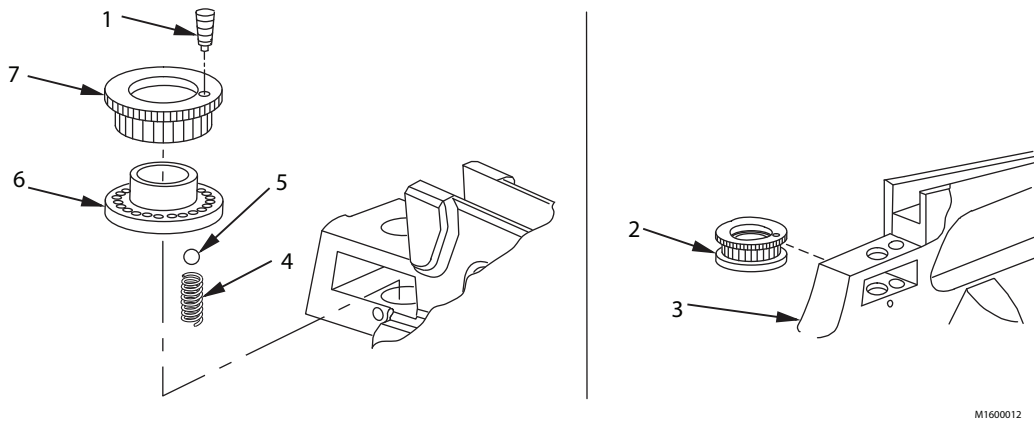
END OF TASK**LUBRICATION**

Lubricate rear sight assembly. Apply CLP (WP 0048, Table 1, Item 12) to helical springs and ball bearings and threaded portion of index screw before installation. Lubricate helical springs and ball bearings through their respective drain holes.

END OF TASK**ASSEMBLY**

1. Assemble knob (Figure 3, Item 6), elevating mechanism (Figure 3, Item 7), and new index screw (Figure 3, Item 1). Do not overtighten index screw as scale will require adjustment.
2. Install ball bearing (Figure 3, Item 5) and helical spring (Figure 3, Item 4).
3. Depress ball bearing (Figure 3, Item 5) and slide elevation knob assembly (Figure 3, Item 2) into weapon carrying handle (Figure 3, Item 3) from the side. Center elevation knob assembly.

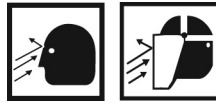
ASSEMBLY - Continued



M1600012

Figure 3. Assembly and Installation of Elevation Knob Assembly.

ASSEMBLY - Continued

WARNING

To avoid injury to eyes, use care when installing spring-loaded parts.

4. Install helical spring (Figure 4, Item 2) and ball bearing (Figure 4, Item 3).
5. Insert threaded portion of rear sight assembly (Figure 4, Item 1) into gun carrying handle (Figure 4, Item 5) and rotate elevation knob assembly (Figure 4, Item 4) until threads engage.
6. Rotate elevation knob assembly (Figure 4, Item 4) until rear sight assembly (Figure 4, Item 1) is all the way down. Then come up 22 clicks before installing spring pin.

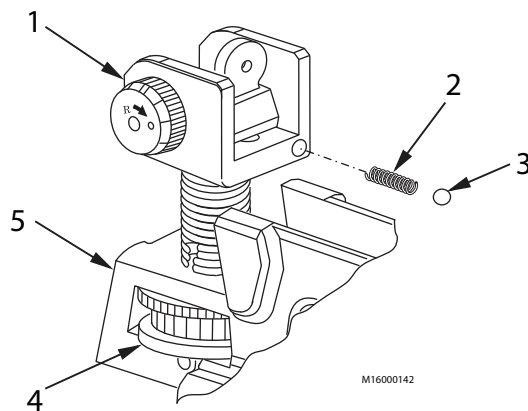


Figure 4. Installation of Rear Sight Assembly.

7. Insert helical spring (Figure 5, Item 5) through underside of gun carrying handle (Figure 5, Item 2). Compress helical spring to install spring pin (Figure 5, Item 1). Spring pin must pass over helical spring, not through its coils. Rotate elevation knob assembly (Figure 5, Item 3) until rear sight assembly (Figure 5, Item 4) is all the way down.

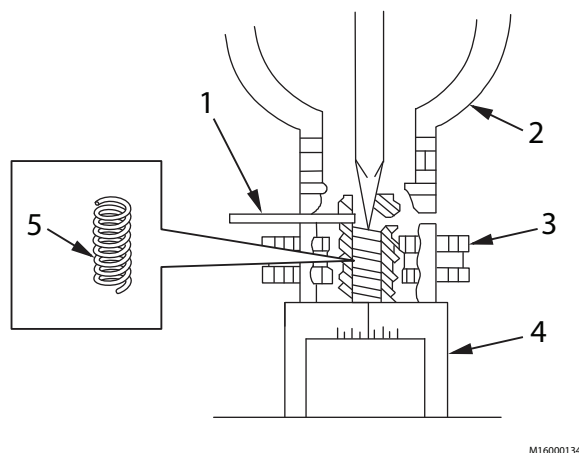
ASSEMBLY - Continued

Figure 5. Installation of Helical Spring.

END OF TASK**TEST**

1. Rotate and test elevating mechanism for ease of functioning.
2. Test elevation knob zero as follows:
 - a. Rotate knob counterclockwise until the rear sight assembly is all the way down. If a whole click is not felt as the rear sight assembly stops, the rear sight assembly has bottomed out and will not pivot freely.
 - b. Position knob back slightly to its last whole click so the rear sight assembly is under tension of ball bearing and helical spring. The 300 meter mark should align with mark on carrying handle assembly on the left side.

NOTE

The elevation knob should stop on the 300 meter mark $\frac{8}{3}$ on the M16A2 and $\frac{6}{3}$ on the M16A3, M16A4, M4, and M4A1.

- c. If 300 meter mark is not aligned with mark on receiver, slip range scale in the following manner:
 - (1) Position 300 meter mark with mark on receiver.
 - (2) Loosen index screw three turns.
 - (3) Rotate lower portion of elevation knob counterclockwise until it stops (range scale should not have moved). Elevation knob should be positioned on its last whole click.
 - (4) Tighten index screw.
 - (5) Check for proper setting.

END OF TASK

FOLLOW-ON MAINTENANCE TASKS

Install carrying handle (TM 9-1005-319-10).

END OF TASK

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
ILLUSTRATED LIST OF MANUFACTURED ITEMS INTRODUCTION**

INITIAL SETUP:

Not Applicable

ILLUSTRATED LIST OF MANUFACTURED ITEMS INTRODUCTION**Scope**

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

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 that 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. Index of Manufactured Items (Fabricated Tools).

Item	P/N	Name	Work Package
1	NPN	Pivot pin removal tool	(WP 0035)
2	NPN	Pivot pin installation tool	(WP 0036)
3	NPN	Slave pin	(WP 0037)
4	NPN	Modified needle nose pliers	(WP 0038)

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
PIVOT PIN REMOVAL TOOL**

INITIAL SETUP:**Materials/Parts**

1/16 in. Socket Head Screw Key Qty: 1 (WP
0049, Table 1, Item 22)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Pivot Pin Removal Tool**NOTE**

All dimensions shown are in inches with metric conversion to centimeters in parentheses.
Fabricate from 1/16 in. socket head screw key, NSN 5120-00-198-5398 or equivalent.

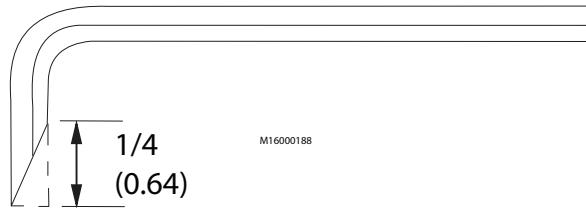


Figure 1. Pivot Pin Removal Tool.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
PIVOT PIN INSTALLATION TOOL**

INITIAL SETUP:

Materials/Parts

0.245 in. steel AISI 1095 Qty: 1 (WP 0048, Table
1, Item 49)

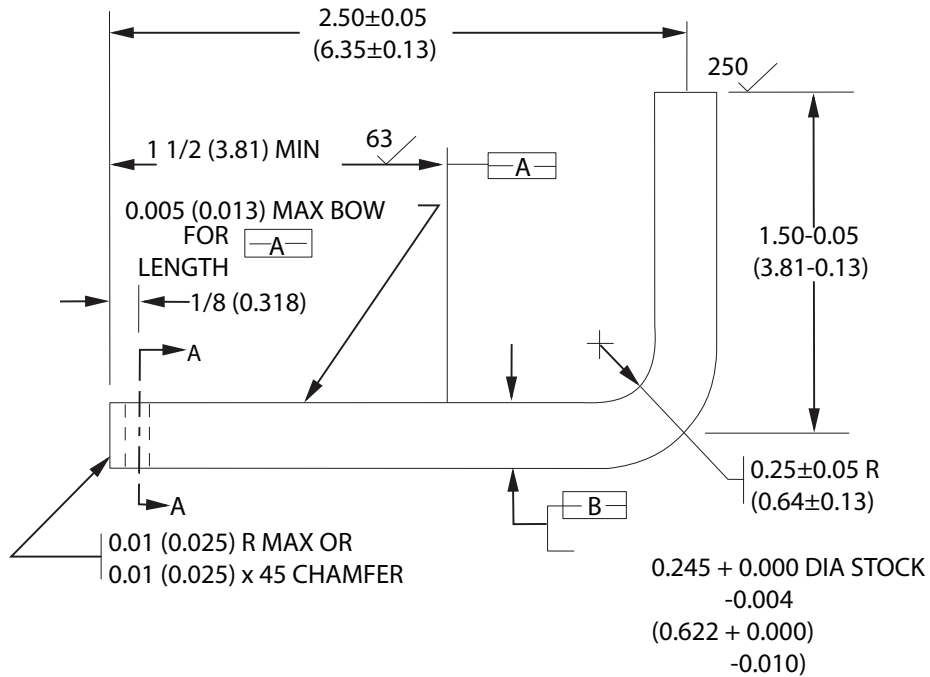
Personnel Required

ALLIED TRADE SPECIALIST 91E

Pivot Pin Installation Tool

NOTE

All dimensions shown are in inches with metric conversion to centimeters in parentheses.
 Fabricate from 0.245 in. AISI 1095 or equivalent. Harden and temper to RC 57.61 for length -A- Finish: N.O. 5.3.1.2 or 5.3.2.2 of MIL-STD-171.



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SECTION A-A

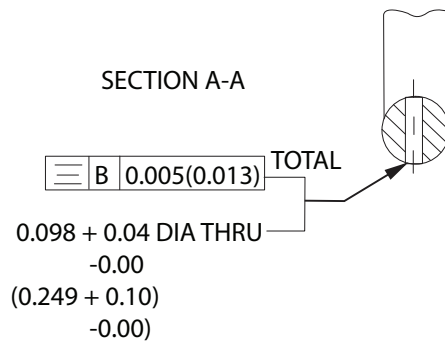


Figure 1. Pivot Pin Installation Tool.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
SLAVE PIN**

INITIAL SETUP:

Materials/Parts

Block wire, steel alloy Qty: 1 (WP 0048, Table 1, Item 50)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Slave Pin

NOTE

All dimensions shown are in inches with metric conversion to centimeters in parentheses.
Fabricate from old trigger pin (View A) or fabricate slave pin (View B) from material block, wire, steel alloy, Grade 4140, ASTM-A547 or equivalent.

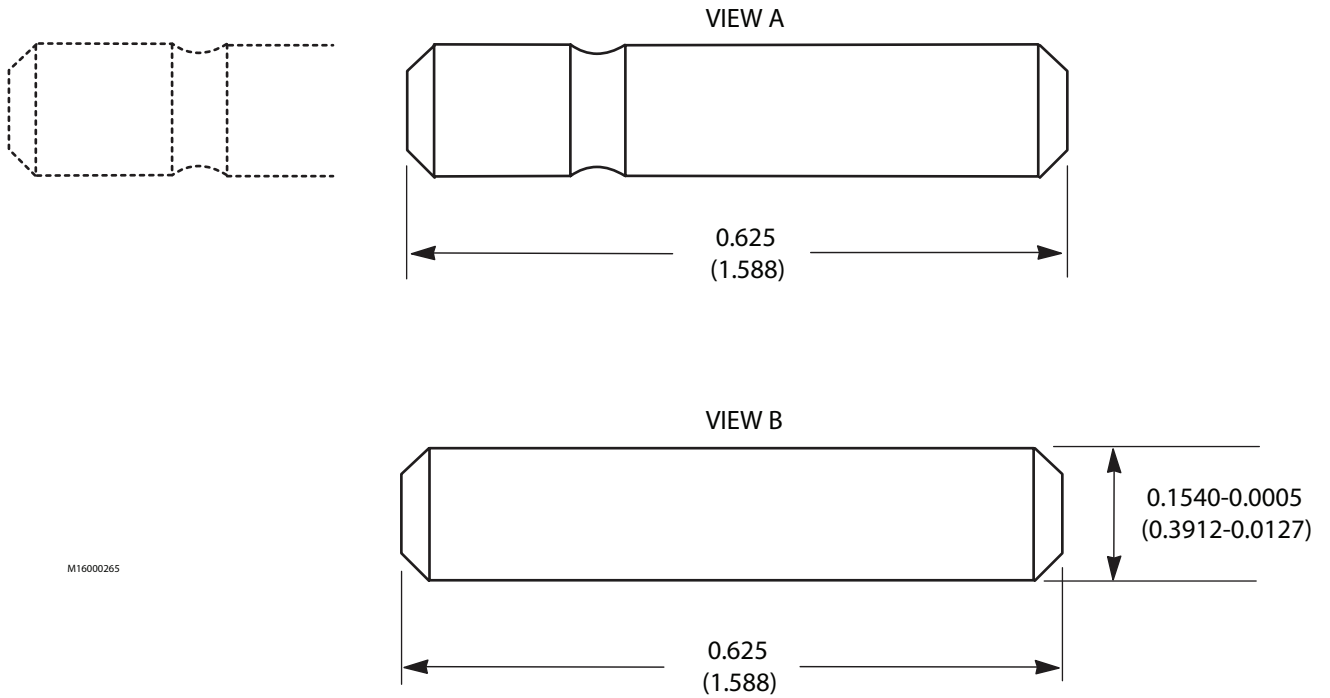


Figure 1. Slave Pin.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE
MODIFIED NEEDLE NOSE PLIERS**

INITIAL SETUP:

Materials/Parts

Needle nose pliers Qty: 1 (WP 0049, Table 1,
Item 18)

Personnel Required

SMALL ARMS/ARTILLERY REPAIRER 91F

Modified Needle Nose Pliers

NOTE

All dimensions shown are in inches with metric conversion to centimeters in parentheses.
 Fabricate from needle nose pliers, NSN 5120-00-268-3579 or equivalent.

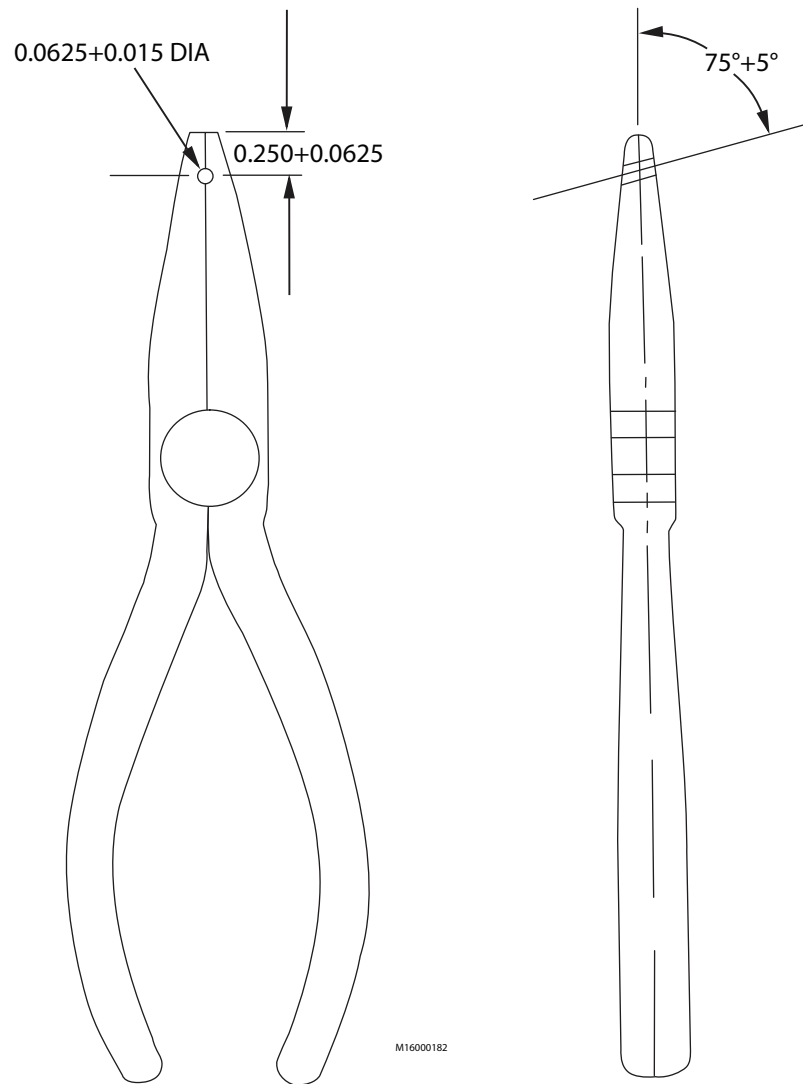


Figure 1. Modified Needle Nose Pliers.

END OF WORK PACKAGE

CHAPTER 6

**REPAIR PARTS INFORMATION
M16 SERIES RIFLES AND M4 SERIES CARBINES**

**MAINTAINER
REPAIR PARTS AND SPECIAL TOOLS (RPSTL) INTRODUCTION**

INTRODUCTION**SCOPE**

This RPSTL lists the authorized spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of maintainer maintenance of the M16 series Rifle and M4 series Carbine. 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 spare and repair parts authorized for use in the performance of maintenance at the levels determined by the MAC/SMR code. 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 the Bulk Items work package which follows the last Parts List work package.
2. **Bulk Items Work Package.** This work package lists all items identified as 'bulk' in the parts lists. Due to the nature of bulk items, this work package does not include a Figure.
3. **Special Tools List Work Packages.** This work package lists those 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.
4. **Cross-Reference Indexes Work Packages.** There are two cross-reference indexes work packages in this RPSTL. The National Stock Number (NSN) Index work package refers you to the Figure and item number for each NSN listed in the RPSTL. The Part Number Index work package refers you to the figure and item number for each part number listed in the RPSTL.

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 containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout. This entry may be subdivided into 4 subentries, one for each service.

Table 1. SMR Code Explanation.

SOURCE CODE	MAINTENANCE CODE	RECOVERABILITY CODE
<u>XX</u> xxx	xx <u>XX</u> x	xxxx <u>X</u>

Table 1. SMR Code Explanation - Continued.

SOURCE CODE	MAINTENANCE CODE		RECOVERABILITY CODE
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.

NOTE

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 you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Table 2. Source Code Explanation.

SOURCE CODE	APPLICATION/EXPLANATION
PA	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code. NOTE Items coded PC are subject to deterioration.
PB	
PC	
PD	
PE	
PF	
PG	
PH	
PR	
PZ	
KD	Items with these codes are not to be requested/requisitioned individually. They are part of a kit that is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
KF	
KB	
MF-Made at maintainer class	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) entry and listed in the bulk material group work package of the RPSTL. If the item is authorized to you by the third position code of the SMR
MH-Made at below depot sustainment	

Table 2. Source Code Explanation - Continued.

SOURCE CODE	APPLICATION/EXPLANATION
ML-Made at SRA	code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.
MD-Made at depot	
MG-Navy only	
AF-Assembled by maintainer class	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 code 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.
AH-Assembled by below depot sustainment class	
AL-Assembled by SRA	
AD-Assembled by depot	
AG-Navy only	
XA	
XB	If an item is not available from salvage, order it using the CAGEC and part number.
XC	Installation drawings, diagrams, instruction sheets, field service drawings, identified by the manufacturer's part number.
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.
	<p style="text-align: center;">NOTE</p> <p>Cannibalization of controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.</p>

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 one of the following levels of maintenance:

Table 3. SMR Maintenance Code Third Position.

MAINTENANCE CODE	APPLICATION/EXPLANATION
C	Crew
F	Maintainer maintenance can remove, replace, and use the item.
H	Below depot sustainment maintenance can remove, replace, and use the item.
L	Specialized repair activity 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, replace, or used at any maintenance level.
D	Depot can remove, replace, and use the item.

NOTE

Army will use C in the third position. However, for joint service publications, other services may use O.

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 class with the capability to do complete repair (perform all authorized repair functions).

Table 4. SMR Maintenance Code Fourth Position.

<u>MAINTENANCE/ CODE</u>	<u>APPLICATION/EXPLANATION</u>
C	Crew (operator) is the lowest class that can do complete repair.
F	Maintainer 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	Specialized repair activity 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).
K	Complete repair is done at contractor facility.

Table 4. SMR Maintenance Code Fourth Position - Continued.

<u>MAINTENANCE/</u> <u>CODE</u>	<u>APPLICATION/EXPLANATION</u>
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. No parts or special tools are authorized for the maintenance of a "B" coded item. However, the item may be reconditioned by adjusting, lubrication, 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 entered in the fifth position of the SMR code as follows:

Table 5. SMR Recoverability Code Fifth Position.

<u>RECOVERABILITY/</u> <u>CODE</u>	<u>APPLICATION/EXPLANATION</u>
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 repairable, condemn and dispose of the item at the field level.
H	Reparable item. When uneconomically repairable, 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 an item not authorized below depot level.
L	Reparable item. Condemnation and disposal of the item not authorized below Specialized Repair Activity (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 repairable 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(s) for the item is listed in this column.

CAGEC (Column (4)). The Commercial and Government Entity Code (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 part number from the number listed.

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 any bulk materials required if the item is to be locally manufactured or fabricated.
3. Hardness Critical Item (HCI). Items that require special handling or procedures to ensure protection against electromagnetic pulse (EMP) damage are marked with the letters 'HCI.'
4. The statement END OF FIGURE appears below the last item description in column (6) for each Figure in the repair parts list, special tools repair parts, kits, bulk items, and special tools list work packages.
5. Refer to Usable on Code details presented later in this work package under SPECIAL INFORMATION.

QTY (Column (7)). The QTY (quantity per Figure) column indicates the quantity of the item used in the breakout shown on the illustration/Figure. 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. This column 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 which are all numbers are listed first in ascending alphanumeric sequence (vertical arrangement of letter and number combinations 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. This 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. Examples of the UOCs used in the RPSTL are:

Table 6. Usable On Codes.

<u>CODE</u>	<u>USED ON</u>
AR8	M16A2 Rifle

Table 6. Usable On Codes - Continued.

CODE	USED ON
AW4	M16A3 Rifle
AZ1	M16A4 Rifle
AS1	M4 Carbine
AY6	M4A1 Carbine

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. Part numbers for bulk materials are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated.

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.

Associated Publications

Table 7. Associated Publications.

PUBLICATION	SHORT TITLE
TM 9-1005-319-10	Operator Manual for RIFLE, 5.56 MM, M16A2, M16A3, M16A4, CARBINE, 5.56 MM, M4, M4A1

HOW TO LOCATE REPAIR PARTS

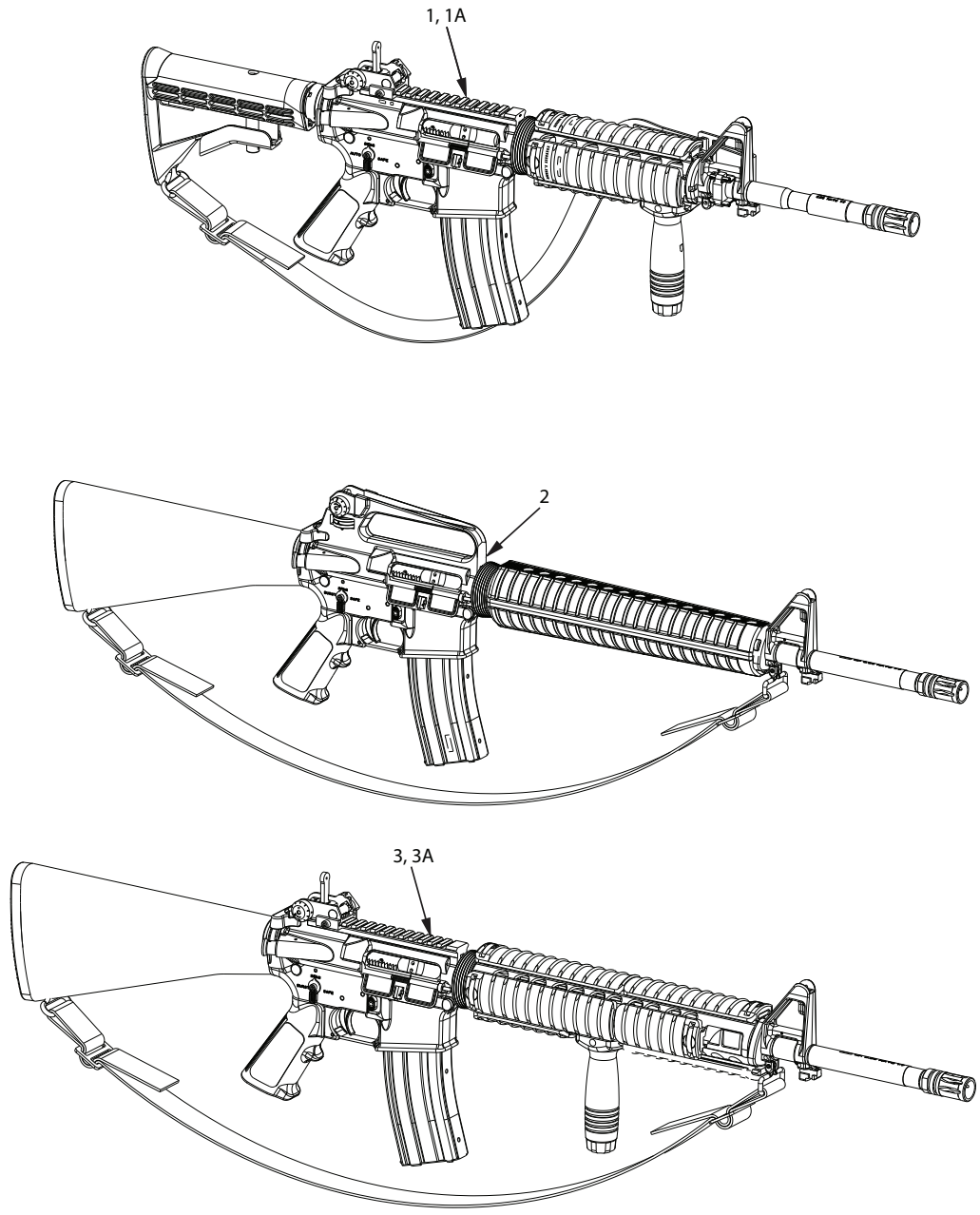
1. When NSNs or Part Numbers Are Not Known.
 - First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since Figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.
 - Second. Find the Figure covering the functional group or the sub functional 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 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 for which you are looking.
3. When Part Number Is Known.
 - First. If you have the part number and not the NSN, look in the PART NUMBER column of the part number 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.

ABBREVIATIONS*Table 8. Abbreviations.*

Abbreviation	Explanation
NIIN	National Item Identification Number (Consists of the last 9 digits of the NSN)
RPSTL	Repair Parts and Special Tools List

END OF WORK PACKAGE

**MAINTAINER
REPAIR PARTS AND SPECIAL TOOLS LIST**



M000526

Figure 1. Rifle, 5.56MM 9349000; Rifle, 5.56MM 12012000; Rifle, 5.56MM 12973001; Carbine, 5.56MM 9390000; Carbine, 5.56MM 12972700.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 RIFLE, 5.56MM 9349000; RIFLE, 5.56MM 12012000; RIFLE, 5.56MM 12973001; CARBINE, 5.56MM 9390000; CARBINE, 5.56MM 12972700.	
					FIG. 1. RIFLE, 5.56MM 9349000; RIFLE, 5.56MM 12012000; RIFLE, 5.56MM 12973001; CARBINE, 5.56MM 9390000; CARBINE, 5.56MM 12972700.	
1	PAFDA	1005-01-382-0953	19200	12972700	CARBINE, 5.56MM UOC: AY6.....	1
1A	PAFDA	1005-01-231-0973	19200	9390000	CARBINE, 5.56MM UOC: AS1.....	1
2	PAFDA	1005-01-128-9936	19200	9349000	RIFLE, 5.56MM UOC: AR8.....	1
3	PAFDA	1005-01-357-5112	19200	12012000	RIFLE, 5.56MM UOC: AW4	1
3A	PAFDA	1005-01-383-2872	19200	12973001	RIFLE, 5.56MM UOC: AZ1	1

END OF FIGURE

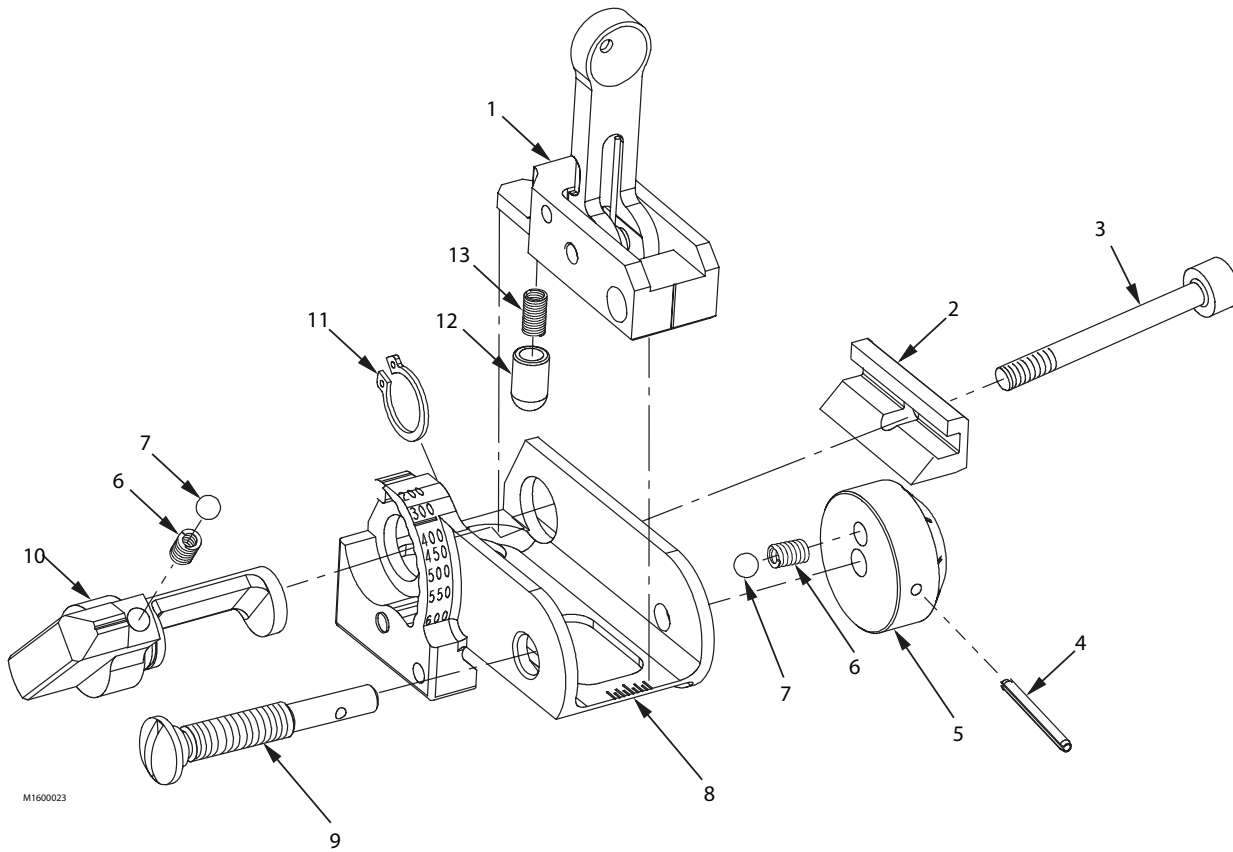
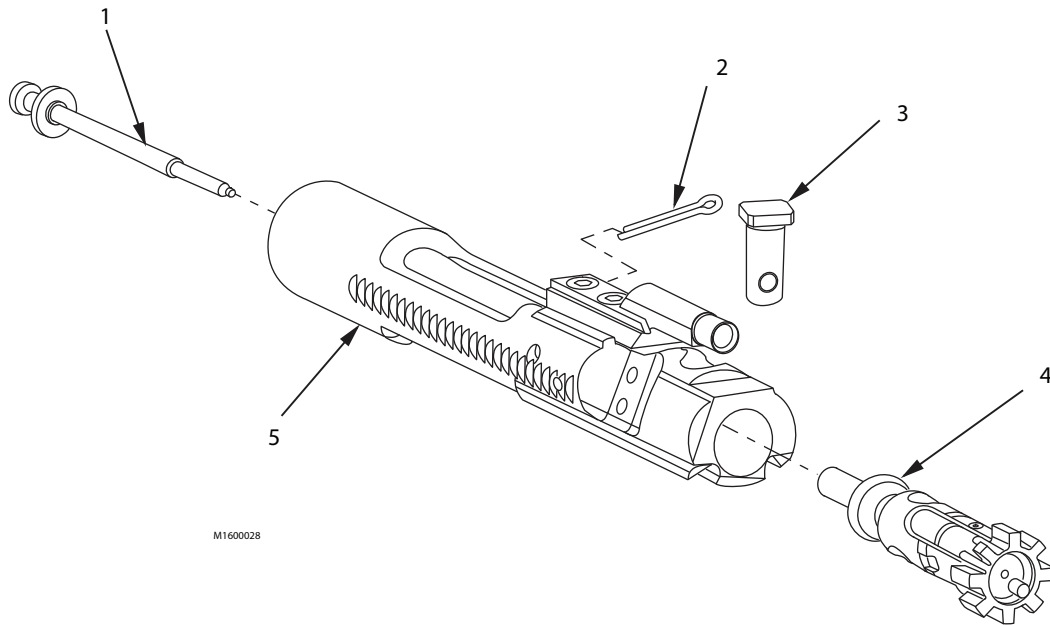


Figure 2. BACK-UP IRON SIGHT (BUIS) ASSEMBLY 12996812.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 01 BACK-UP IRON SIGHT (BUIS) ASSEMBLY.						
FIG. 2. BACK-UP IRON SIGHT (BUIS) ASSEMBLY 12996812.						
1	PAFZZ	1005-01-497-2592	19200	12996813	FRAME, ASSEMBLY APERTURE, SIGHT	1
2	PAFZZ	5340-01-484-7999	19200	12996823	CLAMP, SYNCHRO.....	1
3	PAFZZ	5305-01-484-7075	19200	12996824	SCREW, RECOIL.....	1
4	PAFZZ	5315-00-058-6678	96906	MS16562-103	PIN, SPRING-TUBULAR, SLOTTED.....	1
5	PAFZZ	5355-01-134-3627	19200	9349077	KNOB, WINDAGE.....	1
6	PAFZZ	5360-01-148-1751	19200	9349069	SPRING, INDEX.....	2
7	PAFZZ	3110-00-183-9175	96906	MS19060-4808	BALL, BEARING, CORROSION RESISTANT STEEL.....	2
8	XAFZZ		19200	12996818	SIGHT, BASE.....	
9	PAFZZ	5305-01-484-7074	19200	12996822	SCREW, WINDAGE.....	1
10	XAFZZ		19200	12996819	SIGHT, CAM.....	
11	PAFZZ	5325-01-486-7585	96906	MS16624-3035	RING, RETAINING, EXTERNAL.....	1
12	PAFZZ	5315-01-484-7071	19200	12996821	PLUNGER.....	1
13	PAFZZ	5360-01-484-7076	19200	12996820	SPRING, COMPRESSION.....	1

END OF FIGURE



M1600028

Figure 3. BOLT AND BOLT CARRIER ASSEMBLY 13004788.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
<p>GROUP 02 BOLT AND BOLT CARRIER ASSEMBLY 13004788.</p> <p>FIG. 3. BOLT AND BOLT CARRIER ASSEMBLY 13004788.</p>						
1	PAFFF	1005-00-017-9547	19204	8448503	PIN, FIRING.....	1
2	PAFFF	1005-00-999-1509	19204	8448504	PIN, FIRING PIN RETAINING.....	1
3	PAFFF	5315-00-992-7294	19204	8448502	PIN, GROOVED, HEADED BOLT CAM.....	1
4	PAFFF	1005-01-505-1035	19200	13004787	BOLT, BREECH ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 4).....	1
5	PAFFF	1005-01-441-1619	19204	8448505	KEY AND BOLT CARRIER ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 5).....	1

END OF FIGURE

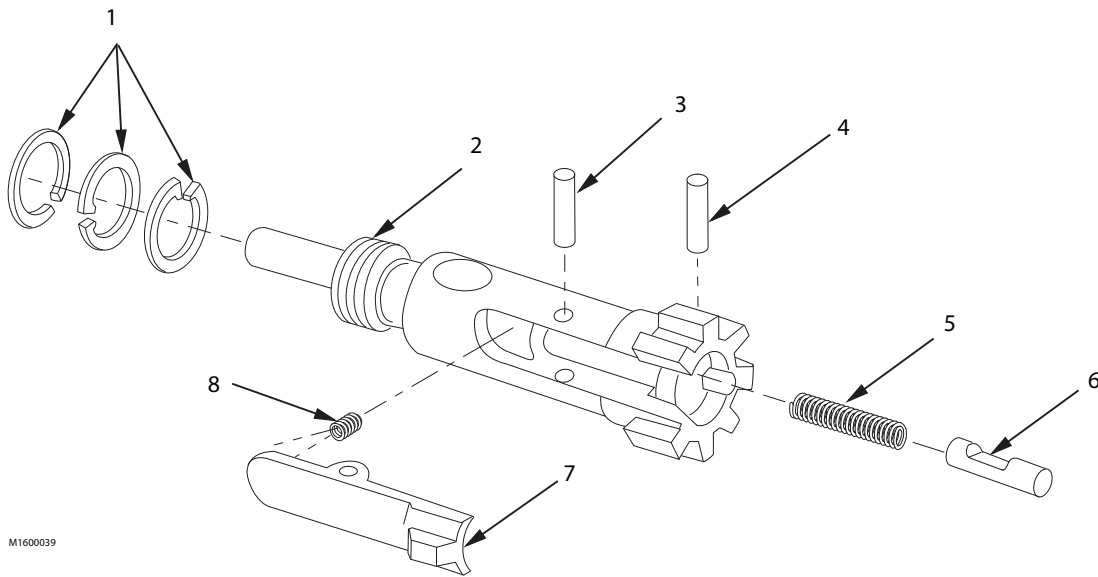


Figure 4. BREECH BOLT ASSEMBLY 13004787

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0201 BREECH BOLT ASSEMBLY 13004787.						
FIG. 4. BREECH BOLT ASSEMBLY 13004787						
1	PAFZZ	1005-00-992-7287	19204	8448511	RING, BOLT.....	3
2	XAFZZ		19204	8448510	BOLT.....	1
3	PAFZZ	1005-00-992-7290	19204	8448513	PIN, EXTRACTOR.....	1
4	PAFZZ	5315-00-597-5086	80205	MS16562-98	PIN, SPRING EJECTOR.....	1
5	PAFZZ	5360-00-992-7292	19204	8448516	SPRING, HELICAL, COMPRESSION, EJECTOR.....	1
6	PAFZZ	1005-00-992-7291	19204	8448515	EJECTOR, CARTRIDGE.....	1
7	PAFZZ	1005-00-992-7288	19204	8448512	EXTRACTOR, CARTRIDGE.....	1
8	PAFZZ	1005-01-505-2886	19200	13004786	SPRING ASSEMBLY, EXTRACTOR (GOLD HUE SPRING).....	1

END OF FIGURE

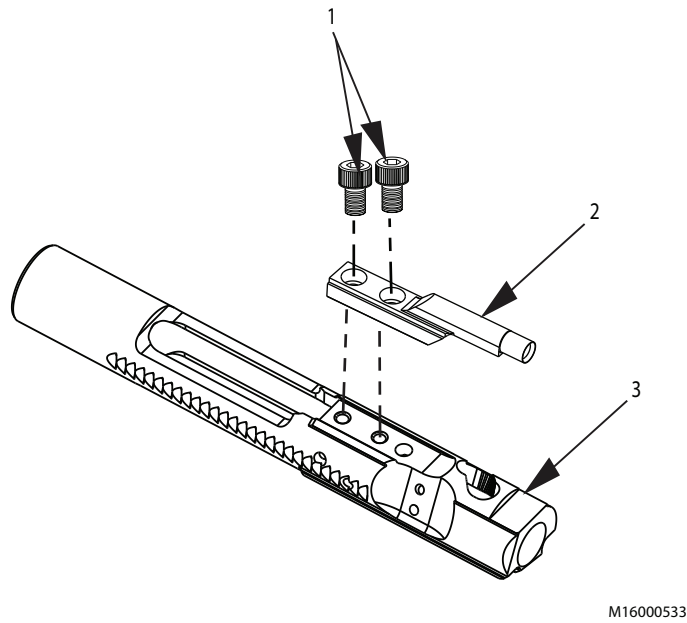


Figure 5. KEY AND BOLT CARRIER ASSEMBLY 8448505

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0202 KEY AND BOLT CARRIER ASSEMBLY 8448505.	
					FIG. 5. KEY AND BOLT CARRIER ASSEMBLY 8448505	
1	PAFZZ	5305-00-992-7284	19204	8448508	SCREW, CARRIER KEY.....	2
2	PAFZZ	1005-00-992-7283	19200	8448506	KEY, BOLT CARRIER.....	1
3	XAFZZ		19200	8448507	CARRIER BOLT.....	1

END OF FIGURE

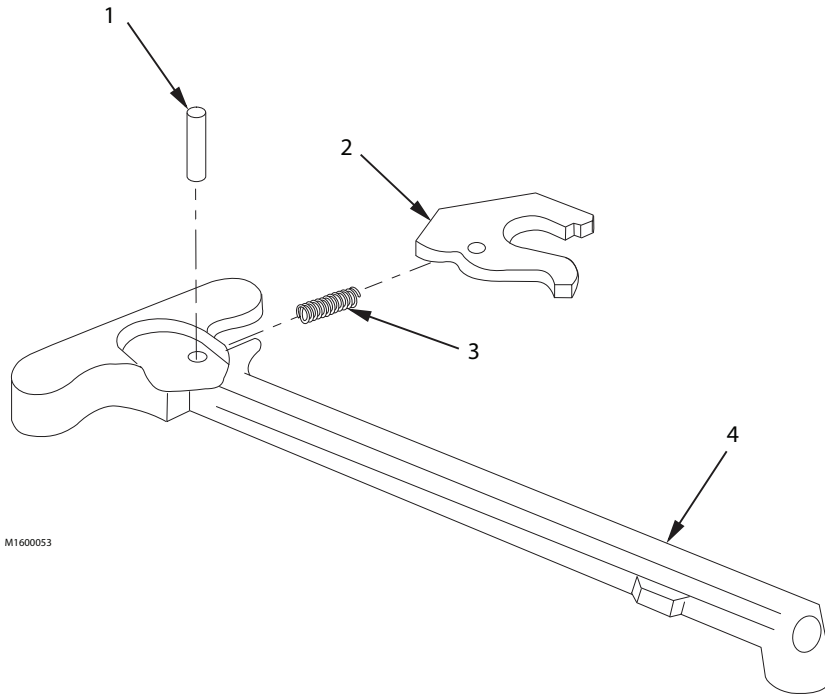


Figure 6. CHARGING HANDLE ASSEMBLY 8448517.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 03 CHARGING HANDLE ASSEMBLY 8448517.	
					FIG. 6. CHARGING HANDLE ASSEMBLY 8448517.	
1	PAFZZ	5315-01-048-9372	19204	8448521-2	PIN, SPRING, CHARGING HANDLE.....	1
2	PAFZZ	5342-00-999-0405	19200	8448519	LATCH, CHARGING HANDLE.....	1
3	PAFZZ	5360-00-999-0404	19204	8448520	SPRING, HELICAL, COMPRESSION, CHARGING HANDLE.....	1
4	XAFZZ		19204	8448518	HANDLE, CHARGING.	1

END OF FIGURE

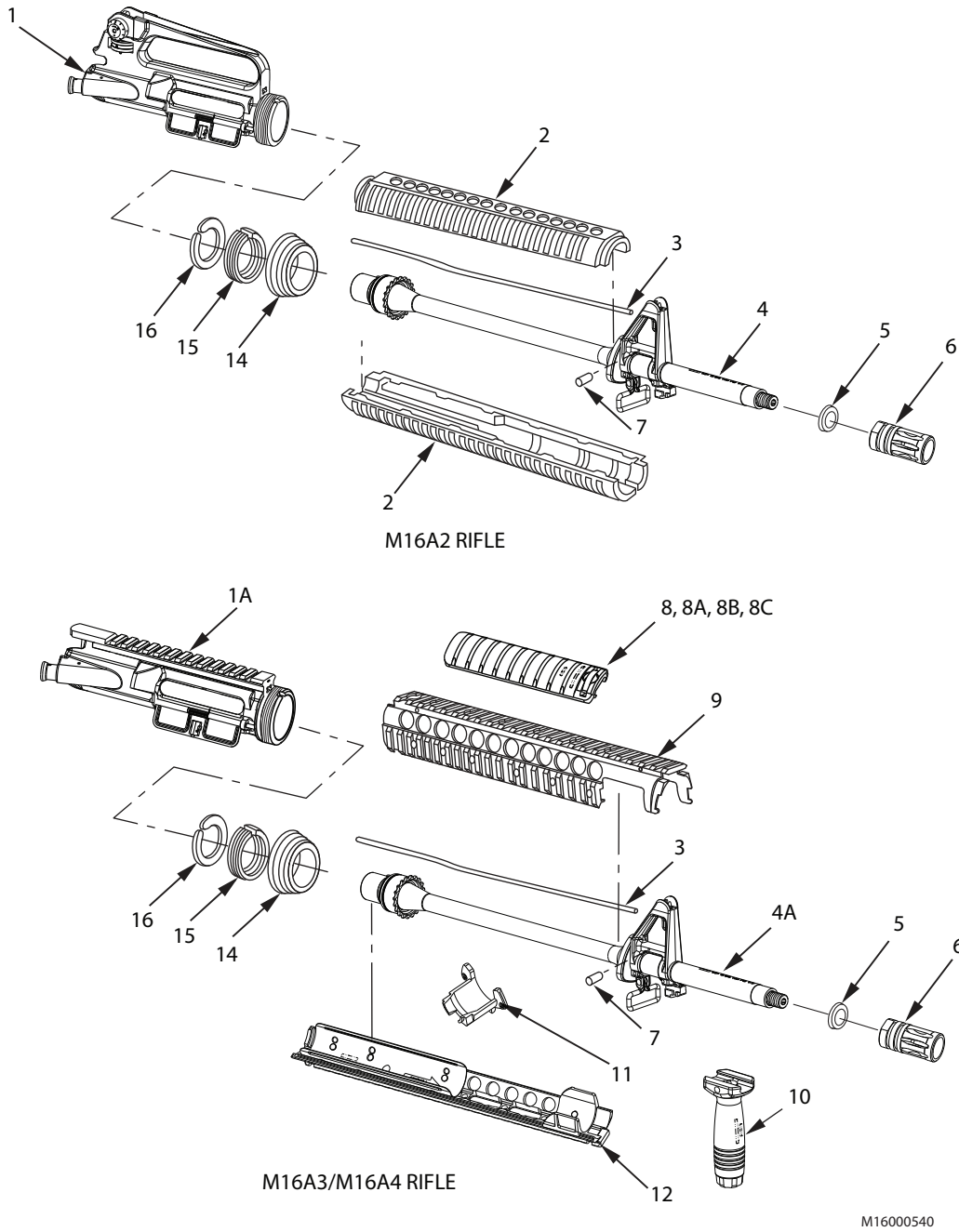


Figure 7. UPPER RECEIVER AND BARREL ASSEMBLY 9349050, 12973010, AND 12972680 (Sheet 1 of 2).

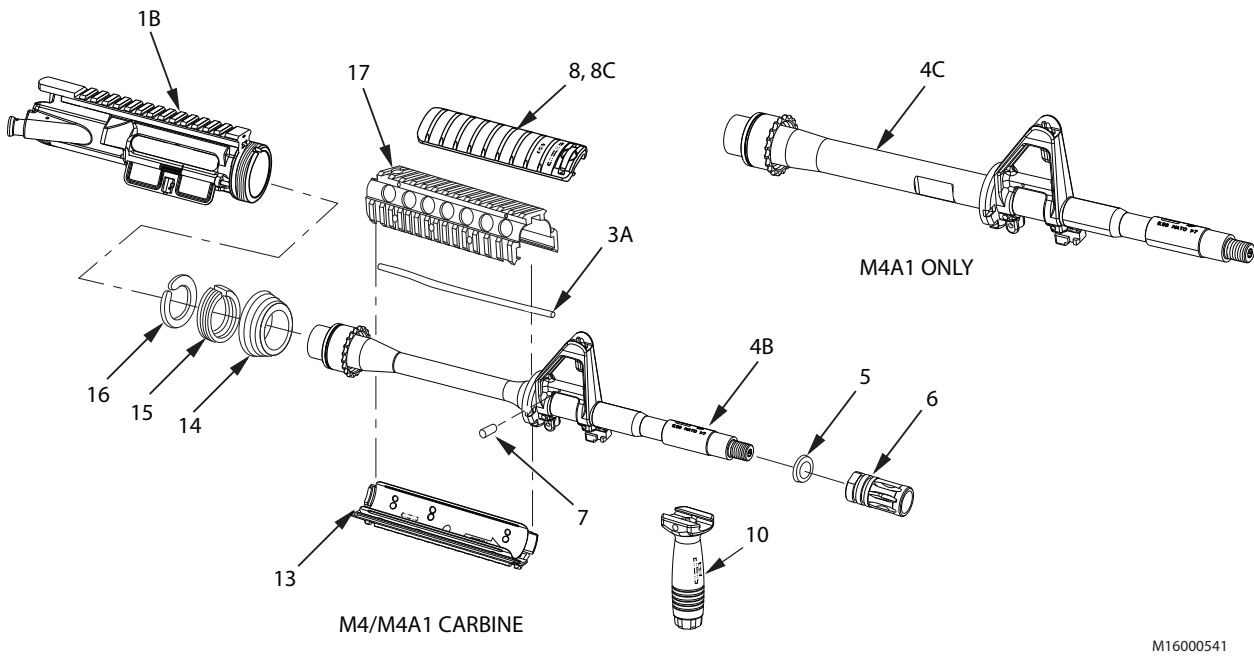


Figure 7. UPPER RECEIVER AND BARREL ASSEMBLY 9349050, 12973010, AND 12972680 (Sheet 2 of 2).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 04 UPPER RECEIVER AND BARREL ASSEMBLY 9349050, 12973010, AND 12972680.						
FIG. 7. UPPER RECEIVER AND BARREL ASSEMBLY 9349050, 12973010, AND 12972680.						
1	AFFFF		19200	9349062	UPPER RECEIVER ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 9) UOC: AR8	1
1A	AFFFF		19200	12973011	UPPER RECEIVER ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 9) UOC: AW4, AZ1	1
1B	AFFFF		19200	12972675	UPPER RECEIVER ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 9) UOC: AS1, AY6	1
2	PAFZZ	1005-01-134-3629	19200	9349059	HANDGUARD ASSEMBLY UOC: AR8	2
3	PAFZZ	4710-00-978-1038	19200	8448567	TUBE, BENT, METALLIC UOC: AR8, AW4, AZ1	1
3A	PAFZZ	4710-01-233-8637	19200	9390016	TUBE, BENT, METALLIC UOC: AS1, AY6	1
4	PAFFF	1005-01-146-7684	19200	9349124	BARREL ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 12) UOC: AR8	1
4A	PAFFF	1005-01-454-1629	19200	12598107	BARREL ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 12) UOC: AW4, AZ1	1
4B	PAFFF	1005-01-233-8529	19200	9390007	BARREL AND FRONT SIGHT ASSEMBLY, REPLACEMENT (FOR ASSY BREAKDOWN SEE FIG. 12) UOC: AS1	1
4C	PAFFF	1005-01-471-5456	19200	12991851	BARREL AND FRONT SIGHT ASSEMBLY, REPLACEMENT (FOR ASSY BREAKDOWN SEE FIG. 12) UOC: AY6	1
5	PAFZZ	5310-01-475-9652	19200	12991533	WASHER, RECESSED.....	1
6	PAFZZ	1005-01-134-3633	19200	9349051	COMPENSATOR.....	1
7	PAFZZ	5315-00-058-6044	80205	MS16562-106	PIN, SPRING, GAS TUBE.....	1
8	PAFZZ	1005-01-453-5386	19200	12973132	11 RIB RAIL COVER ASSEMBLY UOC: AW4, AZ1, AS1, AY6.....	3
8A	PAFZZ	1005-01-453-5383	19200	12973134	9 RIB RAIL COVER ASSEMBLY UOC: AW4, AZ1.....	2
8B	PAFZZ	1005-01-453-4222	19200	12973135	6 RIB RAIL COVER ASSEMBLY UOC: AW4, AZ1, AS1, AY6.....	1
8C	PAFZZ	1005-01-453-4221	19200	12973136	5 RIB RAIL COVER ASSEMBLY UOC: AW4, AZ1.....	2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
9	PAFFF	1005-01-453-4225	19200	12973021	UPPER HANDGUARD ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 8) UOC: AW4, AZ1	1
10	PAFZZ	1005-01-453-6655	80205	12973101	VERTICAL PISTOL GRIP UOC: AW4, AZ1, AS1, AY6.....	1
11	PAFFF	1005-01-453-4224	19200	12973139	BARREL STOP ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 13) UOC: AW4, AZ1	1
12	PAFZZ	1005-01-453-1635	19200	12973029	LOWER HANDGUARD UOC: AW4, AZ11	1
13	PAFZZ	1005-01-453-1633	19200	12973099	LOWER HANDGUARD UOC: AS1, AY6	1
14	PAFZZ	1005-00-087-8998	19204	8448712	RING, SLIP, HANDGUARD.....	1
15	PAFZZ	5360-00-978-1036	19204	8448555	SPRING, SLIP RING, HANDGUARD, UPPER RECEIVER.....	1
16	PAFZZ	5325-00-999-0863	96906	MS16626-3137	RING, RETAINING.....	1
17	PAFFF	1005-01-453-4227	19200	12973096	UPPER HANDGUARD ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 8) UOC: AS1, AY6	1

END OF FIGURE

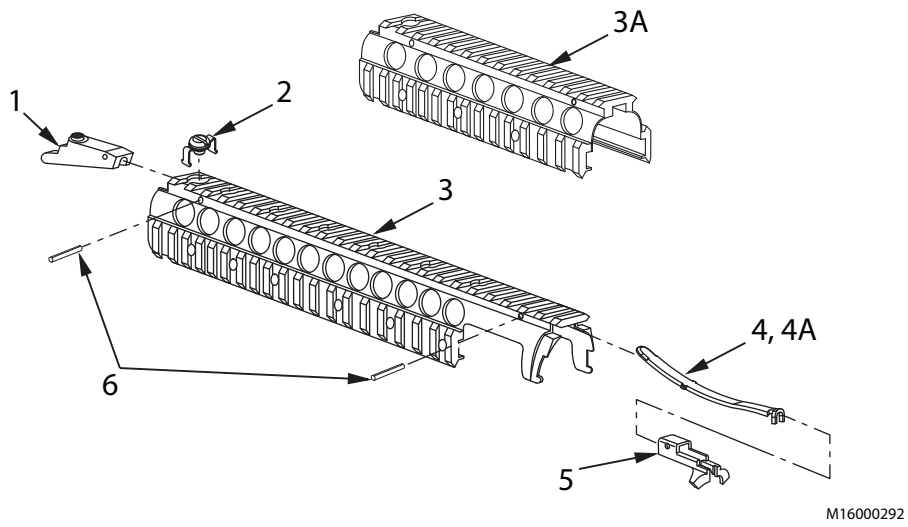


Figure 8. UPPER HANDGUARD ASSEMBLY 12973021, 12973096.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0401 UPPER HANDGUARD ASSEMBLY 12973021, 12973096.						
FIG. 8. UPPER HANDGUARD ASSEMBLY 12973021, 12973096.						
1	PAFZZ	1005-01-453-4226	19200	12973027	REAR HANDGUARD CLAMP UOC: AW4, AZ1	1
2	PAFZZ	5305-01-540-4805	19200	13011435	SLOTTED SCREW ASSEMBLY UOC: AW4, AZ1	1
3	XAFZZ		19200	12973022	UPPER HANDGUARD UOC: AW4, AZ1	1
3A	XAFZZ		19200	12973097	UPPER HANDGUARD UOC: AS1, AY6	1
4	PAFZZ	5360-01-540-4806	19200	13012017	FLAT SPRING UOC: AW4, AZ1	1
4A	PAFZZ	5360-01-540-4808	19200	13012016	FLAT SPRING UOC: AS1, AY6	1
5	PAFZZ	5365-01-540-4807	19200	13012018	SPECIAL SHAPED SPACER UOC: AW4, AZ1	1
6	PAFZZ	5315-00-826-3251	96906	MS16562-223	SPRING PIN UOC: AW4, AZ1	2

END OF FIGURE

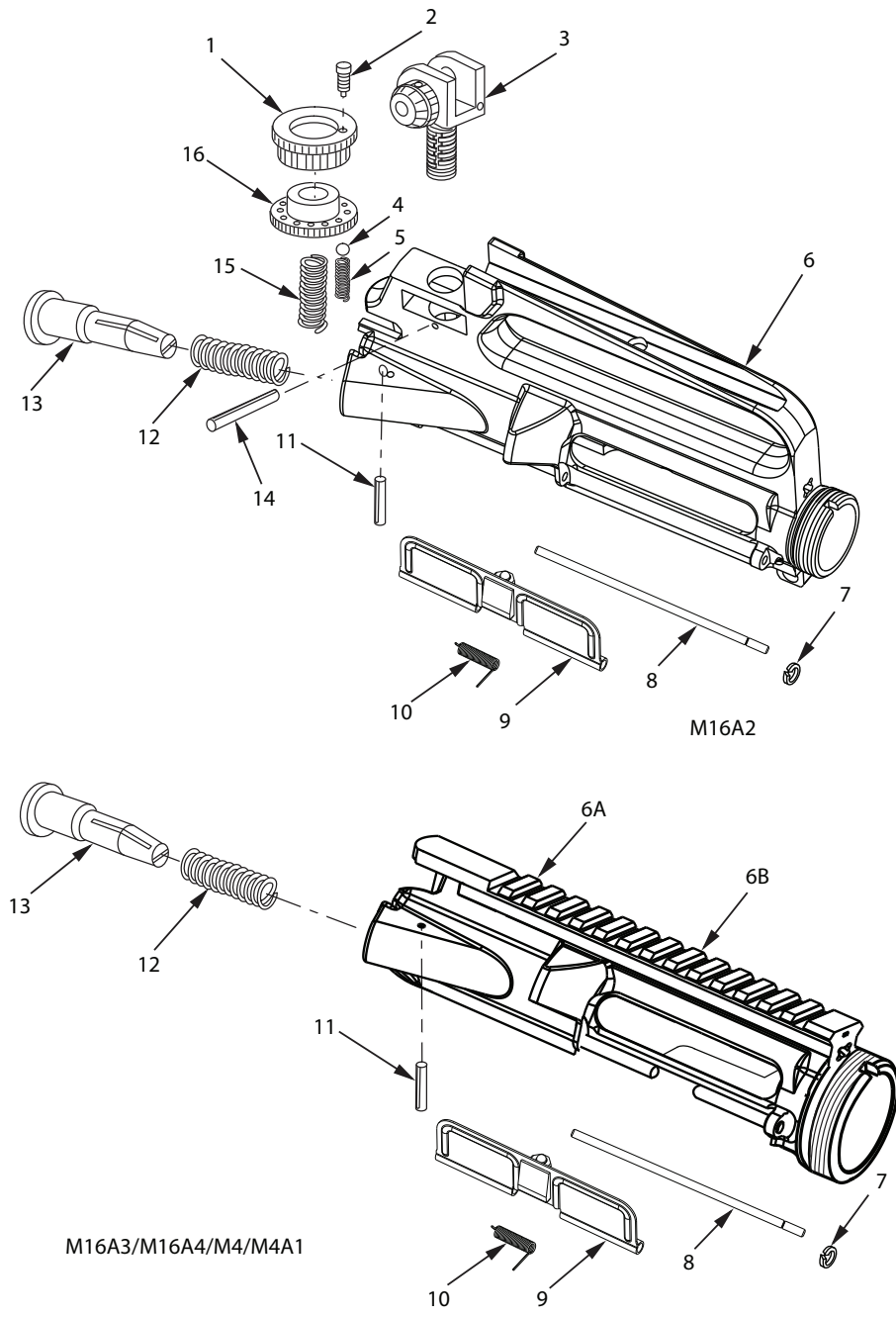


Figure 9. UPPER RECEIVER ASSEMBLY 9349062, 12973011, AND 12972675.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0402 UPPER RECEIVER ASSEMBLY 9349062, 12973011, AND 12972675.						
FIG. 9. UPPER RECEIVER ASSEMBLY 9349062, 12973011, AND 12972675.						
1	PAFZZ	1005-01-134-3621	19200	9349066	INDEX, ELEVATION UOC: AR8	1
2	PAFZZ	5305-01-134-3622	19200	9349065	SCREW, INDEX UOC: AR8	1
3	AAFZZ		19200	9349072	REAR SIGHT ASSEMBLY (FOR ASSY BREAKDOWN SEE FIG. 11) UOC: AR8	1
4	PAFZZ	3110-00-183-9175	96906	MS19060-4808	BALL, BEARING UOC: AR8	1
5	PAFZZ	5360-01-148-1751	19200	9349069	SPRING, HELICAL, COMPRESSION, INDEX UOC: AR8	1
6	PAFZZ	1005-01-134-3701	19200	9349063	RECEIVER, UPPER UOC: AR8	1
6A	PAFZZ	1005-01-382-6795	19200	12972670	RECEIVER, UPPER UOC: AS1, AY6	1
6B	PAFZZ	1005-01-454-9880	19200	12973012	RECEIVER, UPPER UOC: AW4, AZ1	1
7	PAFZZ	5325-00-999-0864	96906	MS16632-3012	RING, RETAINING, COVER.....	1
8	PAFZZ	5315-00-978-1023	19204	8448533	PIN, GROOVED, HEADLESS, COVER.....	1
9	PAFZZ	1005-00-978-1022	19204	8448525	COVER, EJECTION PORT.....	1
10	PAFZZ	5360-00-978-1025	19204	8448532	SPRING, HELICAL, TORSION, COVER.....	1
11	PAFZZ	5315-00-840-3812	80205	MS16562-121	PIN, SPRING, FORWARD ASSIST.....	1
12	PAFZZ	5360-00-017-9541	19200	8448540	SPRING, HELICAL, COMPRESSION, FORWARD ASSIST.....	1
13	PAFZZ	1005-01-442-0160	19200	9349086	FORWARD ASSIST ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 10).....	1
14	PAFZZ	5315-00-840-3812	80205	MS16562-121	PIN, SPRING UOC: AR8	1
15	PAFZZ	5360-01-134-3710	19200	9349070	SPRING, HELICAL, COMPRESSION, ELEVATION UOC: AR8	1
16	PAFZZ	5355-01-135-4972	19200	9349067	KNOB, ELEVATION UOC: AR8	1

END OF FIGURE

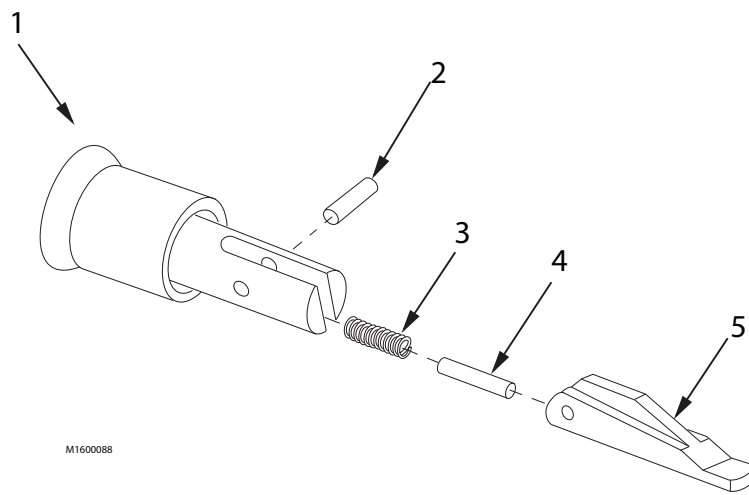


Figure 10. FORWARD ASSIST ASSEMBLY 9349086.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 040201 FORWARD ASSIST ASSEMBLY 9349086.						
FIG. 10. FORWARD ASSIST ASSEMBLY 9349086.						
1	XAFZZ		19200	9349085	PLUNGER ASSEMBLY.....	1
2	PAFZZ	5315-01-048-9372	19204	8448521-2	PIN, SPRING, PAWL.....	1
3	PAFZZ	5360-00-523-8084	19200	8448542	SPRING, HELICAL, COMPRESSION, PAWL.....	1
4	PAFZZ	1005-00-017-9540	19204	8448544	DETENT, PAWL.....	1
5	PAFZZ	3040-00-017-9539	19204	8448543	PAWL, FORWARD ASSIST.....	1

END OF FIGURE

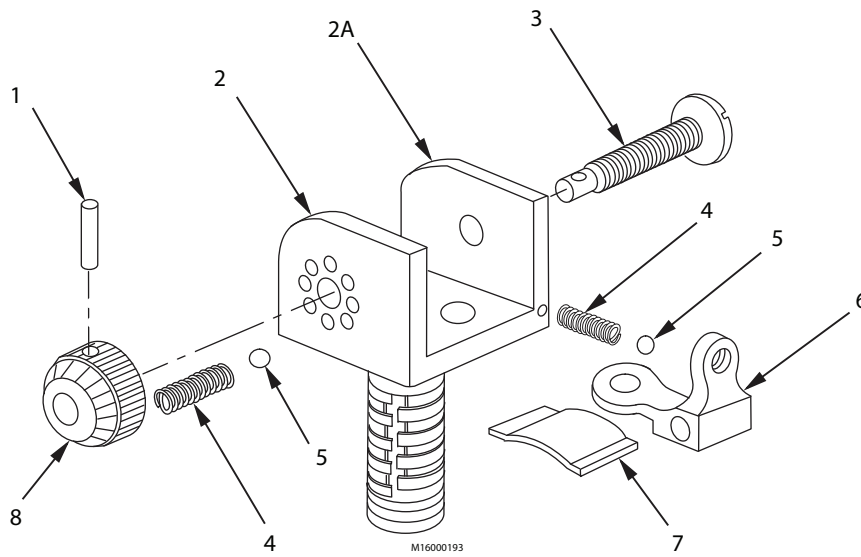
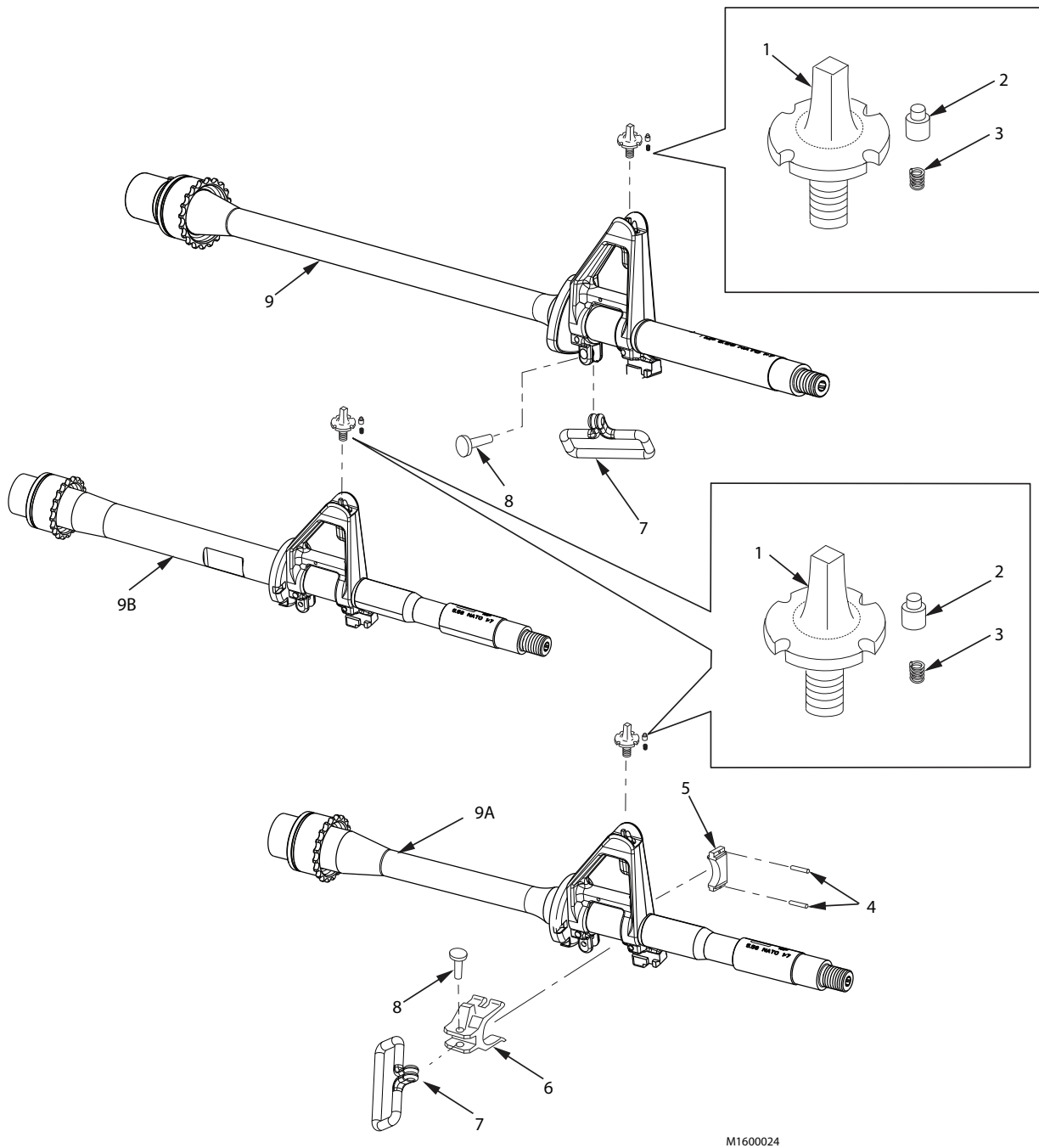


Figure 11. REAR SIGHT ASSEMBLY 9349072 AND 12951026.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 040202 REAR SIGHT ASSEMBLY 9349072 AND 12951026.						
FIG. 11. REAR SIGHT ASSEMBLY 9349072 AND 12951026.						
1	PAFZZ	5315-00-058-6678	96906	MS16562-103	PIN, SPRING, WINDAGE.....	1
2	PAFZZ	1005-01-134-3631	19200	9349074	BASE, REAR SIGHT UOC: AR8	1
2A	PAFZZ	1005-01-382-7086	19200	12951028	BASE, REAR SIGHT UOC: AW4, AZ1, AS1, AY6	1
3	PAFZZ	5305-01-144-1490	19200	9349076	SCREW, EXTERNALLY RE.....	1
4	PAFZZ	5360-01-148-1751	19200	9349069	SPRING, HELICAL, COMPRESSION, REAR SIGHT.....	2
5	PAFZZ	3110-00-183-9175	96906	MS19060-4808	BALL, BEARING.....	2
6	PAFZZ	1005-01-135-3697	19200	9349075	APERTURE, SIGHT.....	1
7	PAFZZ	5360-01-381-6183	19200	12011987	SPRING, FLAT, REAR SIGHT.....	1
8	PAFZZ	5355-01-134-3627	19200	9349077	KNOB, WINDAGE.....	1

END OF FIGURE



M1600024

Figure 12. BARREL ASSEMBLY 9349124 AND 12598107, REPLACEMENT BARREL AND FRONT SIGHT ASSEMBLY 9390007 AND 12991851.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
<p>GROUP 0403 BARREL ASSEMBLY 9349124 AND 12598107, REPLACEMENT BARREL AND FRONT SIGHT ASSEMBLY 9390007 AND 12991851.</p> <p>FIG. 12. BARREL ASSEMBLY 9349124 AND 12598107, REPLACEMENT BARREL AND FRONT SIGHT ASSEMBLY 9390007 AND 12991851.</p>						
1	PAFZZ	1005-01-134-3625	19200	9349056	POST, FRONT SIGHT.....	1
2	PAFZZ	5315-00-979-3930	19204	8448573	PIN, SHOULDER, HEADLESS (DETENT, FRONT SIGHT).....	1
3	PAFZZ	5360-00-979-3931	19204	8448574	SPRING, HELICAL, COMPRESSION, FRONT SIGHT.....	1
4	PAFZZ	5315-00-690-0544	96906	MS39086-93	PIN, SPRING UOC: AS1, AY6	2
5	PAFZZ	5340-01-474-2845	19200	12991254	CLAMP, SYNCHRO (BAR, LOCKING) UOC: AS1, AY6	1
6	PAFZZ	1010-01-264-6517	19200	12598617	MOUNT, SWIVEL UOC: AS1, AY6	1
7	PAFZZ	1005-00-017-9543	19204	8448571	SWIVEL, SLING, SMALL.....	1
8	PAFZZ	5320-01-063-7635	19204	8448697	RIVET, TUBULAR.....	1
9	XAFZZ		19200	9349054	BARREL AND BARREL EXTENSION ASSEMBLY UOC: AR8, AW4, AZ1	1
9A	XAFZZ		19200	9390009	BARREL AND BARREL EXTENSION ASSEMBLY UOC: AS1	1
9B	XAFZZ		19200	12991850	BARREL AND BARREL EXTENSION ASSEMBLY UOC: AY6	1

END OF FIGURE

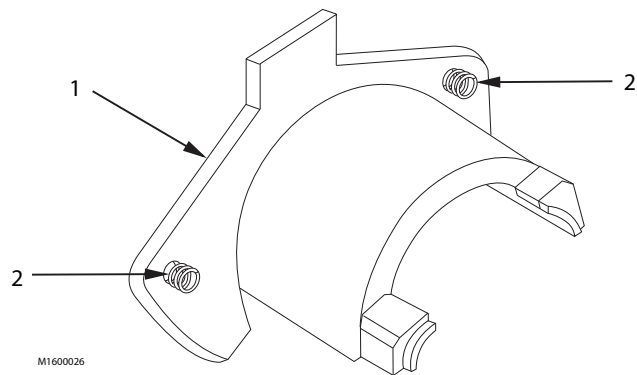


Figure 13. BARREL STOP ASSEMBLY 12973139.

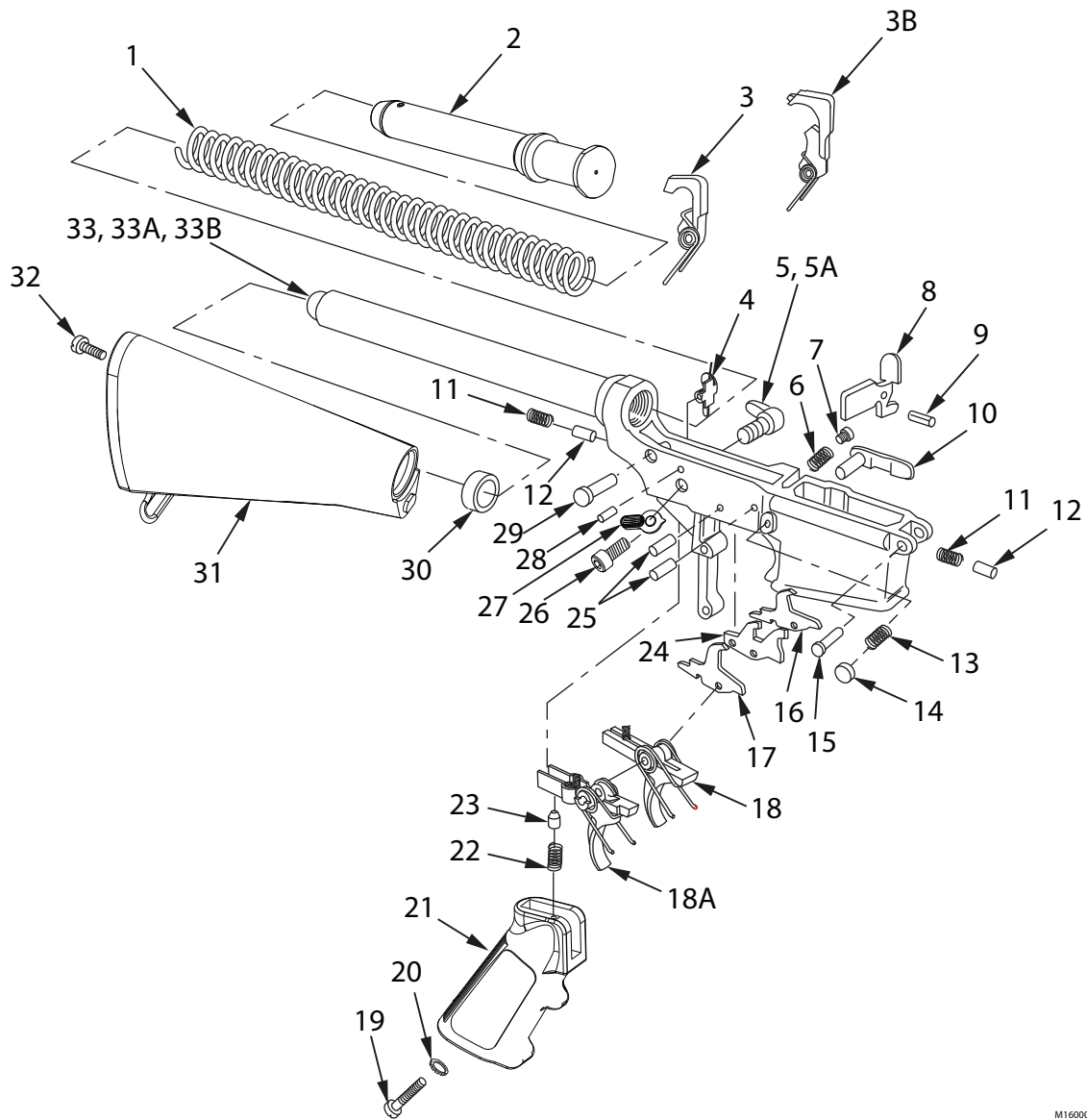
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
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**GROUP 0404 BARREL STOP
ASSEMBLY 12973139.**

**FIG. 13. BARREL STOP ASSEMBLY
12973139.**

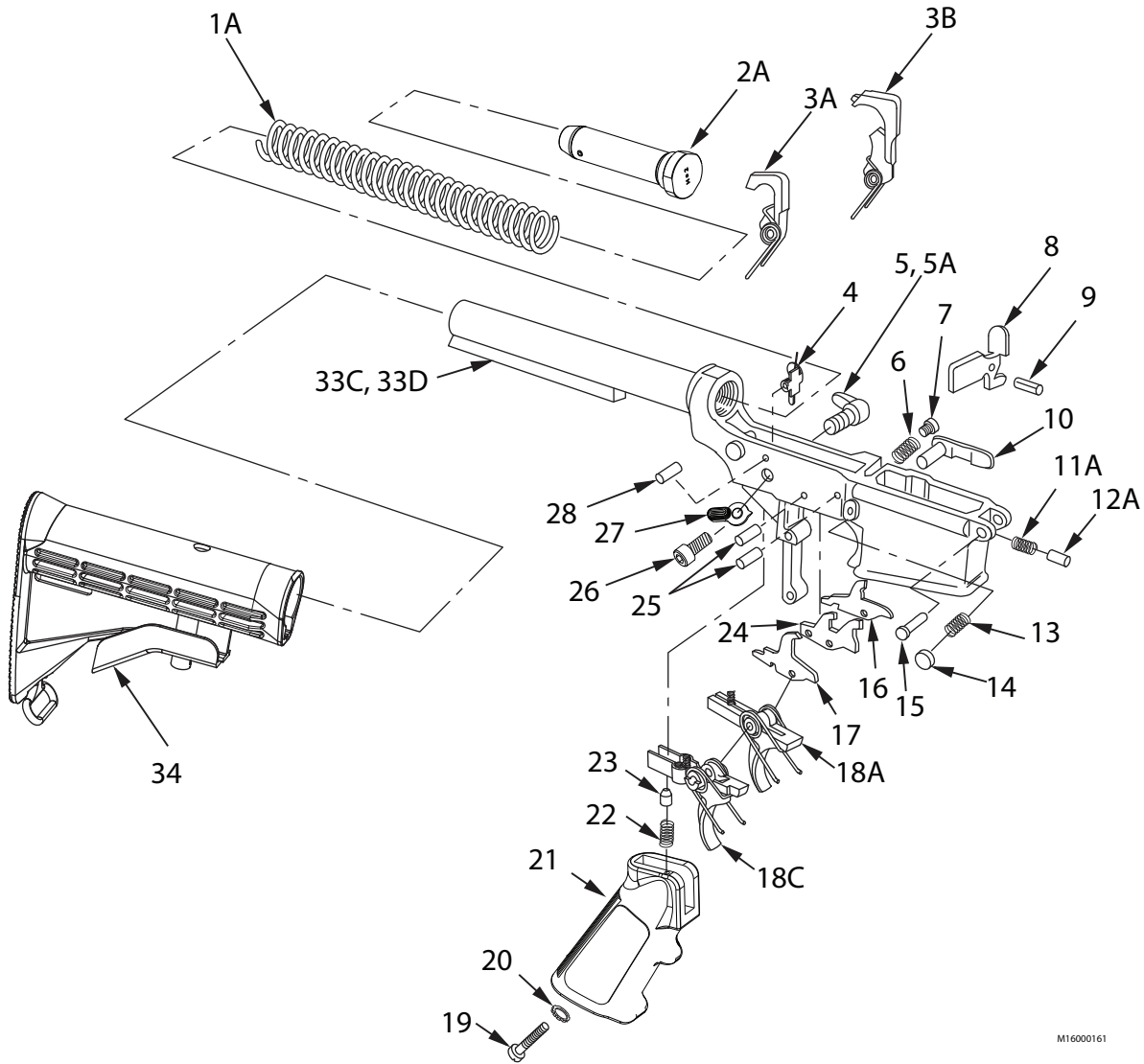
1	XAFZZ		19200	12973034	BARREL STOP UOC: AW4, AZ1	1
2	PAFZZ	5360-01-452-9636	19200	12973035	HELICAL COMPRESSION SPRING UOC: AW4, AZ1	2

END OF FIGURE



M16000160

Figure 14. LOWER RECEIVER AND BUTTSTOCK ASSEMBLY 9349100, 12012001, 12598101, 9390011, AND 12972690 (Sheet 1 of 2).



M16000161

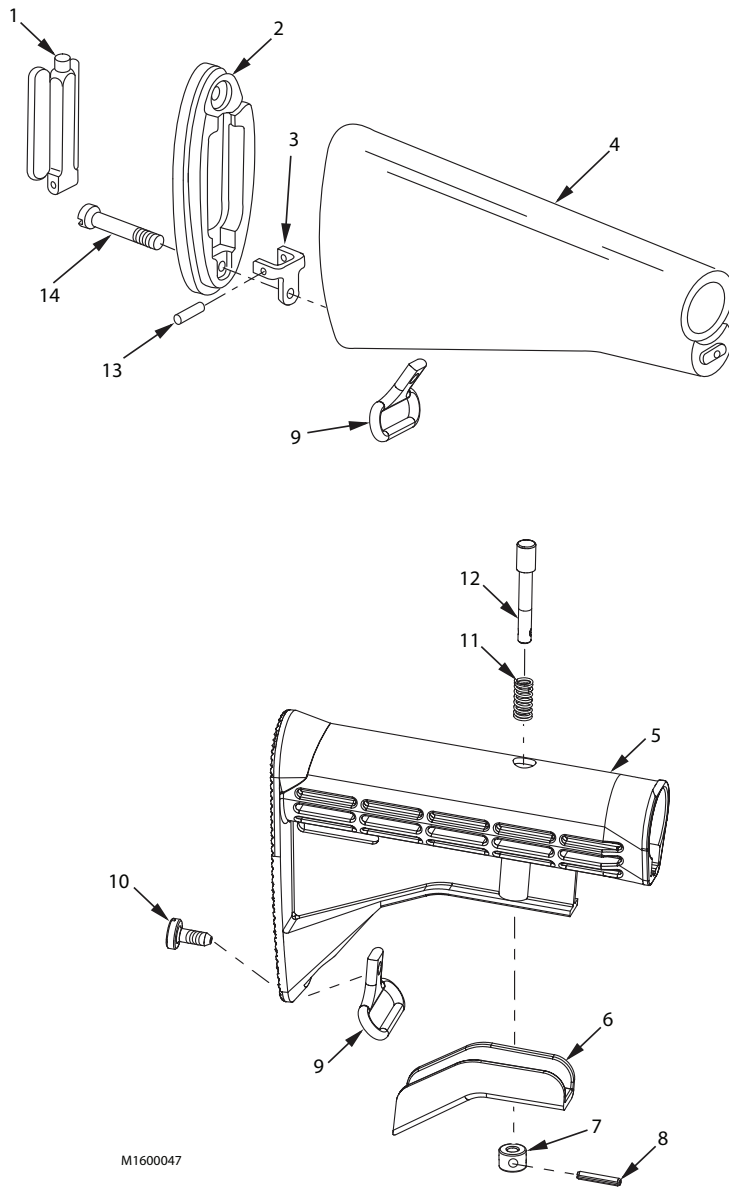
Figure 14. LOWER RECEIVER AND BUTTSTOCK ASSEMBLY 9349100, 12012001, 12598101, 9390011, AND 12972690 (Sheet 2 of 2).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 05 LOWER RECEIVER AND BUTTSTOCK ASSEMBLY 9349100, 12012001, 12598101, 9390011, AND 12972690.	
					FIG. 14. LOWER RECEIVER AND BUTTSTOCK ASSEMBLY 9349100, 12012001, 12598101, 9390011, AND 12972690.	
1	PAFZZ	5360-00-992-6665	19204	8448629	SPRING, HELICAL, COMPRESSION, ACTION UOC: AR8, AW4, AZ1	1
1A	PAFZZ	5360-01-233-8617	19200	9390022	SPRING, HELICAL, COMPRESSION UOC: AS1, AY6	1
2	PAFZZ	1005-00-937-3078	19200	8448615	BUFFER ASSEMBLY UOC: AR8, AW4, AZ1	1
2A	PAFZZ	1005-01-522-0772	19200	13004468	BUFFER ASSEMBLY UOC: AS1, AY6	1
3	AFFFF		19200	9349106	HAMMER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 16) UOC: AR8, AZ1	1
3A	AFFFF		19200	9390032	HAMMER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 16) UOC: AS1	1
3B	AFFFF		19204	8448610	HAMMER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 16) UOC: AW4, AY6	1
4	PAFZZ	1005-00-992-6649	19200	8448595	SEAR.....	1
5	PAFZZ	1005-01-673-4242	19200	13060592	SELECTOR FIRE CONTROL AMBIDEXTROUS.....	1
5A	XAFZZ		19200	13060593	LEVER, MAIN	1
6	PAFZZ	5360-00-056-2246	19204	8448633	SPRING, HELICAL, COMPRESSION, BOLT CATCH.....	1
7	PAFZZ	1005-00-056-2247	19204	8448634	PLUNGER, BOLT CATCH.....	1
8	PAFZZ	1005-00-017-9548	19200	8448628	CATCH, BOLT.....	1
9	PAFZZ	5315-00-812-3312	80205	MS16562-119	PIN, SPRING, BOLT CATCH.....	1
10	PAFZZ	1005-00-056-2201	19204	8448638	CATCH, MAGAZINE.....	1
11	PAFZZ	5360-00-992-6655	19204	8448586	SPRING, HELICAL, COMPRESSION, TAKE DOWN/PIVOT PIN UOC: AR8, AW4, AZ1	2
11A	PAFZZ	5360-00-992-6655	19204	8448586	SPRING, HELICAL, COMPRESSION, PIVOT PIN UOC: AS1, AY6	1
12	PAFZZ	5315-00-992-6654	19204	8448585	PIN, STRAIGHT, HEADLESS, DETENT, TAKE DOWN PIN UOC: AR8, AW4, AZ1	2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
12A	PAFZZ	5315-00-992-6654	19204	8448585	PIN, STRAIGHT, HEADLESS UOC: AS1, AY6	1
13	PAFZZ	5360-00-992-7301	19204	8448637	SPRING, HELICAL, COMPRESSION, MAGAZINE CATCH.....	1
14	PAFZZ	1005-00-992-7302	19204	8448636	BUTTON, MAGAZINE CATCH.....	1
15	PAFZZ	5315-00-017-9537	19204	8448621	PIN, GROOVED, HEADED (PIVOT PIN).....	1
16	PAFZZ	5340-01-145-7910	19200	9349114	LEVER, LOCK-RELEASE, SEMI UOC: AR8, AZ1, AS1	1
17	PAFZZ	1005-00-999-0406	19200	8448635	DISCONNECTOR UOC: AW4, AY6	1
18	AFFFF		19204	8448591	TRIGGER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 17) UOC: AW4	1
18A	AFFFF		19200	12972698	TRIGGER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 17) UOC: AY6	1
18B	AFFFF		19200	9349115	TRIGGER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 18) UOC: AR8, AZ1	1
18C	AFFFF		19200	12972697	TRIGGER ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 18) UOC: AS1	1
19	PAFZZ	5305-01-268-1191	88044	AN501D416-18	SCREW, MACHINE, RIFLE GRIP.....	1
20	PAFZZ	5310-00-527-3634	96906	MS35335-61	WASHER, LOCK, RIFLE GRIP.....	1
21	PAFZZ	1005-01-148-4805	19200	9349127	GRIP, RIFLE, PLASTIC, BLACK.....	1
22	PAFZZ	5360-00-992-7292	19204	8448516	SPRING, HELICAL, COMPRESSION, SAFETY.....	1
23	PAFZZ	1005-00-992-6667	19204	8448631	DETENT, SAFETY.....	1
24	PAFZZ	5340-01-144-1499	19200	9349113	LEVER, LOCK-RELEASE, BURST UOC: AR8, AZ1, AS1	1
25	PAFZZ	5315-00-992-7309	19204	8448609	PIN, GROOVED, HEADLESS, TRIGGER AND HAMMER.....	2
26	PAFZZ	5305-01-586-6997	19200	13036743	SCREW, CAP, HEXAGON HEAD.....	1
27	PAFZZ	5390-01-585-4340	19200	13027937	LEVER, RIGHT.....	1
28	PAFZZ	5315-00-992-6650	19204	8448599	PIN, GROOVED, HEADLESS, AUTOMATIC SEAR.....	1
29	PAFZZ	5315-00-992-6653	19204	8448584	PIN, GROOVED, HEADED UOC: AR8, AW4, AZ1	1
30	PAFZZ	5365-01-267-2169	19200	12597640	SPACER, STEPPED UOC: AR8, AW4, AZ1	1
31	PAFFF	1005-01-135-4973	19200	9349119	BUTTSTOCK ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 15) UOC: AR8, AW4, AZ1	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
32	PAFZZ	5305-01-147-8585	19200	9349128	SCREW, MACHINE, BUTTCAP UOC: AR8, AW4, AZ1	1
33	XAFFA		19200	9349101	LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 19) UOC: AR8	1
33A	XAFFA		19200	12012002	LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 19) UOC: AW4	1
33B	XAFFA		19200	12598102	LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 19) UOC: AZ1	1
33C	XAFFA		19200	9390011	LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 19) UOC: AS1.....	1
33D	XAFFA		19200	12972690	LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 19) UOC: AY6	1
34	PAFFF	1005-01-673-4294	19200	12012082	BUTTSTOCK ASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 15) UOC: AS1, AY6	1

END OF FIGURE



M1600047

Figure 15. BUTTSTOCK ASSEMBLY 9349119 AND 12012082.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0501 BUTTSTOCK ASSEMBLY 9349119 AND 12012082.						
FIG. 15. BUTTSTOCK ASSEMBLY 9349119 AND 12012082.						
1	PAFZZ	1005-01-520-7064	19200	12999220	DOOR ASSEMBLY, THUMB UOC: AR8, AW4, AZ1	1
2	PAFZZ	1005-01-146-7685	19200	9349130	PLATE, BUTT, SHOULDER GUN STOCK UOC: AR8, AW4, AZ1	1
3	PAFZZ	5340-00-463-3892	19200	8448653	HINGE, ACCESS DOOR, BUTT PLATE UOC: AR8, AW4, AZ1	1
4	XAFZZ		19200	9349121	BUTTSTOCK UOC: AR8, AW4, AZ1	1
5	XAFZZ		19200	12012081	BUTTSTOCK UOC: AS1, AY6	1
6	XAFZZ		19200	9390014	LEVER, LOCK-RELEASE UOC: AS1, AY6	1
7	PAFZZ	5310-01-233-8626	19200	9390026	NUT, SELF-LOCKING UOC: AS1, AY6	1
8	PAFZZ	5315 -00-843-9487	80205	MS16562-202	PIN, SPRING UOC: AS1, AY6	1
9	PAFZZ	1005-00-403-0964	19204	8448652	SWIVEL, SLING, SMALL.....	1
10	PAFZZ	5305-01-459-5982	19200	12012083	MACHINE SCREW UOC: AS1, AY6	1
11	PAFZZ	5360-01-233-8616	19200	9390027	SPRING, HELICAL, COMPRESSION UOC: AS1, AY6	1
12	PAFZZ	5315-01-233-8608	19200	9390025	PIN, SHOULDER, HEADLESS UOC: AS1, AY6	1
13	PAFZZ	5315-00-463-3894	19204	8448655	PIN, STRAIGHT, HEADLESS, ACCESS DOOR UOC: AR8, AW4, AZ1	1
14	PAFZZ	5305-01-144-1494	19200	9349120	SCREW, MACHINE, BUTT PLATE UOC: AR8, AW4, AZ1	1

END OF FIGURE

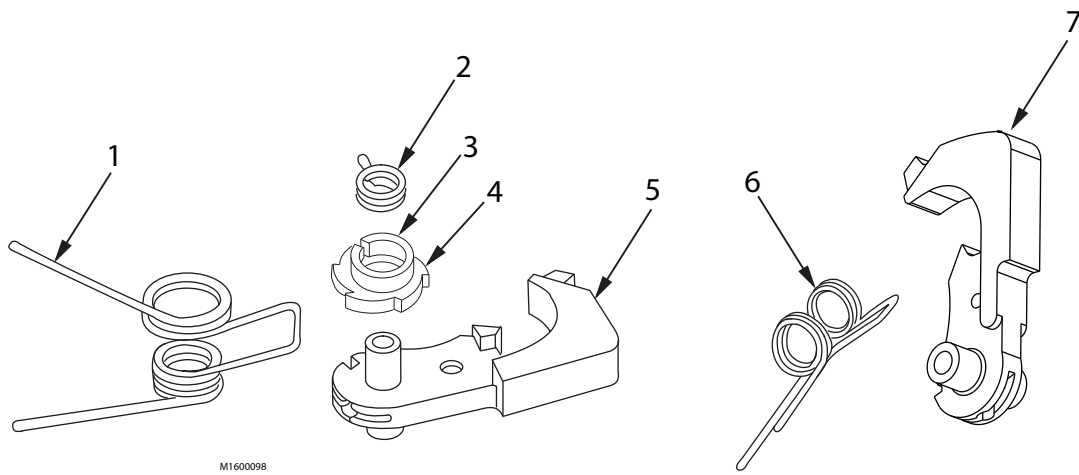


Figure 16. HAMMER ASSEMBLY 9349106, 9390032, AND 8448610.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
<p>GROUP 0502 HAMMER ASSEMBLY 9349106, 9390032, AND 8448610.</p> <p>FIG. 16. HAMMER ASSEMBLY 9349106, 9390032, AND 8448610.</p>						
1	PAFZZ	5360-01-144-1492	19200	9349107	SPRING, HELICAL, TORSION, HAMMER UOC: AR8, AZ1, AS1	1
2	PAFZZ	5360-01-136-5471	19200	9349109	SPRING, HELICAL, TORSION, BURST CAM UOC: AR8, AZ1, AS1	1
3	PAFZZ	1005-01-148-0172	19200	9349108	CAM, BURST (BLACK) UOC: AR8, AZ1	1
4	PAFZZ	3040-01-247-7969	19200	9390031	CAM, CONTROL (NICKEL/SHINY) UOC: AS1	1
5	PAFZZ	1005-01-134-3630	19200	9349110	HAMMER AND HAMMER PIN RETAINER ASSEMBLY UOC: AR8, AZ1, AS1	1
6	PAFZZ	5360-00-992-6648	19204	8448611	SPRING, HELICAL, TORSION UOC: AW4, AY6	1
7	PAFZZ	1005-00-017-9551	19200	8448612	HAMMER, FIRING, SMALL UOC: AW4, AY6	1

END OF FIGURE

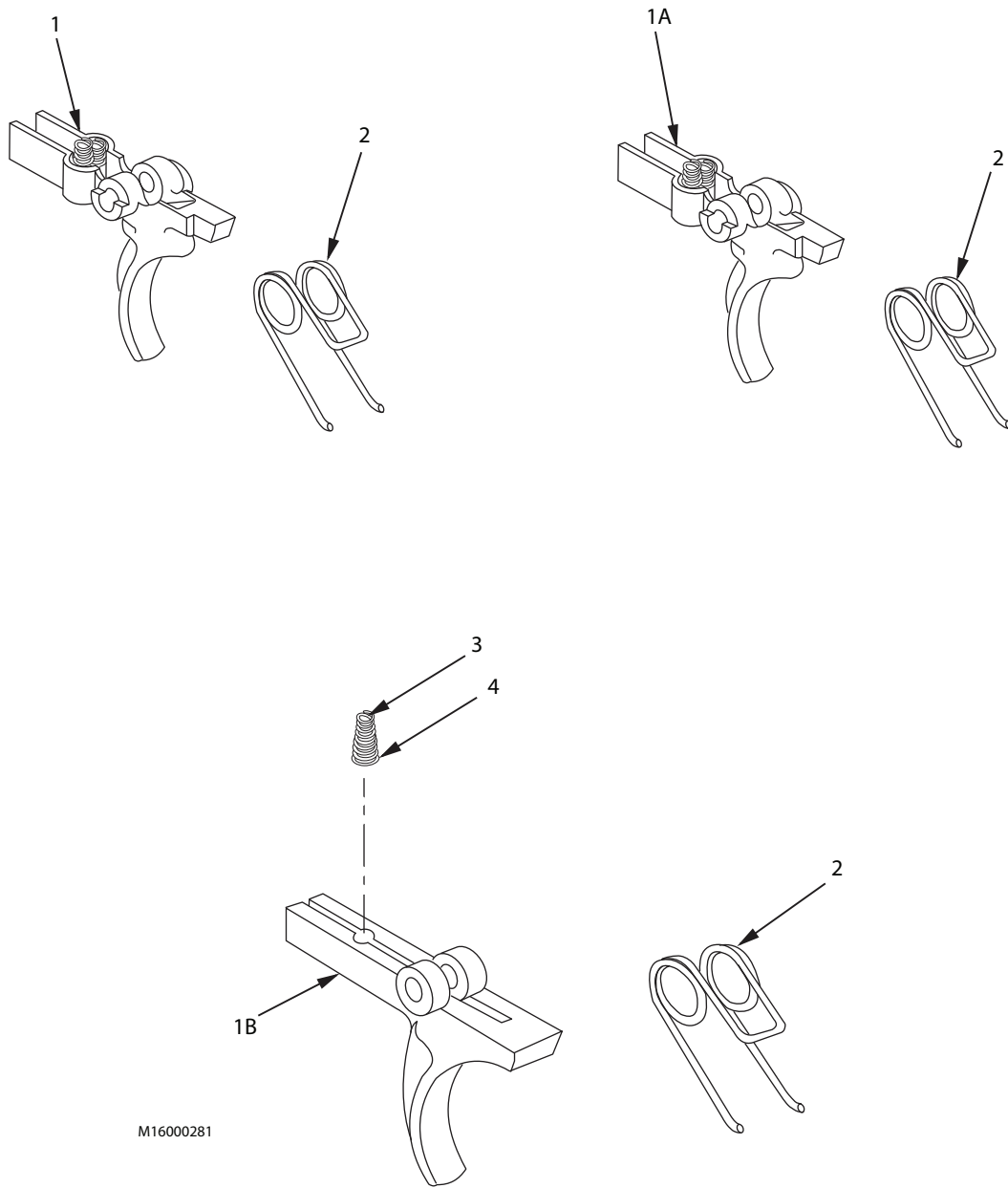
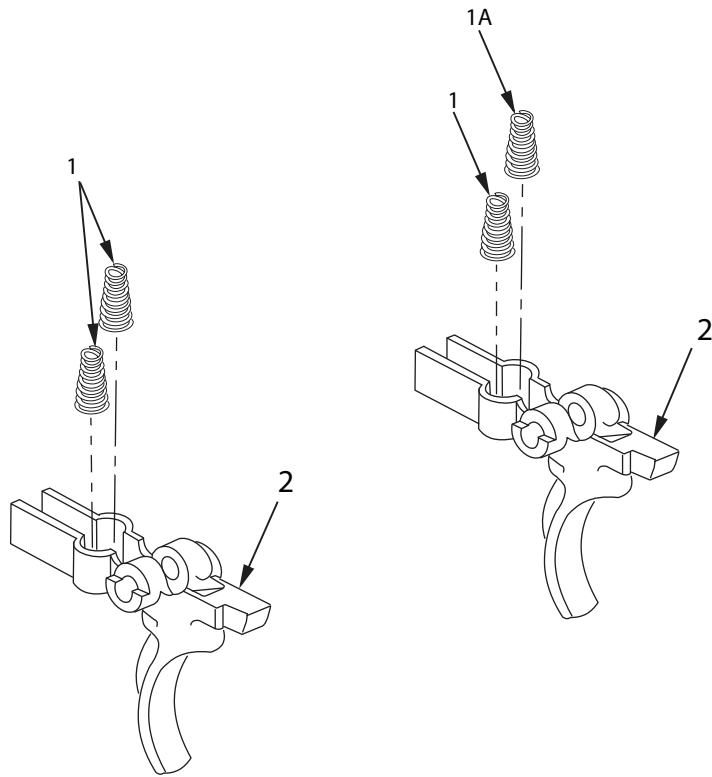


Figure 17. TRIGGER ASSEMBLY 9349115, 8448591, 12972697, AND 12972698.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0503 TRIGGER ASSEMBLY 9349115, 8448591, 12972697, AND 12972698.	
					FIG. 17. TRIGGER ASSEMBLY 9349115, 8448591, 12972697, AND 12972698.	
1	PAFFF	1005-01-219-2402	19200	9392518	TRIGGER SUBASSEMBLY FOR ASSEMBLY BREAKDOWN SEE FIG. 17) UOC: AR8, AZ1	1
1A	PAFFF	1005-01-395-4257	19200	12972696	TRIGGER SUBASSEMBLY (FOR ASSEMBLY BREAKDOWN SEE FIG. 17) UOC: AS1	1
1B	PAFZZ	1005-00-992-7307	19204	8448592	TRIGGER UOC: AW4, AY6	1
2	PAFZZ	5360-00-992-7308	19204	8448593	SPRING, HELICAL, TORSION, TRIGGER.....	1
3	PAFZZ	5360-01-396-0256	19200	12972695	SPRING, HELICAL, COMPRESSION, DISCONNECT (BLACK) UOC: AY6	1
4	PAFZZ	5360-00-992-7311	19200	8448594	SPRING, HELICAL, COMPRESSION (NICKEL/SHINY) UOC: AW4	1

END OF FIGURE

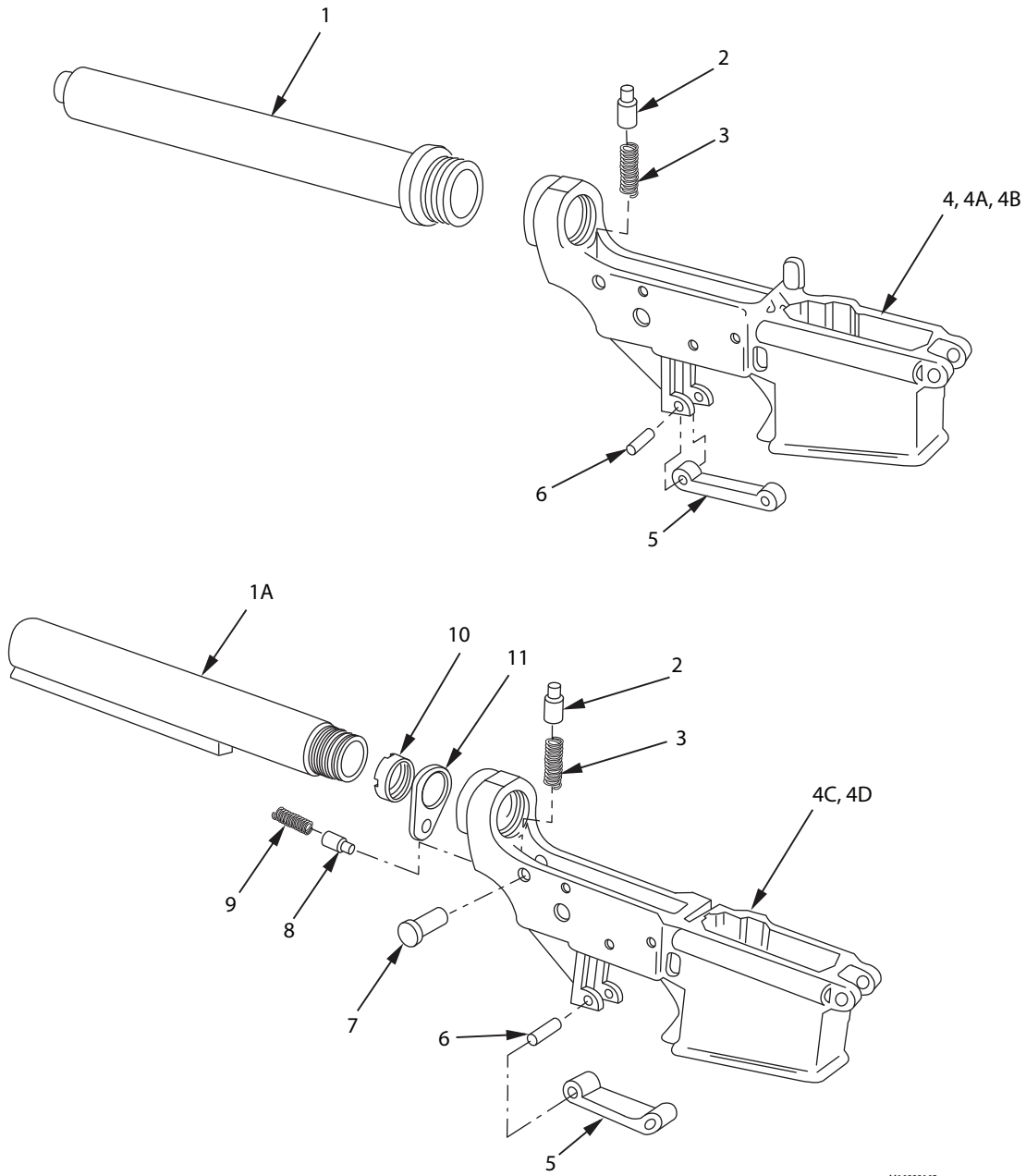


M16000542

Figure 18. TRIGGER SUBASSEMBLY 9392518 AND 12972696.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 050301 TRIGGER SUBASSEMBLY 9392518 AND 12972696.	
					FIG. 18. TRIGGER SUBASSEMBLY 9392518 AND 12972696.	
1	PAFZZ	5360-01-135-0353	19200	9349116	SPRING, HELICAL, COMP, DISCONNECT UOC: AR8, AZ1	2
1A	PAFZZ	5360-01-396-0256	19200	12972695	SPRING, HELICAL, COMP, DISCONNECT (BLACK) UOC: AS1	1
2	XAFZZ		19200	9390736	TRIGGER UOC: AR8, AZ1, AS1	1

END OF FIGURE

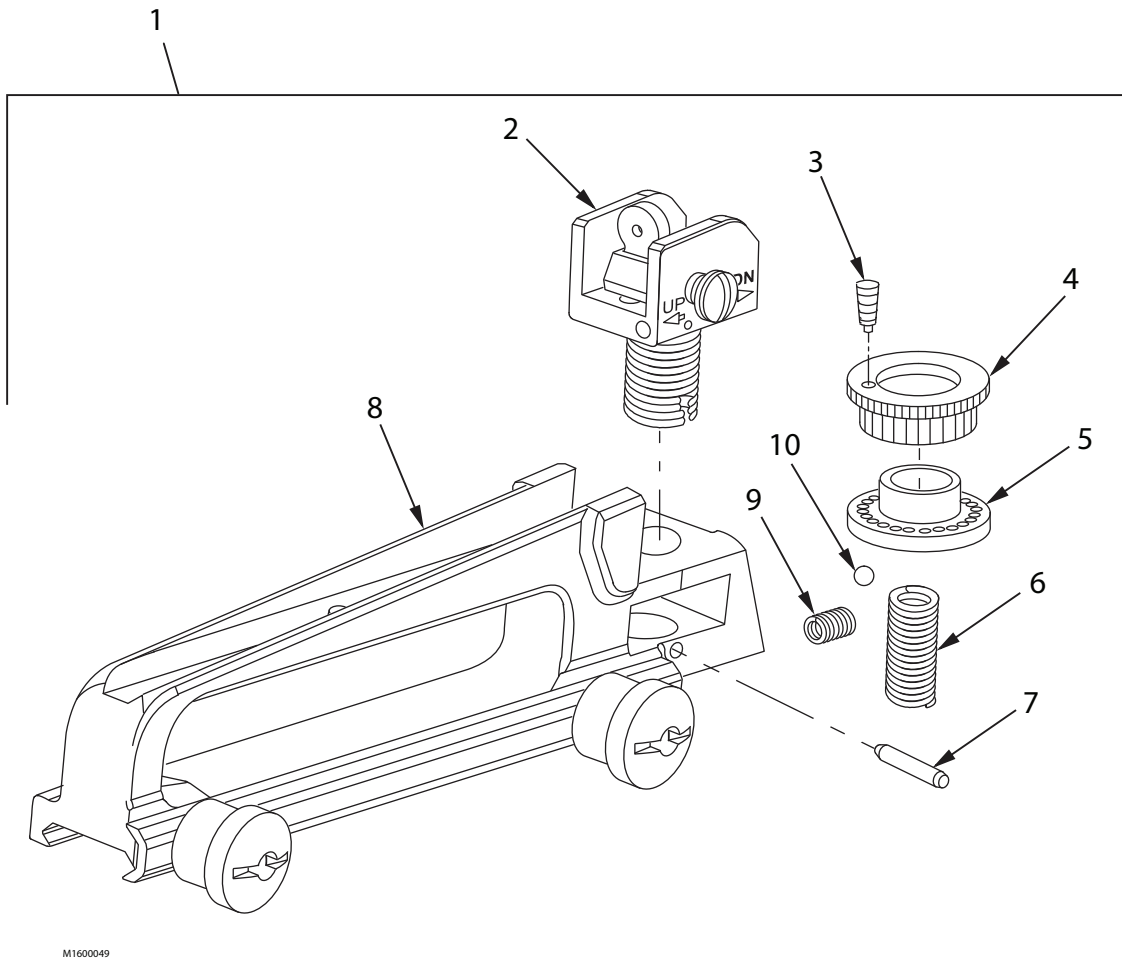


M16000162

Figure 19. LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY 9349101, 12012002, 12598102, 9390011, AND 12972690.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
<p>GROUP 0504 LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY 9349101, 12012002, 12598102, 9390011, AND 12972690.</p> <p>FIG. 19. LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY 9349101, 12012002, 12598102, 9390011, AND 12972690.</p>						
1	PAFZZ	5340-00-992-7297	19200	8448581	EXTENSION, LOWER RECEIVER UOC: AR8, AW4, AZ1	1
1A	PAFZZ	1005-01-233-8531	19200	9390019	EXTENSION, LOWER RECEIVER UOC: AS1, AY6	1
2	PAFZZ	5315-00-992-6651	19204	8448582	PIN, SHOULDER, HEADLESS, BUFFER RETAINER.....	1
3	PAFZZ	5360-00-992-6652	19200	8448583	SPRING, HELICAL, COMPRESSION, BUFFER RETAINER.....	1
4	XAFDA		19200	9349102	RECEIVER UOC: AR8	1
4A	XAFDA		19200	12012003	RECEIVER UOC: AW4	1
4B	XAFDA		19200 1	12598103	RECEIVER UOC: AZ1	1
4C	XAFDA		19200	9390015	RECEIVER UOC: AS1	1
4D	XAFDA		19200	12972652	RECEIVER UOC: AY6	1
5	PAFZZ	1005-00-992-7299	19204	8448587	GUARD, TRIGGER.....	1
6	PAFZZ	5315-00-058-6081	80205	MS16562-129	PIN, SPRING, TRIGGER GUARD.....	1
7	PAFZZ	5315-00-992-6653	19204	8448584	PIN, GROOVED, HEADED UOC: AS1, AY6	1
8	PAFZZ	5315-00-992-6654	19204	8448585	PIN, STRAIGHT, HEADLESS UOC: AS1, AY6	1
9	PAFZZ	5360-00-992-6655	19204	8448586	SPRING, HELICAL, COMPRESSION UOC: AS1, AY6	1
10	PAFZZ	5310-01-233-8625	19200	9390020	NUT, PLAIN, ROUND UOC: AS1, AY6	1
11	PAFZZ	1005-01-233-8530	19200	9390021	PLATE, RECEIVER END UOC: AS1, AY6	1

END OF FIGURE



M1600049

Figure 20. CARRYING HANDLE ASSEMBLY 12951011.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 07 CARRYING HANDLE ASSEMBLY 12951011.						
FIG. 20. CARRYING HANDLE ASSEMBLY 12951011.						
1	PAFFF	1005-01-465-0401	19200	12951011	CARRYING HANDLE ASSEMBLY UOC: AW4, AZ1, AS1, AY6	1
2	AFFFF		19200	12951026	. REAR SIGHT ASSEMBLY UOC: AW4, AZ1, AS1, AY6	1
3	PAFZZ	5305-01-134-3622	19200	9349065	. SCREW, INDEX UOC: AW4, AZ1, AS1, AY6	1
4	PAFZZ	1005-01-382-7089	19200	12951018	. ELEVATING MECHANISM UOC: AW4, AZ1, AS1, AY6	1
5	PAFZZ	5355-01-382-6801	19200	12951019	. KNOB UOC: AW4, AZ1, AS1, AY6	1
6	PAFZZ	5360-01-134-3710	19200	9349070	. SPRING, HELICAL, COMPRESSION UOC: AW4, AZ1, AS1, AY6	1
7	PAFZZ	5315-00-840-3812	80205	MS16562-121	. PIN, SPRING UOC: AW4, AZ1, AS1, AY6	1
8	PAFZZ	1005-01-382-7083	19200	12951021	. HANDLE, GUN CARRYING UOC: AW4, AZ1, AS1, AY6	1
9	PAFZZ	5360-01-382-6802	19200	12951020	. SPRING, HELICAL, COMPRESSION UOC: AW4, AZ1, AS1, AY6	1
10	PAFZZ	3110-00-183-9175	96906	MS19060-4808	. BALL BEARING UOC: AW4, AZ1, AS1, AY6	1

END OF FIGURE

**MAINTAINER
BULK MATERIAL**

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
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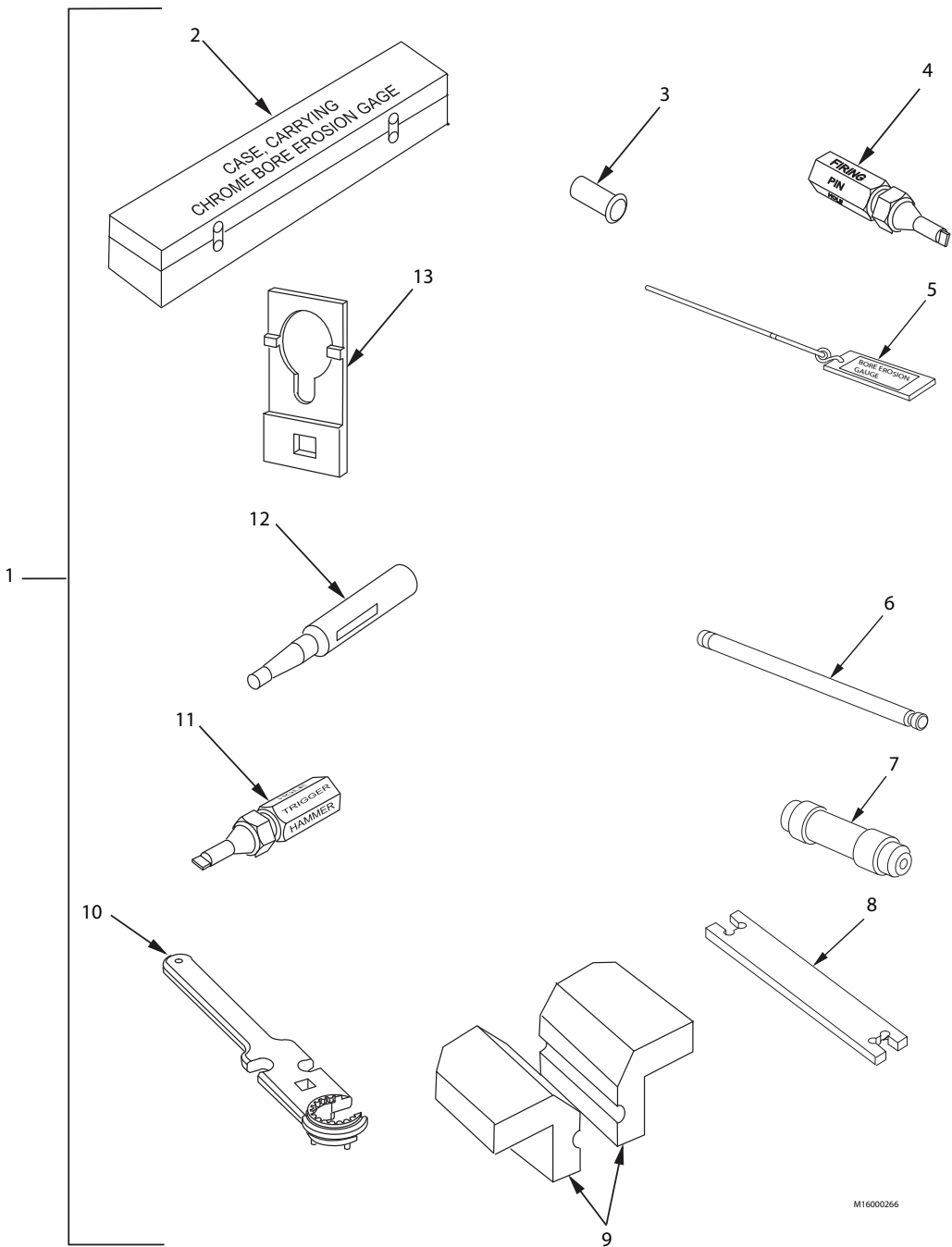
GROUP BULK MATERIAL FIG BULK

FIG. BULK.

1		9520-00-277-4902			Angle Iron.....	1
2					Steel Alloy 0.245 in Steel AISI 1095.....	1
3					Steel Alloy Material Block, Wire, Grade 4140, ASTM-A547.....	1

END OF FIGURE

**MAINTAINER
SPECIAL TOOLS**



M16000266

Figure . 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 SPECIAL TOOLS						
FIG. . SPECIAL TOOLS.						
1	PEFZZ		19204	8426685	MAINTENANCE KIT, GUN.....	2
2	PAFZZ	4933-01-035-5607	19204	12006359	. CASE, BORE GAUGE.....	2
3	PAFZZ	4933-00-800-7508	19204	8448201	. REFLECTOR TOOL, CHAMBER.....	2
4	PAFZZ	5220-01-075-5004	19200	12620101	. GAUGE, PLUG, PLAIN.....	2
5	PAFZZ	5220-01-676-3452	19200	13076673	. GAUGE, BARREL, EROSION.....	2
6	PAFZZ	5220-00-221-9391	19204	8448202	. GAUGE, STRAIGHTNESS.....	2
7	PAFZZ	5220-00-070-7814	19204	7799734	. GAUGE, HEADSPACE.....	2
8	PAFZZ	5220-00-070-7815	19204	7799735	. GAUGE, FIRING PIN PROTRUSION.....	2
9	PAFZZ	4933-00-070-9151	19204	11010032	. FIXTURE, BARREL REMOVAL.....	2
10	PAFZZ	5120-01-505-1677	19200	12997571	. WRENCH, COMBINATION.....	2
11	PAFZZ	5220-01-043-9473	19204	12006472	. GAUGE, PLUG, TAPER CYLINDER.....	2
12	PAFZZ	5315-01-310-0370	19200	12926769	. KEY, MACHINE.....	2
13	PAFZZ	5120-01-324-6631	19200	9390035	. WRENCH, SPANNER UOC: AS1, AY6	2

END OF FIGURE

**MAINTAINER
NATIONAL STOCK NUMBER INDEX**

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
	1	1	5315-00-597-5086	4	4
	1	2	5315-00-690-0544	12	4
	1	3	4933-00-800-7508	1	3
	1	1	5315-00-812-3312	14	9
	1	4	5315-00-826-3251	8	6
	2		5315-00-840-3812	9	11
	2			9	14
	2			20	7
	2		5315 -00-843-9487	15	8
	3		1005-00-937-3078	14	
	3		1005-00-978-1022	9	9
	3		5315-00-978-1023	9	8
	3		5360-00-978-1025	9	10
	3		5360-00-978-1036	7	15
	4		4710-00-978-1038	7	3
	4		5315-00-979-3930	12	2
	4		5360-00-979-3931	12	3
	4		5360-00-992-6648	16	6
5315-00-017-9537	14	15	1005-00-992-6649	14	4
3040-00-017-9539	10	5	5315-00-992-6650	14	28
1005-00-017-9540	10	4	5315-00-992-6651	19	2
5360-00-017-9541	9	12	5360-00-992-6652	19	3
1005-00-017-9543	12	7	5315-00-992-6653	14	29
1005-00-017-9547	3	1		19	7
1005-00-017-9548	14	8	5315-00-992-6654	14	12
1005-00-017-9551	16	7		14	12A
1005-00-056-2201	14	10		19	8
5360-00-056-2246	14	6	5360-00-992-6655	14	11
1005-00-056-2247	14	7		14	11A
5315-00-058-6044	7	7		19	9
5315-00-058-6081	19	6	5360-00-992-6665	14	1
5315-00-058-6678	2	4	1005-00-992-6667	14	23
	11	1	1005-00-992-7283	5	2
5220-00-070-7814	1	7	5305-00-992-7284	5	1
5220-00-070-7815	1	8	1005-00-992-7287	4	1
4933-00-070-9151	1	9	1005-00-992-7288	4	7
1005-00-087-8998	7	14	1005-00-992-7290	4	3
3110-00-183-9175	2	7	1005-00-992-7291	4	6
	9	4	5360-00-992-7292	4	5
	11	5		14	22
	20	10	5315-00-992-7294	3	3
5220-00-221-9391	1	6	5340-00-992-7297	19	1
9520-00-277-4902	BULK	1	1005-00-992-7299	19	5
1005-00-403-0964	15	9	5360-00-992-7301	14	13
5340-00-463-3892	15	3	1005-00-992-7302	14	14
5315-00-463-3894	15	13	1005-00-992-7307	17	1B
5360-00-523-8084	10	3	5360-00-992-7308	17	2
5310-00-527-3634	14	20	5315-00-992-7309	14	25

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5360-00-992-7311	17	4	5310-01-233-8625	19	10
5360-00-999-0404	6	3	5310-01-233-8626	15	7
5342-00-999-0405	6	2	4710-01-233-8637	7	3A
1005-00-999-0406	14	17	3040-01-247-7969	16	4
5325-00-999-0863	7	16	1010-01-264-6517	12	6
5325-00-999-0864	9	7	5365-01-267-2169	14	30
1005-00-999-1509	3	2	5305-01-268-1191	14	19
4933-01-035-5607	1	2	5315-01-310-0370	1	12
5220-01-043-9473	1	11	5120-01-324-6631	1	13
5315-01-048-9372	6	1	1005-01-357-5112	1	3
	10	2	5360-01-381-6183	11	7
5320-01-063-7635	12	8	1005-01-382-0953	1	1
5220-01-075-5004	1	4	1005-01-382-6795	9	6A
1005-01-128-9936	1	2	5355-01-382-6801	20	5
1005-01-134-3621	9	1	5360-01-382-6802	20	9
5305-01-134-3622	9	2	1005-01-382-7083	20	8
	20	3	1005-01-382-7086	11	2A
1005-01-134-3625	12	1	1005-01-382-7089	20	4
5355-01-134-3627	2	5	1005-01-383-2872	1	3A
	11	8	1005-01-395-4257	17	1A
1005-01-134-3629	7	2	5360-01-396-0256	17	3
1005-01-134-3630	16	5		18	1A
1005-01-134-3631	11	2	1005-01-441-1619	3	5
1005-01-134-3633	7	6	1005-01-442-0160	9	13
1005-01-134-3701	9	6	5360-01-452-9636	13	2
5360-01-134-3710	9	15	1005-01-453-1633	7	13
	20	6	1005-01-453-1635	7	12
5360-01-135-0353	18	1	1005-01-453-4221	7	8C
1005-01-135-3697	11	6	1005-01-453-4222	7	8B
5355-01-135-4972	9	16	1005-01-453-4224	7	11
1005-01-135-4973	14	31	1005-01-453-4225	7	9
5360-01-136-5471	16	2	1005-01-453-4226	8	1
5305-01-144-1490	11	3	1005-01-453-4227	7	17
5360-01-144-1492	16	1	1005-01-453-5383	7	8A
5305-01-144-1494	15	14	1005-01-453-5386	7	8
5340-01-144-1499	14	24	1005-01-453-6655	7	10
5340-01-145-7910	14	16	1005-01-454-1629	7	4A
1005-01-146-7684	7	4	1005-01-454-9880	9	6B
1005-01-146-7685	15	2	5305-01-459-5982	15	10
5305-01-147-8585	14	32	1005-01-465-0401	20	1
1005-01-148-0172	16	3	1005-01-471-5456	7	4C
5360-01-148-1751	2	6	5340-01-474-2845	12	5
	9	5	5310-01-475-9652	7	5
	11	4	5315-01-484-7071	2	12
1005-01-148-4805	14	21	5305-01-484-7074	2	9
1005-01-219-2402	17	1	5305-01-484-7075	2	3
1005-01-231-0973	1	1A	5360-01-484-7076	2	13
1005-01-233-8529	7	4B	5340-01-484-7999	2	2
1005-01-233-8530	19	11	5325-01-486-7585	2	11
1005-01-233-8531	19	1A	1005-01-497-2592	2	1
5315-01-233-8608	15	12	1005-01-505-1035	3	4
5360-01-233-8616	15	11	5120-01-505-1677	1	10
5360-01-233-8617	14	1A	1005-01-505-2886	4	8

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
1005-01-520-7064	15	1	5390-01-585-4340	14	27
1005-01-522-0772	14	2A	5305-01-586-6997	14	26
5305-01-540-4805	8	2	1005-01-673-4242	14	5
5360-01-540-4806	8	4	1005-01-673-4294	14	34
5365-01-540-4807	8	5	5220-01-676-3452	1	5
5360-01-540-4808	8	4A			

END OF WORK PACKAGE

**MAINTAINER
PART NUMBER INDEX**

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
	1	1	12973096	7	17
	1	2	12973097	8	3A
	1	3	12973099	7	13
	1	4	12973139	7	11
	1	5	12991254	12	5
	2		12991533	7	5
	2		12991850	12	9B
	2		12991851	7	4C
	2		12996813	2	1
	2		12996818	2	8
12011987	11	7	12996819	2	10
12012000	1	3	12996820	2	13
12012002	14	33A	12996821	2	12
12012003	19	4A	12996822	2	9
12012081	15	5	12996823	2	2
12012082	14	34	12996824	2	3
12012083	15	10	12999220	15	1
12597640	14	30	13004468	14	2A
12598102	14	33B	13004786	4	8
12598103	19	4B	13004787	3	4
12598107	7	4A	13011435	8	2
12598617	12	6	13012016	8	4A
12951011	20	1	13012017	8	4
12951018	20	4	13012018	8	5
12951019	20	5	13027937	14	27
12951020	20	9	13036743	14	26
12951021	20	8	13060592	14	5
12951026	20	2	8448502	3	3
12951028	11	2A	8448503	3	1
12972652	19	4D	8448504	3	2
12972670	9	6A	8448505	3	5
12972675	7	1B	8448506	5	2
12972690	14	33D	8448507	5	3
12972695	17	3	8448508	5	1
	18	1A	8448510	4	2
12972696	17	1A	8448511	4	1
12972697	14	18C	8448512	4	7
12972698	14	18A	8448513	4	3
12972700	1	1	8448515	4	6
12973001	1	3A	8448516	4	5
12973011	7	1A		14	22
12973012	9	6B	8448518	6	4
12973021	7	9	8448519	6	2
12973022	8	3	8448520	6	3
12973027	8	1	8448521-2	6	1
12973029	7	12		10	2
12973034	13	1	8448525	9	9
12973035	13	2	8448532	9	10

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
8448533	9	8	9349063	9	6
8448540	9	12	9349065	9	2
8448542	10	3		20	3
8448543	10	5	9349066	9	1
8448544	10	4	9349067	9	16
8448555	7	15	9349069	2	6
8448567	7	3		9	5
8448571	12	7		11	4
8448573	12	2	9349070	9	15
8448574	12	3		20	6
8448581	19	1	9349072	9	3
8448582	19	2	9349074	11	2
8448583	19	3	9349075	11	6
8448584	14	29	9349076	11	3
	19	7	9349077	2	5
8448585	14	12		11	8
	14	12A	9349085	10	1
	19	8	9349086	9	13
8448586	14	11	9349101	14	33
	14	11A	9349102	19	4
	19	9	9349106	14	3
8448587	19	5	9349107	16	1
8448591	14	18	9349108	16	3
8448592	17	1B	9349109	16	2
8448593	17	2	9349110	16	5
8448594	17	4	9349113	14	24
8448595	14	4	9349114	14	16
8448599	14	28	9349115	14	18B
8448609	14	25	9349116	18	1
8448610	14	3B	9349119	14	31
8448611	16	6	9349120	15	14
8448612	16	7	9349121	15	4
8448615	14		9349124	7	4
8448621	14	15	9349127	14	21
8448628	14	8	9349128	14	32
8448629	14	1	9349130	15	2
8448631	14	23	9390000	1	1A
8448633	14	6	9390007	7	4B
8448634	14	7	9390009	12	9A
8448635	14	17	9390011	14	33C
8448636	14	14	9390014	15	6
8448637	14	13	9390015	19	4C
8448638	14	10	9390016	7	3A
8448652	15	9	9390019	19	1A
8448653	15	3	9390020	19	10
8448655	15	13	9390021	19	11
8448697	12	8	9390022	14	1A
8448712	7	14	9390025	15	12
9349051	7	6	9390026	15	7
9349054	12	9	9390027	15	11
9349056	12	1	9390031	16	4
9349059	7	2	9390032	14	3A
9349062	7	1	9390736	18	2

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
9392518	17	1	MS39086-93	12	4
AN501D416-18	14	19	12973101	7	10
MS16562-103	2	4	13060593	14	5A
	11	1	11010032	1	9
MS16562-106	7	7	12006472	1	11
MS16562-119	14	9	12620101	1	4
MS16562-121	9	11	12997571	1	10
	9	14	7799734	1	7
	20	7	8448202	1	6
MS16562-129	19	6	12926769	1	12
MS16562-202	15	8	7799735	1	8
MS16562-223	8	6	8448201	1	3
MS16562-98	4	4	9390035	1	13
MS16624-3035	2	11	12006359	1	2
MS16626-3137	7	16	8426685	1	1
MS16632-3012	9	7	12973132	7	8
MS19060-4808	2	7	12973134	7	8A
	9	4	12973135	7	8B
	11	5	12973136	7	8C
	20	10	13076673	1	5
MS35335-61	14	20	9349000	1	2

END OF WORK PACKAGE

CHAPTER 7

SUPPORTING INFORMATION

M16 SERIES RIFLES AND M4 SERIES CARBINES

**MAINTAINER
REFERENCES**

SCOPE

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

TRAINING CIRCULARS

TC 3-22.9	Training Circular 3-22.9, Rifle and Carbine
TC 4-02.1	Army First Aid

FORMS

AFTO Form 22	Technical Manual (TM) Change Recommendation and Reply
AFTO Form 105	Inspection Maintenance Firing Data for Ground Weapons
DA FORM 2028	Recommended Changes to Publications and Blank Forms
DA FORM 2404	Equipment Inspection and Maintenance Worksheet
DA FORM 2408-9	Equipment Control Record
DA FORM 5988-E	Equipment Inspection and Maintenance Worksheet – Electronic
DD 361	Product Quality Deficiency Report (PDQR)
SF FORM 368	Product Quality Deficiency Report

MISCELLANEOUS PUBLICATIONS

AFI 21-101	Aircraft and Equipment Maintenance Management
AFI 21-201	Management and Maintenance of Non-Nuclear Munitions
AFI 36-254	Air Force Instruction
AFI 36-2654	Combat Arms Program and Supports
AFJMAN 23-215	Air Force Joint Manual, Reporting of Supply Discrepancies
AFMAN 44-163(I)	Air Force Manual, First Aid
AFMAN 91-201	Air Force Manual, Explosives Safety Standards
AR 700-138	Army Logistics Readiness and Sustainability
AR 725-50	Requisition, Receipt, and Issue System
AR 750-1	Army Materiel Maintenance Policy
CTA 8-100	Army Medical Department Expendable/Durable Items

MISCELLANEOUS PUBLICATIONS - Continued

CTA 50-909	Field and Garrison Furnishings and Equipment
CTA 50-970	Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items)
DA PAM 25-30	Consolidated Army Publications and Forms Index
DA PAM 738-751	Functional Users Manual for the Army Maintenance Management System (TAMMS) Users Manual
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual
DOD 4160.28	DOD Manual Defense Demilitarization: Procedural Guidance
MIL-STD-1186	Cushioning, Anchoring, Bracing, Blocking and Waterproofing; with Appropriate Test Methods
MIL-STD-2073	DOD Standard practice for Military Packaging
NAVSEA Instruction 8370.2	Small arms and weapons management policy and guidance
NAVSEA OP 5	Volume 1, Ammunition and Explosive Safety Ashore
NAVSEAINST 4790.8	Ships' Maintenance and Management (3m) Manual
NTRP 4-02.1	Navy First Aid Manual
SB 746-1	Publications for Packaging Army General Supplies
SPI 00-856-6885	Special Packaging Instructions for M16 Rifle

TECHNICAL BULLETINS

TB 43-180	Interactive Electronic Technical Manual (IETM) for Calibration and Repair Requirements for the Maintenance of Army Materiel
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TECHNICAL MANUALS/INSTRUCTIONS/ORDERS

Air Force Technical Order 00-5-1	AF Technical Order System
MIP Series 7611	Maintenance Index Pages (MIP) Series for Small Arms and Light Weaponry
SPI 00-856-6885	Special Packaging Instruction
TM 9-1005-319-10	Operator Manual for Rifle, 5.56 mm, M16A2 W/E (NSN 1005-01-128-9936)(EIC: 4GM); Rifle, 5.56 mm, M16A3 (1005-01-357-5112); Rifle, 5.56 mm, M16A4 (1005-01-383-2872) (EIC: 4F9); Carbine, 5.56 mm, M4W/E (1005-01-231-0973) (EIC: 4FJ); Carbine, 5.56 mm, M4A1 (1005-01-382-0953) (EIC: 4GC)
TM 9-1005-319-10-HR	Hand Receipt Covering Contents of Components of End Item (COEI) Operator Manual for Rifle, 5.56 mm, M16A2 W/E (NSN 1005-01- 128-9936) (EIC:4GM); Rifle, 5.56 mm,

TECHNICAL MANUALS/INSTRUCTIONS/ORDERS - Continued

M16A3 (1005-01-357-5112); Rifle, 5.56 mm, M16A4 (1005-01-383-2872) (EIC: 4F9); Carbine, 5.56 mm, M4 W/E (1005-01-231-0973)(EIC: 4FJ); Carbine, 5.56 mm, M4A1 (1005-01-382-0953) (EIC: 4GC)

TM 750-244-7 Procedures for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090and 1095 To Prevent Enemy Use

TO 00-20 Series Technical Orders

TO 00-35D-54 Materiel Deficiency Reporting and Investigating System

TO 11W3-5-5-24 Technical Manual Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) Rifle, 5.56MM, M16 (1005-00-856-6885) (EIC:4F7) Rifle, 5.56 MM, M16A1 (1005-00-073-9421) (EIC:4FC)

TO 11W-1-10 Historical Data Recording of Inspection, Maintenance, and Firing Data for Ground Weapons

TO 33K-1-100 TMDE Calibration Interval Technical Order and Work Unit Reference Guide

END OF WORK PACKAGE

MAINTAINER MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of the maintenance and repair functions.

The MAC (immediately following this introduction) designates overall authority and responsibility for the performance of all maintenance tasks on the identified end item or component. The application of the maintenance tasks to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels/classes which are shown in the MAC in column (4). Column (4) is divided into two secondary columns. These columns indicate the maintenance levels/classes of 'Field' and 'Sustainment'. Each maintenance level column is further divided into two sub-columns. These sub-columns identify the maintenance classes and are as follows:

1. Field level maintenance classes:
 - a. Crew (operator) maintenance. This is 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. Items with a "C" ("O" for joint service reporting) in the third position of the Source, Maintenance, and Recoverability (SMR) code may be replaced at the crew (operator) class. A code of "C" ("O" for joint service) in the fourth position of the SMR code indicates complete repair is authorized at the crew (operator) class.
 - b. Maintainer maintenance. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion by field level units. This maintenance is performed either on the system or after it is removed. An "F" in the third position of the SMR code indicates replacement of assemblies, subassemblies, or other components is authorized at this level. An "F" in the fourth position of the SMR code indicates complete repair of the identified item is allowed at the Maintainer class. Items repaired at this level are normally returned to the user after maintenance is performed.
2. Sustainment level maintenance classes:
 - a. Below depot sustainment. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The item subject to maintenance has normally been forwarded to a maintenance facility away from the field level supporting units. An "H" in the third position of the SMR code indicates replacement of assemblies, subassemblies, or other components is authorized at this class. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at this class. Items are normally returned to the supply system after maintenance is performed at this class.
 - b. Depot. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. Assets to be repaired at this class are normally returned to an Army Depot or authorized contractor facility. The replace function for this class of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. 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 system after maintenance is performed at this class.

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 task as referenced from the MAC.

INTRODUCTION - Continued

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

Maintenance functions (tasks)

Maintenance functions are limited to and defined as follows:

1. Inspect. Step-by-step instructions 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).
2. Test. Step-by-step instructions to verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards, e.g., load testing of lift devices or hydrostatic testing of pressure hoses. For software, to verify usability/operability/functionality of the software.
3. Remove. Step-by-step instructions for taking a component off an asset to facilitate other maintenance on a different component or on the same component (except for replace and repair.) For software, it is step-by-step instructions for uninstalling/removing the software from a workstation or other viewing hardware.
4. Install. Step-by-step instructions for placing, positioning, or otherwise locating a component to make it part of a higher level end item. The install task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code. For software, it is step-by-step instructions putting the software on a workstation or other viewing hardware.
5. Replace. Step-by-step instructions for taking off an unserviceable component and putting a serviceable component in its place. The replace task is authorized by the LPD/MAC and the assigned maintenance level is shown as the third position code of the SMR code.
6. Repair. Step-by-step instructions for restoring an item or software to a completely serviceable or fully mission capable status. The repair task is authorized by the LPD/MAC and the assigned maintenance level is shown as the fourth position code of the SMR code. The following definitions are applicable to the "repair" maintenance task: welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.
7. Overhaul. Step-by-step instructions to restore an item to a completely serviceable/operational condition as required by maintenance standards in the appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to a like new condition.
8. Lubricate. Step-by-step instructions for applying a material (e.g., oil or grease) to reduce friction and allow a component to operate in a more efficient manner.
9. Mark. Step-by-step instructions for restoring obliterated identification on an asset.
10. Pack. Step-by-step instructions to place an item into a container for either storage or shipment after service and other maintenance operations have been completed.
11. Unpack. Step-by-step instructions for removing an asset from a storage or shipping container in preparation to perform further maintenance (e.g., repair or install).
12. Preserve. Step-by-step instructions for treating systems and equipment whether installed or stored, to ensure a serviceable condition.
13. Prepare for use. Step-by-step instructions required to make an asset ready for other maintenance (e.g., remove preservatives, lubricate, etc.).
14. Assemble. Step-by-step instructions to join the component pieces of an asset together to make a complete serviceable asset.
15. Disassemble. Step-by-step instructions to break down (take apart) 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).
16. Clean. Step-by-step instructions on how to remove dirt, corrosion or other contaminants from equipment. Refer to appropriate painting, lubrication, and preservation methods to restore original corrosion

INTRODUCTION - Continued

- prevention and control methods when removed as a result of cleaning and/or when using cleaning to remove corrosion from the item.
17. Nondestructive inspection. Step-by-step instructions on preparation and accomplishment inspections which do not destroy or damage the equipment.
 18. Preparation for storage. Step-by-step instructions for preparing the equipment for placement into administrative, short term, and/or long-term storage.
 19. Preparation for shipment. Step-by-step instructions for preparing the equipment to be shipped or transported.
 20. Transport. Step-by-step instructions and guidance for transporting/shipping the equipment.
 21. Load. Step-by-step instructions for one of three tasks:
 - a. For transportation, the act of placing assets onto a transportation medium (e.g., pallet, truck, container).
 - b. For weapons/weapons systems, the act of placing munitions into the weapon/weapons system.
 22. Unload. Step-by-step instructions for one of three tasks:
 - a. For transportation, the act of removing assets from a transportation medium (e.g., pallet, truck, container).
 - b. For weapons/weapons systems, the act of removing munitions from the weapon/weapons system.

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 (tasks) outlined previously.)

Column (4) Maintenance Level. Column (4) specifies each level/class of maintenance authorized to perform each function listed in column (3), by indicating work time required in the appropriate sub-column. This work time figure represents the active time required to perform that maintenance task at the indicated level/class of maintenance. If the number or complexity of the tasks within the listed maintenance task varies at different maintenance classes, appropriate work time figures are to be shown for each class.

The work time figure represents the average time required to perform the prescribed task (assembly, subassembly, component, module, end item, or system) on the item under typical operating conditions for that maintenance level/class. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance tasks authorized in the MAC. The symbol designations for the various maintenance levels/classes and classes are as follows::

Field:

- C Crew maintenance
- F Maintainer maintenance

Sustainment:

- L Specialized Repair Activity (SRA)
- H Below depot maintenance

INTRODUCTION - Continued

D Depot maintenance

NOTE

The "L" maintenance class is not included in column (4) of the MAC. Functions to this class of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS 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 a number code, those common tool sets, kits, or outfits (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), common tools that are not part of a set, kit, or outfit, 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 table.

Column (6) Remarks Code. When applicable, this Column (6) 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 Level. The lowest class 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 (NSN). 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 task being performed as indicated in the MAC.

END OF WORK PACKAGE

**MAINTAINER
MAINTENANCE ALLOCATION CHART (MAC)**

Table 1. MAC for M16 Series Rifles and M4 Series Carbines.

(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)		
00	M16A2, M16A3, M16A4 5.56mm Rifle, and M4, M4A1 Carbine	Inspect	0.1	0.3			19, 19	
		Disassemble	0.1					
		Test	0.1	0.2			17, 19	
		Clean	0.2					
		Lubricate/ Lubrication	0.2					
		Assemble	0.1					
		Overhaul					**	
01	Back-Up Iron Sight (M16A3, M16A4, M4, M4A1)	Remove		0.1			17	
		Disassemble		0.2			15, 17	
		Inspect	0.1	0.1				
		Clean	0.1	0.1				
		Replace		0.1			17	
		Assemble		0.2			15, 17	
		Lubricate/ Lubrication	0.1	0.1				
		Install		0.1			17	

Table 1. MAC for M16 Series Rifles and M4 Series Carbines - 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)		
02	Bolt and Bolt Carrier Assembly	Disassemble	0.1	0.1			17	
		Inspect	0.1	0.1			19	
		Test		0.1				
		Clean	0.2	0.2				
		Repair		0.1				17, 19
		Replace		0.1				18, 19
		Lubricate/ Lubrication	0.1	0.1				
		Remove	0.1					
		Install	0.1					
		Assemble	0.1	0.1				
0201	Breech Bolt Assembly	Disassemble	0.1	0.1			1, 17, 23	
		Inspect	0.1	0.1			19	
		Test		0.1			19	
		Clean	0.1	0.1				
		Replace		0.2				17, 19
		Lubricate/ Lubrication	0.1	0.1				
		Remove	0.1					
		Install	0.1					
		Assemble	0.0	0.1				1, 17, 23
0202	Key and Bolt Carrier Assembly	Disassemble		0.1			1, 17, 23	
		Inspect	0.1	0.1				
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Replace		0.1				
		Install	0.1					
		Assemble		0.2				1, 17, 23, 24

Table 1. MAC for M16 Series Rifles and M4 Series Carbines - 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)		
03	Charging Handle Assembly	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Clean		0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Remove	0.1					
		Replace		0.1			17	
		Assemble		0.1			17	
04	Upper Receiver and Barrel Assembly	Disassemble	0.1	0.5			1, 4, 14, 17, 23, 24	
		Inspect	0.1	0.2			19	
		Repair		0.5			1, 4, 14, 17, 23	A, B
		Replace		0.5			1, 4, 14, 17, 22, 24	
		Clean	0.2	0.1			19	
		Lubricate/ Lubrication	0.1	0.1				
		Remove	0.1				19	
		Install	0.1					
		Assemble	0.1	0.5			1, 4, 14, 17, 17, 18, 19, 22, 24	
		Test		0.2			19	
0401	Upper Handguard Assembly (M4, M4A1, M16A3, M16A4)	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Clean		0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Repair		0.1			17	
		Replace		0.1				
		Assemble		0.1			17	

Table 1. MAC for M16 Series Rifles and M4 Series Carbines - 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)		
0402	Upper Receiver Assembly	Disassemble		0.3			17	
		Inspect	0.1	0.1				
		Repair		0.3			1, 17, 23	
		Replace		0.5			18, 19	
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Assemble		0.3			17	
		Test		0.1				
040201	Forward Assist Assembly	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Replace		0.2			17, 18	
		Assemble		0.1			17	
040202	Rear Sight Assembly (M16A2)	Disassemble		0.3			17	
		Inspect	0.1	0.1				
		Repair		0.3			17, 18	
		Replace		0.5			18, 19	
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Assemble		0.3			17	
		Test		0.1				

Table 1. MAC for M16 Series Rifles and M4 Series Carbines - 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)		
0403	Barrel Assembly (M16A2, M16A3, M16A4) and Replacement Barrel and Front Sight Assembly (M4, M4A1)	Disassemble		0.4			1, 1, 17, 23	A
		Inspect	0.1	0.1				
		Repair		0.1			17	A
		Replace		0.2			18, 19	
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
0404	Barrel Stop Assembly (M16A3, M16A4)	Assemble		0.3			14, 17, 19	
		Remove		0.1			17	
		Inspect	0.1	0.1				
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Disassemble		0.1			17	
		Replace		0.1			17	
		Assemble		0.1			17	
05	Lower Receiver and Buttstock Assembly	Install		0.1			17	
		Disassemble		0.3			1, 17, 23	C
		Inspect	0.1	0.1				
		Clean	0.2	0.2				
		Lubricate/ Lubrication	0.1	0.1				
		Repair		0.3			17, 18, 19	C, D, E
		Replace		0.2			17, 18, 19	C, D, E
		Assemble		0.3			1, 17, 23	D, E
05	Lower Receiver and Buttstock Assembly	Test		0.1			19	

Table 1. MAC for M16 Series Rifles and M4 Series Carbines - 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)		
0501	Buttstock Assembly	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Replace		0.1			17	
		Assemble		0.1			17	
0502	Hammer Assembly	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Replace		0.1				
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Assemble		0.1			17	
0503	Trigger Assembly	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Replace		0.1			17, 18	
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Assemble		0.1			1, 13, 17, 23	
050301	Trigger Subassembly (M16A2, M16A4, M4)	Disassemble		0.1			17	
		Inspect	0.1	0.1				
		Replace		0.1			17, 18	
		Clean	0.1	0.1				
		Lubricate/ Lubrication	0.1	0.1				
		Assemble		0.1			1, 13, 17, 23	

Table 1. MAC for M16 Series Rifles and M4 Series Carbines - 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)		
0504	Lower Receiver and Receiver Extension Assembly	Disassemble		0.2			1, 17, 23, 24, 25	
		Inspect	0.1	0.1			19	
		Clean	0.1	0.1				
		Repair		0.2			3	
		Lubricate/ Lubrication	0.1	0.1				
		Assemble		0.2			1, 17, 20, 23, 24, 25	
06	Magazine	Remove	0.1					
		Disassemble	0.1					
		Inspect	0.1					
		Test	0.1					
		Clean	0.1					
		Replace	0.1	0.1				
		Assemble	0.1					
		Install	0.1					
07	Sling	Remove	0.1					
		Inspect	0.1					
		Replace	0.1					
		Install	0.1					
08	Forward Grip	Remove	0.1					
		Disassemble	0.1					
		Inspect	0.1					
		Clean	0.1					
		Assemble	0.1					

*NOTE

This is a joint service manual. While Army uses a "C," other services may use an "O" in this column.

Table 2. Tools and Equipment.

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
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Table 2. Tools and Equipment - Continued.

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Caps, Vise Jaw	5120-00-221-1506	01570
2	F	Case, Bore Gauge	4933-01-035-5607	12006359
3	F	Die, Set, Metal Stamping	5110-00-289-0002	9-37912
4	F	Fixture, Barrel Removal	4933-00-070-9151	11010032
5	F	Fixture, Measuring, Trigger Pull	4933-00-647-3696	7274758
6	F	Flashlight	6230-00-264-8261	10082473
7	F	Gauge, Barrel, Erosion	5220-01-676-3452	13076673
8	F	Gauge, Firing Pin Protrusion	5220-00-070-7815	7799735
9	F	Gauge, Headspace	5220-00-070-7814	7799734
10	F	Gauge, Plug, Plain	5220-01-075-5004	12620101
11	F	Gauge, Plug, Taper Cylinder	5220-01-043-9473	12006472
12	F	Gauge, Straightness	5220-00-221-9391	8448202
13	F	Machine, Key	5315-01-310-0370	129267769
14	F	Modifie Needle Nose Pliers		
15	F	Pliers, Retaining Ring	5120-00-293-0048	0100
16	F	Reflector Tool, Chamber	4933-00-800-7508	8448201
17	F	Sets, Kits, and Outfits for Tool Kit, Small Arms	5180-01-506-8287	SC 5180-B71
18	F	Shop Set, Small Arms	4933-00-564-8971	SC 4933-95-A11
19	F	Tool and Gauge Set, DS/GS Maintenance for 5.56mm Rifle, M16 Series		8426685
20	F	Torque Wrench, in-lb	5120-00-221-7947	A-A-1274
21	F	Torque Wrench, ft-lb	5120-00-640-6364	A-A-2411
22	F	Trigger Weights	4933-00-647-3969	7274758
23	F	Vise, Machinist's	5120-00-293-1439	01432
24	F	Wrench, Combination	5120-01-505-1677	12997571
25	F	Wrench, Spanner	5120-01-324-6631	9390035

Table 3. Remarks.

REMARKS CODE	REMARKS
A	Tool, Front Sight Post Removal and Installation
B	Depressor, Front Sight Detent
C	Tool, Pivot Pin Removal
D	Tool, Pivot Pin Installation
E	Pin, Slave

END OF WORK PACKAGE

**MAINTAINER
EXPENDABLE AND DURABLE ITEMS LIST**

EXPENDABLE AND DURABLE ITEMS LIST INTRODUCTION**Scope**

This work package lists expendable and durable items that you will need to operate and maintain the M16 series Rifle and M4 series Carbine. 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 and 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, O = AMC, 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	8040-00-944-7292	ADHESIVE KIT MMM-A-1754 (81348)	KT
2	F	9520-00-277-4902	ANGLE IRON	EA
3	C	1005-00-494-6602	BRUSH,CLEANING SMALL ARMS: TOOTH 8448462 (19204)	EA
4	O	7920-00-205-2401	BRUSH,CLEANING TOOLS AND PARTS MILS43871 (81349)	EA
5	O	8020-00-244-0153	BRUSH, ARTIST'S METAL FERRULE, FLAT CHISEL EDGE, 7/16 W, 1-1/8 EXPOSED BRISTLE H-B-241 (81348)	EA
6	F	1005-00-716-2702	BRUSH, CLEANING SMALL ARMS 7162702 (19205)	EA
7	C	1005-00-903-1296	BRUSH, CLEANING SMALL ARMS: BORE 11686340 (19204)	EA
8	C	1005-00-999-1435	BRUSH, CLEANING SMALL ARMS: CHAMBER 8432358 (19204)	EA
9	O	6850-00-965-2332	CARBON REMOVING COMPOUND P-C-111 (81348)	GL
10	O	9150-01-079-6124	CLEANER LUBRICANT, AND PRESERVATIVE (CLP): 4 oz (118.30 ml) BOTTLE MIL-PRF-63460 (27412)	EA
11	O	9150-01-054-6453	CLEANER LUBRICANT, AND PRESERVATIVE (CLP): 1 pt (0.47 l) BOTTLE MIL-PRF-63460 (27412)	EA
12	O	9150-01-053-6688	CLEANER LUBRICANT, AND PRESERVATIVE (CLP): 1 gal. (3.79 l) CAN MIL-PRF-63460 (27412)	EA
13	C	9150-01-102-1473	CLEANER LUBRICANT, AND PRESERVATIVE (CLP): 1/2 oz (14.79 ml) BOTTLE MIL-PRF-63460 (81349)	EA
14	F	9920-00-292-9946	CLEANER, TOBACCO PIPE: COTTON TURF, WIRE CORE (36 per pkg) DILLSPIPE CLEANER (89855)	EA
15	C	6850-00-224-6656	CLEANING COMPOUND RIFLE BORE (RBC): SMALL ARMS BORE CLEANING SOLUTION 2 oz (59.15 ml) BOTTLE MIL-PRF-372 (81349)	OZ
16	O	6850-00-224-6663	CLEANING COMPOUND RIFLE BORE (RBC): SMALL ARMS BORE CLEANING SOLUTION 1 GAL. (3.79 l) CAN MIL-PRF-372 (81349)	CN

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
17	O	6850-00-224-6657	CLEANING COMPOUND, RIFLE BORE (RBC): SMALL ARMS BORE CLEANING SOLUTION 8 oz (236.59 ml) CAN MIL-PRF-372 (81349)	CN
18	O	5350-00-221-0872	CLOTH ABRASIVE A-A-1206 (58536)	SH
19	F	6810-00-244-0290	DICHLOROMETHANE TECHNICAL 5 GAL. (18.93 l) PAIL ASTM D 4701 (81346)	CN
20	F	6810-00-616-9188	DICHLOROMETHANE TECHNICAL 600 lb (272.16 kg) DRUM ASTM D 4701 (81346)	DR
21	F	1305-01-568-5686	DUMMY CARTRIDGE, 5.56 MILLIMETER 13023595 (19200)	EA
22	O	8010-00-297-0560	ENAMEL OLIVE DRAB NO. 3407, 1 GAL. (3.79 l) CAN TT-E-527 (81348)	GL
23	O	8415-00-823-7458	GLOVES CHEMICAL AND OIL PROTECTIVE Size 9 MIL-DTL-32066 (81348)	PR
24	O	8415-00-823-7459	GLOVES CHEMICAL AND OIL PROTECTIVE Size 10 MIL-DTL-32066 (81348)	PR
25	O	8415-00-823-7460	GLOVES CHEMICAL AND OIL PROTECTIVE Size 11 MIL-DTL-32066 (81348)	PR
26	F	9150-00-754-2595	GREASE MOLYBDENUM DISULFIDE MIL-G-21164 (81349)	LB
27	C	1005-01-113-0321	HANDLE SECTION CLEANING ROD, SMALL ARMS 8436776 (19204)	EA
28	O	9150-01-260-2534	LUBRICANT SOLID FILM 16 oz (473.18 ml) SPRAY CAN MIL-L-23398 (81349)	OZ
29	F	9150-01-646-0099	LUBRICANT SOLID FILM PAINT PEN DISPENSER MIL-L-23398 81349	EA
30	C	9150-00-292-9689	LUBRICATING OIL WEAPONS (LAW) 1 qt (0.95 l) CAN MIL-PRF-14107 (81349)	QT
31	C	9150-00-935-6597	LUBRICATING OIL WEAPONS (LSA): SEMIFLUID 2 oz (59.15 ml) PLASTIC BOTTLE MIL-L-46000 (81349)	OZ
32	C	9150-00-889-3522	LUBRICATING OIL WEAPONS (LSA): SEMIFLUID 4 oz (118.30 ml) PLASTIC BOTTLE MIL-L-46000 (81349)	OZ
33	O	9150-00-687-4241	LUBRICATING OIL WEAPONS (LSA): SEMIFLUID 1 qt (0.95 l) CAN	CN

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
34	F	9150-00-753-4686	MIL-L-46000 (81349) LUBRICATING OIL WEAPONS (LSA): SEMIFLUID 1 gal. (3.79 l) CAN MIL-L-46000 (81349)	CN
35	F	5305-00-984-5695	MACHINE SCREWS MS 35206-315 (96906)	HD
36	O	5340-01-230-3181	MOUNTING BRACKET (M4/M4A1 ONLY 12556036 (19200)	EA
37	F	5310-00-056-3395	NUTS MS 35649-2382 (96906)	HD
38	O	8010-00-087-0102	PAINT ENAMEL, SEMIGLOSS: PAINT FOR BLANK FIRING ATTACHMENT (M15A2)1 qt CAN (RED - Rifle) TT-E-529 (81348)	EA
39	O	8010-01-031-1274	PAINT ENAMEL, SEMIGLOSS: PAINT FOR BLANK FIRING ATTACHMENT (M23) 1 pt CAN (YELLOW - Carbine) TT-E-529 (81348)	EA
40	O	3990-00-795-3595	PAN WASH (BOX, TOTE) 1211 (94453)	EA
41	F	6850-00-826-0981	PENETRANT KIT SAE-AMS2644 (81349)	KT
42	F	8135-01-019-1691	POLYETHYLENE SHEET PE88-80-2 (84744)	EA
43	O	1005-01-394-7677	PROTECTOR RAIL (M16A4, M4/M4A1 ONLY 12972676 (19200)	EA
44	C	1005-00-050-6357	ROD SECTION CLEANING, SMALL ARMS (3 required) 8436775 (19204)	EA
45	F	8030-00-670-8553	SEALING COMPOUND DEVCONF (16059)	KT
46	O	6850-01-474-2319	SOLVENT GENERAL: Type II 1 gal. (3.79 l) CAN MIL-PRF-680 (81349)	GL
47	O	6850-01-474-2317	SOLVENT, GENERAL Type II 5 GAL. (18.93 l) PAIL MIL-PRF-680 (81349)	GL
48	O	6850-01-474-2316	SOLVENT, GENERAL: Type II 55 GAL. (208.20 l) DRUM MIL-PRF-680 (81349)	GL
49	F		STEEL ALLOY 0.245 IN STEEL AISI 1095	EA
50	F		STEEL ALLOY MATERIAL BLOCK, WIRE. GRADE 4140, ASTM-A547	EA

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
51	C	1005-00-912-4248	SWAB SMALL ARMS 11686408 (19204)	SH
52	C	1005-00-937-2250	SWAB HOLDER SECTION CLEANING ROD, SMALL ARMS 11686327 (19204)	EA
53	F	5310-00-809-4061	WASHER PLAIN MS 27183-15 (19207)	HD
54	C	7920-00-205-1711	WIPING RAG 30-C 50 lb (22.68 kg) BUNDLE A-A-531 (58536)	LB

END OF WORK PACKAGE

**MAINTAINER
TOOL IDENTIFICATION LIST**

TOOL IDENTIFICATION INTRODUCTION

Scope

This work package lists common tools and supplements and special tools/fixtures needed to maintain the M16 series Rifle and M4 series Carbine.

Explanation of Columns in the Tool Identification List

Column (1) Item No. This number is assigned to the entry in the list 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., Gauge belt tension).

Column (3) National Stock Number (NSN). This is the National Stock Number (NSN) assigned to the item; use it 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 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, components list, 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	Armament Repair Shop Set	4933-01-619-0916		
2	Caps, Vise Jaw	5120-00-221-1506	01570 (50171)	
3	Case, Bore Gauge	4933-01-035-5607	12006359 (19204)	
4	Die Set, Metal Stamping	5110-00-289-0002	9-37912 (53800)	
5	Drill, Electric	5130-00-473-6224	W-D-661 (81348)	
6	File Set, Hand	5110-01-661-6313	61463686839 (44197)	
7	Fixture, Barrel Removal	4933-00-070-9151	11010032 (19204)	

Table 1. Tool Identification List - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER/ (CAGEC)	(5) REFERENCE
8	Fixture, Measuring, Trigger Pull	4933-00-647-3696	7274758 (19200)	
9	Flashlight	6230-00-264-8261	10082473 (A486G)	
10	Gauge, Barrel, Erosion	5220-01-676-3452	13076673 (19200)	
11	Gauge, Firing Pin Protrusion	5220-00-070-7815	7799735 (19204)	
12	Gauge, Headspace	5220-00-070-7814	7799734 (19204)	
13	Gauge, Plug, Plain	5220-01-075-5004	12620101 (19200)	
14	Gauge, Plug, Taper Cylinder	5220-01-043-9473	12006472 (19204)	
15	Gauge, Straightness	5220-00-221-9391	8448202 (19204)	
16	Machine, Key	5315-01-310-0370	12926769 (19200)	
17	Maintenance Kit, Gun		8426685	
18	Pliers, Needle Nose	5120-00-268-3579	10124788 (A486G)	
19	Pliers, Retaining Ring	5120-00-293-0048	0100 (07382)	
20	Reflector Tool Chamber	4933-00-800-7508	8448201 (19204)	
21	Self-igniting Butane Gas Soldering Iron and Hot Air Tool	3439-00-407-0676	WSTA6 (96508)	
22	Socket Head, 1/16 in. Screw Key	5120-00-198-5398	01815 (56232)	
23	Tool Kit, Small Arms	5180-01-506-8287	SC 5180-B71	
24	Torque Wrench, ft-lb	5120-00-640-6364	A-A-2411 (58536)	

Table 1. Tool Identification List - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER/ (CAGEC)	(5) REFERENCE
25	Torque Wrench, in-lb	5120-00-221-7947	A-A-1274 (58536)	
26	Trigger Weights	4933-00-647-3969	7274758	
27	Vise, Machinist's	5120-00-293-1439	01432 (50171)	
28	Wrench, Combination	5120-01-505-1677	12997571 (19200)	
29	Wrench, Spanner	5120-01-324-6631	9390035 (19204)	

END OF WORK PACKAGE

**MAINTAINER
MANDATORY REPLACEMENT PARTS**

Table 1. Mandatory Replacement Parts.

ITEM NO.	PART NUMBER/ (CAGEC)	NATIONAL STOCK NUMBER (NSN)	NOMENCLATURE	QTY
1	8448508 (19204)	5305-00-992-7284	Screw, Carrier Key	2
2	8448697 (19204)	5320-01-063-7635	Rivet, Tubular	1
3	9349065 (19200)	5305-01-134-3622	Screw, Index	1
4	9349128 (19200)	5305-01-147-8585	Screw, Machine, Buttcap	1
5	12973035	5360-01-452-9636	Helical Compression Spring	2
6	12991533 (19200)	5310-01-475-9652	Washer, Recessed	1
7	12996824 (19200)	5305-01-484-7075	Screw, Recoil	1
8	13036743	5305-01-586-6997	Screw, Cap, Hexagon Head	1
9	MS16562-223 (96906)	5315-00-826-3251	Spring Pin	2
10	MS16624-3035 (96906)	5325-01-486-7585	Ring, Retaining, External	1
11	MS35335-61 (80205)	5310-00-527-3634	Washer, Lock, Rifle Grip	1
12	MS39086-93 (80205)	5315-00-690-0544	Spring Pin	2

END OF WORK PACKAGE

**MAINTAINER
CRITICAL SAFETY ITEMS**

INITIAL SETUP:

Not Applicable

Critical Safety Items

There are no critical safety items for the M16 series Rifle or M4 series Carbine.

END OF WORK PACKAGE

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)).	DATE Date form filled
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For each comment, include as applicable: <i>Comment number, work package number or data module code, page number, paragraph number, figure number, table number, recommended change, and reason for change.</i>			
0007-3: Figure 2, Item 9 should show a lock washer. Currently shows a flat washer.			
0018-2: Cleaning and inspection, Step 6, reference to governor support pin (14) is wrong reference. Reference should be changed to (12).			
<h1>SAMPLE</h1>			
TYPED NAME, GRADE/RANK, POSITION TITLE, E-MAIL ADDRESS Your Name	TELEPHONE NUMBER/DSN/ EXTENSION Your phone number	SIGNATURE	

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TM 9-1005-319-23&P	15 APRIL 2019	M4 / M16 Weapon Series Field Manual	
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PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS

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TM 9-1005-319-23&P	15 APRIL 2019	M4 / M16 Weapon Series Field Manual

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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.)

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15 April 2019

By Order of the Secretary of the Army:

MARK A. MILLEY
General, United States Army
Chief of Staff

Official:



KATHLEEN S. MILLER
Administrative Assistant
to the Secretary of the Army
1907353

By Order of the Secretary of the Air Force:

HEATHER WILSON
Secretary of United States
Air Force

DAVID L. GOLDFEIN
General, United States Air Force
Chief of Staff

ROBERT D. MCMURRY JR.
Lt. General, Commander Air Force
Materiel Command

By Order of the Secretary of the Navy:

PETE B. GILL
Principal Acquisition Program
Manager, Small Arms and Combat
Support Naval Sea Systems
Command

DISTRIBUTION:

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THE METRIC SYSTEM AND EQUIVALENTS

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

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

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

