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SW370-A8-TRS-010 REV 04

TECHNICAL MANUAL

TECHNICAL REPAIR STANDARD
FOR

SOF PECULIAR UPPER RECEIVER GROUPS AND MODIFICATIONS TO M4A1 LOWER RECEIVER (PART NUMBER [PN] 12972690)





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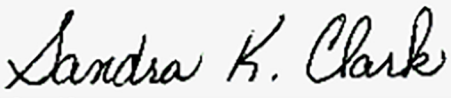
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WEAPON SYSTEMS DIVISION SPECIAL WARFARE AND EXPEDITIONARY SYSTEMS DEPARTMENT NAVAL SURFACE WARFARE CENTER, CRANE DIVISION FEBRUARY 2021



Small Arms Weapon Systems Division Signature Page		
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WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in severe personnel injury or death. Also included are explanations of safety and hazardous materials icons used with Technical Manual (TM).

FIRST AID DATA

For first aid information, refer to NTRP 4-02.1.

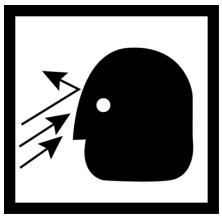
EXPLANATION OF SAFETY WARNING ICONS



HOT AREA - Hand over object radiating heat shows that part is hot and can burn.



WEAPON FIRE - Arrow through body shows that unintentional discharge of weapon could penetrate body, causing injury or death.



FLYING PARTICLES - Arrows bouncing off face show that particles flying through the air will harm face.



FLYING PROJECTILE - Arrow hitting body shows that spring-loaded parts penetrate, causing injury or death.

GENERAL SAFETY WARNINGS DESCRIPTION

WARNING



Burn hazard. Flash suppressors, compensators, and barrels can be hot. Keep hands clear of hot parts and use heat resistant gloves. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Burn hazard. Use heat-resistant gloves or wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Burn hazard. Gas block and setscrews will be hot. Keep hands clear of hot parts and use heat resistant gloves when handling. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

WARNING



Unintentional discharge hazard. Prior to inspection, clear weapon. Do not squeeze trigger until weapon has been cleared. Inspect chamber to ensure it is empty and no ammunition is in position to be loaded. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Unintentional discharge hazard. Weapon may malfunction when failing selector lever test and become unsafe to operate. If weapon fails selector lever test only personnel who are authorized by component shall repair or replace selector lever In Accordance With (IAW) WP 0019. All others notify supervisor to return weapon. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Unintentional discharge hazard. Prior to safety/function check, clear weapon. Do not squeeze trigger until weapon has been cleared. Inspect chamber to ensure it is empty and no ammunition is in position to be loaded. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

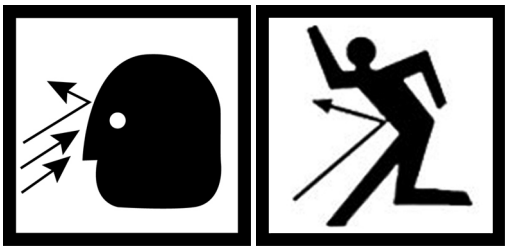
WARNING



Unintentional discharge hazard. Prior to gauging, clear weapon. Do not squeeze trigger until weapon has been cleared. Inspect chamber to ensure it is empty and check that no ammunition is in position to be loaded. Ensure weapon, bolt face, and chamber are clear. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Unintentional discharge hazard. Prior to disassembly; ensure weapon is clear, magazine removed, chamber empty, and bore clear. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

WARNING



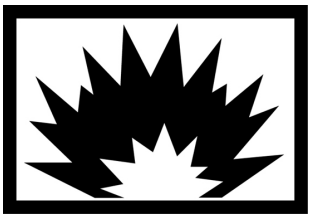
Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

Flying particle and projectile hazard. Some lower receiver parts are under spring tension. Maintain control of springs and detents when removing from lower receiver and during disassembly. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

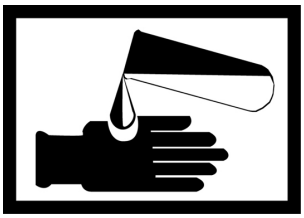
Flying particle and projectile hazard. During and after assembly, some parts will be under spring tension. Maintain control of parts, springs, and detents. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

Flying particle and projectile hazard. Use care when removing and installing spring-loaded parts. Do not interchange bolt assemblies from one weapon to another without headspace check. If injury occurs, immediately seek medical attention. Failure to observe warning could result in personnel injury, death, or equipment damage.

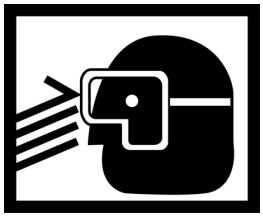
EXPLANATION OF HAZARDOUS MATERIALS ICONS



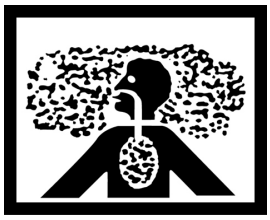
EXPLOSION - Rapidly expanding symbol shows that the material may explode when subjected to high temperatures, sources of ignition, or high pressure.



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



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



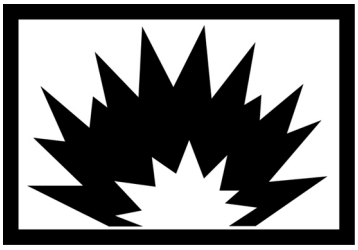
VAPOR - Human figure in cloud shows that material vapors present a danger to life or health.



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

HAZARDOUS MATERIALS DESCRIPTION

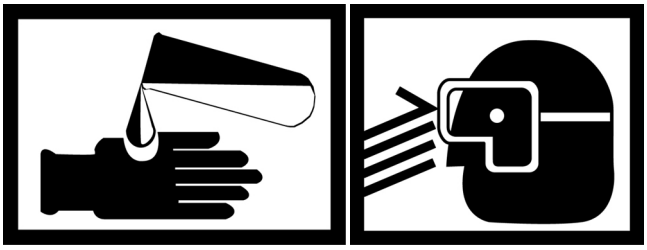
WARNING



Explosion hazard. Rocksett shall be applied only to threads of barrel, flash hider, and/or compensator. Rocksett entering weapon bore could cause a bore obstruction and increase barrel pressure. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment damage.

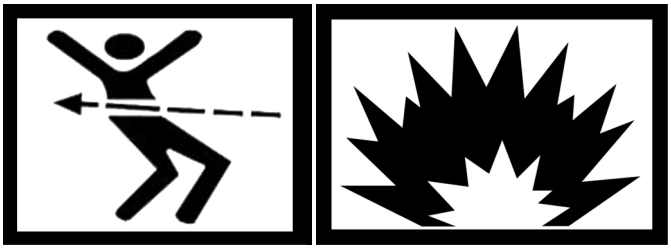
Explosion hazard. Torquing the Family Muzzle Break Suppressor Carbine (FMBS-C) flash hider beyond 30 foot-pounds (ft•lb) could cause a bore constriction to occur. Manufacturer recommended pressures could be exceeded causing bore to explode. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment damage.

WARNING



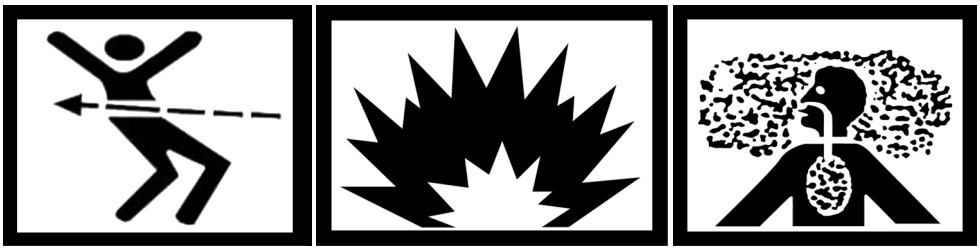
Wear safety glasses and protective gloves. Avoid repeated/prolonged skin contact with hazardous materials. Wash affected areas with soap and water upon completion of task or prior to eating and drinking. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

WARNING



Unintentional discharge hazard. Cam pin must be installed in bolt group. When not installed, rifle can fire and malfunction, creating an explosion. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

WARNING



Weapon firing hazard. Prior to gauging, clear weapon. Inspect chamber to ensure it is empty and no ammunition is in position to be loaded. Do not squeeze trigger until weapon is cleared. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Weapon firing hazard. Failure to comply with gauging requirements could result in weapon firing out of battery of failing to fire when needed. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Unintentional discharge hazard. Prior to maintenance; ensure weapon is clear, magazine removed, chamber empty, and bore clear. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Explosion hazard. Use of grease, oil or other artificial substances shall not be used with sound suppressor internally. Substances other than water could alter path of projectile and foul weapon. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Unintentional discharge hazard. Prior to reassembly; ensure weapon is clear, magazine removed, chamber empty, and bore clear. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

WARNING



Fire, vapor, and chemical hazard. Cleaning agents and oil shall be removed from suppressor prior to using. Gas, solvent fumes, and blowback could result in danger to personnel. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Vapor hazard. Copper removers present inhalation danger. Use in well ventilated area. Take affected personnel into fresh air. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

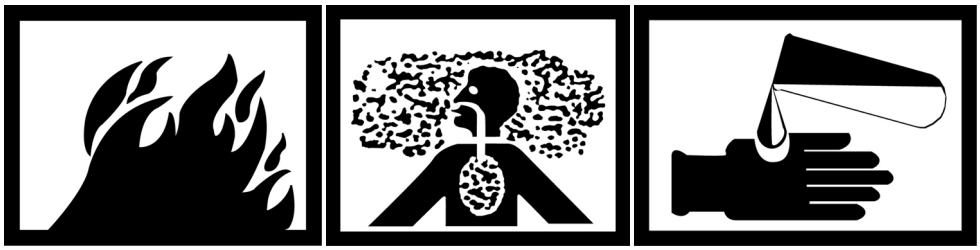
WARNING



Fire hazard. Copper removers are flammable. Keep flame away from copper remover. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Unintentional discharge hazard. Prior to maintenance; ensure weapon is clear, magazine removed, chamber empty, and bore clear. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

WARNING



Fire, vapor, and chemical hazard. Degreaser is flammable, toxic, and a skin irritant. Keep away from flame, use in well ventilated area, and wear protective gloves and face shield. If injury occurs, immediately seek medical attention. Failure to follow this warning could result in personnel injury or death.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: SW370-A8-TRS-010 Rev 04 dated 02 February 2021 supersedes SW370-A8-TRS-010 Rev 03 dated September 2016, including all changes. Zero in the “Change No.” column indicates an original page or work package.

Date of issue for the revised manual is:

Original 02 February 2021

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 42 AND TOTAL NUMBER OF WORK PACKAGES IS 63 CONSISTING OF THE FOLLOWING:

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WEAPON SYSTEMS DIVISION
SPECIAL WARFARE AND EXPEDITIONARY SYSTEMS DEPARTMENT
NAVAL SURFACE WARFARE CENTER, CRANE DIVISION
02 February 2021

TECHNICAL REPAIR STANDARD
FOR

SOF PECULIAR UPPER RECEIVER GROUPS AND MODIFICATIONS TO M4A1 LOWER RECEIVER (PART NUMBER [PN] 12972690)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or Technical Manual Deficiency/Evaluation Report (TMDER), located in the back of this manual directly to: Weapon Systems Division, Naval Surface Warfare Center, Crane Division, Crane, IN 47522-5001. You may also send in your recommended changes via electronic mail or by fax. Our fax number is 812-854-1044. Our email address is smallarms@navy.mil or sofsustainment@navy.mil. You may also submit your recommended changes at the following web site: https://ssavie.sofsa.mil/. A reply will be furnished to you.

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HOW TO USE THIS MANUAL

GENERAL

This Technical Manual (TM) has been prepared and illustrated to provide personnel all information required to support Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG).

1. This TM is organized to help the end user quickly find information. The Table of Contents lists, in the order of presentation, all chapters, work packages, figures, and tables.

2. References are to passages within this manual or to other publications.

3. The List of Abbreviations/Acronyms, located on page 0001-4, includes an alphabetical list of uncommon abbreviations and acronyms used in this TM.

4. Cross-reference indexes list, in National Item Identification Number (NIIN) sequence, all National Stock numbered items appearing in WP 0038 through WP 0059, followed by all Part Numbers (PNs). National Stock Numbers (NSNs) and PNs are cross-referenced to each figure and item number in alphanumeric sequence.

5. Throughout this TM, text is keyed to graphics by use of numbered callouts. When an item is called out, a number in parentheses in the text corresponds with a number on the graphic.

6. Each task begins with an initial setup table. It specifies what is needed to perform the task: tools, materials, parts, personnel, reference material and required drawings, as well as equipment condition and special environmental conditions.

7. Hyperlinks appear throughout this TM when in electronic form, increasing the TM's functionality and effectiveness as well as enhancing the reader's comprehension. Hyperlinks cross-reference encompassed text to one of the following: definition of acronym, figure, table, page, or passage of text (e.g., chapter, work package, paragraph, or step). After clicking a hyperlink, return to the previously viewed page by clicking the **Previous View** button on the Adobe® Acrobat® toolbar. If toolbar does not display this button, select **View**>**Customize Toolbars**>**Toolbar Items**>**Show Page Navigation Tools**>**Previous Page**. **Previous View** button is now available in toolbar.

DEFINITION OF ALERTS THROUGHOUT THIS TM

1. **Warning.** A warning identifies a clear danger for injury or death to the person performing that procedure. A warning also identifies when there is both danger of injury or death to personnel and danger of equipment damage during that procedure.

2. **Caution.** A caution identifies a clear risk of equipment damage if the procedure is not followed correctly.

3. **Note.** A note is used to highlight essential information, conditions, or statements or to convey important instructional data to the user.

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION

OPERATOR MAINTENANCE

GENERAL INFORMATION

SCOPE

This Technical Manual (TM) contains equipment description and data, theory of operation, and operator troubleshooting and maintenance procedures, as well as a Repair Parts and Special Tools List (RPSTL) for the Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG).

- Type of manual: Technical Repair Standard (TRS).
- Model number and equipment name: SOF Peculiar Upper Receiver Groups and Modifications to M4A1 Lower Receiver (Part Number [PN] 12972690).
- Purpose of equipment: To provide personnel offensive/defensive capabilities for engagement of targets in the field.

MAINTENANCE FORMS, RECORDS, AND REPORTS

All errors, omissions, discrepancies, and suggestions for improvement to this TM must be submitted using a NAVSEA 4160/1 Technical Manual Deficiency/Evaluation Report (TMDER). You can send your TMDER via websites: https://nsdsa.dc3n.navy.mil/tmder/reporting.aspx or https://mercury.tdmis.navy.mil. You can also obtain a digital TMDER and submit via email to smallarms@navy.mil or sofsustainment@navy.mil. A digital copy of TMDER can be obtained from ssavie.sofsa.mil, https://navalforms.documentservices.dla.mil, https:// nsda.dc3n.navymil/refdocs/forms.aspx or by emailing smallarms@navy.mil or sofsustainment@navy.mil.

Weapon's Logbook shall be updated at end of the day, including maintenance performed on weapon.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your Carbine, 5.56mm, M4A1 with URG needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Let us know what is lacking in design or performance. EIRs shall be submitted using Standard Form (SF) 368 (PQDR) to smallarms@navy.mil or sofsustainment@navy.mil. A digital copy of the PQDR can be obtained from https://ssavie.sofsa.mil/.

CORROSION PREVENTION AND CONTROL (CPC)

CPC of materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. 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 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. Nine forms of corrosion are used to evaluate the deterioration of metals are defined below. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects 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 anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on 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 metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but moving fluid washes away 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's 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 the information is identified as CPC problem. SF 368, PQDR should be submitted to the address specified: Commander, Code JXN, Building 3422, Naval Surface Warfare Center (NSWC), 300 Highway 361, Crane, Indiana 47522-5001 or email to: smallarms@navy.mil or sofsustainment@navy.mil.

DESTRUCTION OF NAVY MATERIEL TO PREVENT ENEMY USE

Procedure for Destruction of Equipment to Prevent Enemy Use will be found in TM 750-244-7.

PREPARATION FOR STORAGE

Procedure for preparation for storage will be found in WP 0027.

PREPARATION FOR SHIPMENT

Procedure for preparation for shipment will be found in WP 0028.

TRANSPORTABILITY GUIDANCE

Transportability guidance will be found in WP 0029.

NOMENCLATURE CROSS-REFERENCE LIST

Table 1. Nomenclature Cross-Reference List.

OFFICIAL NAME	COMMON NAME
10.3 Barrel Assembly	10.3 Light Barrel
14.5 Barrel	14.5 Light Barrel
14.5 M4A1 Heavy Barrel	14.5 M4A1 Heavy Barrel
Nylon/Brass Hammer	Armorer's Hammer
Barrel Plain Nut	URG-I Barrel Nut
Bent Tube	Gas tube
Compression Helical Spring	Buffer Retainer
Compression Helical Spring	Forward Assist
Compression Helical Spring	Magazine Catch
Compression Helical Spring	Pivot Pin
Compression Helical Spring	Safety
Gun Charger Handle	Ambidextrous Charging Handle
Gun Gas Cylinder	Gas Block Low Profile
Gun Weapon Modification Kit	URG-I Kit
Headed Grooved Pin	Bolt Cam
Headed Grooved Pin	Pivot Pin
Headless Grooved Pin	Automatic Sear
Headless Grooved Pin	Ejection Port Cover
Headless Grooved Pin	Trigger and Hammer
Lock Washer	Rifle Grip
Lower Extension	Receiver
Lower Receiver Vice Block	Receiver Block
Machine Screw	Rifle Grip
Mounting Bracket	Forward Sling Mount
Parts Kit Fastener	URG-I Handguard Fastener Kit
Plain Cylindrical Plug Gauge	NO-GO Field Service Firing Pin Hole
Reaction Rod	Action Rod
Retaining Ring	Ejection Port Cover
Rifle Barrel	10.3 M4A1 Heavy Barrel
Rifle Grip	Black Plastic
Setscrew	Gas Block Setscrew
Shim Set	Shims and Spacer
Shoulder Gun Stock Butt Plate Assembly	Folding Buttstock Adapter
Small Arms Fire Control Selector	Assembly
Spring Pin	Forward Assist
Spring Pin	Gas Tube
Spring Pin	Trigger Guard pin

Table 1. Nomenclature Cross-Reference List.-Continued.

OFFICIAL NAME	COMMON NAME
Torsion Helical Spring	Ejection Port Cover
Trigger Assembly	Supper Select Fire Trigger
Vise Jaw Caps	Gas Block/Gas tube Assembly Block
Vise Jaw Caps	Receiver to Rail Alignment Fixture
Weapon Mounted Adapter Rail	10.5IN M-LOK Handguard
Weapon Mounted Adapter Rail	M-LOK Quick Disconnect Sling Mount
Weapon Mounted Rail Adapter	13.5IN M-LOK Handguard

LIST OF ABBREVIATIONS/ACRONYMS

3M	Maintenance and Material Management
ºC	degrees Celsius
ºF	degrees Fahrenheit
BFA	Blank Firing Adapter
BII	Basic Issue Item
BIS	Back-Up Iron Sight
BOI	Basis of Issue
BSD	Blank Safety Devise
CAGEC	Commercial and Government Entity Code
CCW	counterclockwise
CHF	Cold Hammer Forged
CLP	Cleaner, Lubricant and Preservative
cm	centimeter
CPC	Corrosion Prevention and Controls
CTA	Common Table of Allowances
CW	clockwise
DoD	Department of Defense
EIR	Equipment Improvement Recommendation
EMP	Electromagnetic Pulse
FMBS-C	Family Muzzle Break Suppressor Carbine
fps	feet per second
ft•lb	foot-pound
HCI	Hardness Critical Item
IAW	In Accordance With
in-lb	inch-pound
ISE	In-Service Engineer

kg	kilogram
lb	pound
LCSM	Lifecycle Sustainment Manager
LRG	Lower Receiver Group
M-LOK	Modular Lock
m	meter
mm	millimeter
NATO	North Atlantic Treaty Organization
NHA	Next Higher Assembly
NIIN	National Item Identification Number
NSN	National Stock Number
NSWC	Naval Surface Warfare Center
PMCS	Preventive Maintenance Checks and Services
PN	Part Number
PQDR	Product Quality Deficiency Report
psi	pounds per square inch
P-MAG	Polymer-Magazine
RIS	Rail Interface System
rpm	rounds per minute
RPSTL	Repair Parts and Special Tools List
SF	Standard Form
SMR	Source, Maintenance, and Recoverability
SOCOM	Special Operations Command
SRA	Specialized Repair Activity
SSF	Super Select Fire
TM	Technical Manual
TMDE	Test, Measurement, & Diagnostic Equipment
TMDER	Technical Manual Deficiency/Evaluation Report
TRS	Technical Repair Standard
U/I	Unit of Issue
U/M	Unit of Measure
URG	Upper Receiver Group
URG-I	Upper Receiver Group Improved
UOC	Usable On Code
WP	Work Package

QUALITY OF MATERIAL

Material used for replacement, repair, or modification must meet the requirements of TRS. If quality of material requirements are not stated in this TRS, material must meet requirements of drawings, standards, specification, or approved engineering change proposals applicable to subject equipment.

SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TEST, MEASUREMENT, & DIAGNOSTIC EQUIPMENT (TMDE), AND SUPPORT EQUIPMENT

Common Tools and Equipment

For authorized common tools and equipment, refer to WP 0062.

Special Tools, TMDE, and Support Equipment

RPSTL information is located in Chapter 6 of this TRS.

Repair Parts

Repair parts are listed and illustrated in the parts information Work Packages (WPs) beginning with WP 0038 of this TRS.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

EQUIPMENT DESCRIPTION AND DATA FOR RAIL INTERFACE SYSTEM (RIS) II UPPER RECEIVER GROUP (URG)

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Characteristics, Capabilities, and Features

The RIS II URGs utilize the standard 10.3-inch and 14.5-inch M4A1 barrel, and a carbine length gas system. The RIS II URGs utilize a standard M1913 quad-rail.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

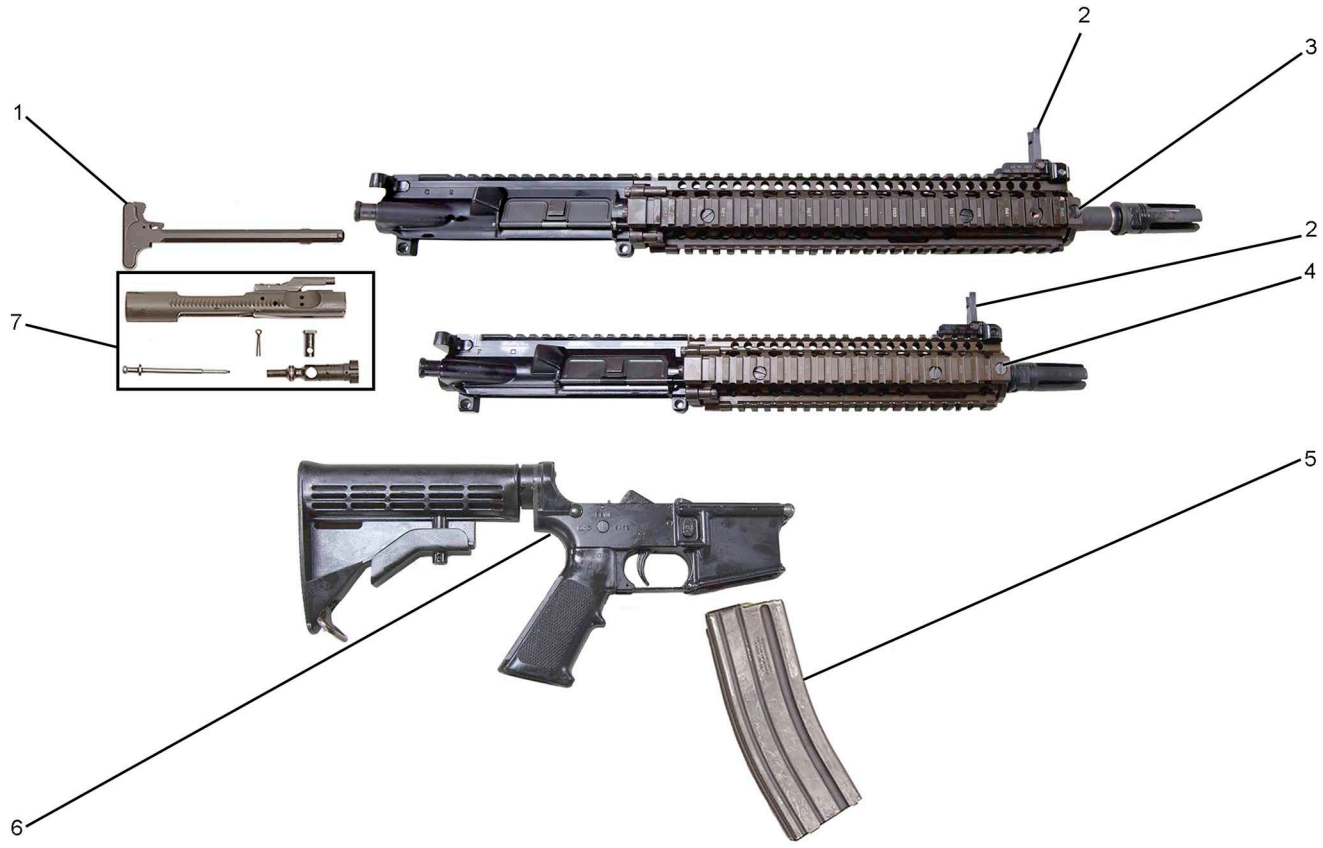


Figure 1. Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG) Major Components.

Table 1. Carbine, 5.56mm, M4A1 with URG Major Components.

ITEM NO.	NOMENCLATURE	DESCRIPTION
1	Charging Handle Assembly	Provides ability to retract bolt carrier assembly to charge weapon. Charging handle locks in FORWARD position during firing.
2	BIS[1]	Front BIS is adjustable for elevation. BISs are used in conjunction to align weapon to target and adjust for trajectory of ammunition.

Table 1. Carbine, 5.56mm, M4A1 with URG Major Components.-Continued.

ITEM NO.	NOMENCLATURE	DESCRIPTION
3 and 4	Upper Receiver and Barrel Assembly 14.5 URG RIS[2] II and 10.3 URG RIS II	Provides support for bolt carrier assembly. Barrel houses cartridge for firing and directs projectile.
5	Cartridge Magazine	Holds cartridges ready for feeding and provides a guide for positioning cartridges for stripping. Provides quick reload capabilities for sustained firing.
6	Lower Receiver and Buttstock Assembly	Provides firing control for weapon. Provides optional storage tubes for basic cleaning materials and/or batteries.
7	Bolt and Bolt Carrier Assembly	Provides feeding, chambering, locking, firing, extraction, and ejection of cartridges using the drive springs and projectile propelling gases for power.
	Sling Mounts (not shown)	Provides attachment point for sling to be clipped to weapon.

1. Acronym BIS stands for Back-Up Iron Sight.
2. Acronym RIS stands for Rail Interface System.



Legend.
1. Compensator
2. Front BIS
3. Bolt Catch
4. Adjustable Buttstock Assembly
5. Lock/Release Lever
6. Selector Lever

Figure 2. Carbine, 5.56mm, M4A1 with RIS II URG Left Side.



Legend.

1. Forward Assist Assembly
2. Charging Handle
3. Ejection Port Cover
4. URG RIS II
5. Front BIS
6. Magazine
7. Magazine Release
8. Trigger

Figure 3. Carbine, 5.56mm, M4A1 with RIS II URG Right Side.

EQUIPMENT DATA

Table 2. Equipment Data.

DESCRIPTION	MEASUREMENT
Caliber	
10.3 URG RIS II	5.56 mm[1] NATO[2]
14.5 URG RIS II	5.56 mm NATO
Weight	
Weapon System RIS II URG 10.3 (without magazine)	5.8 lb[3] (2.6 kg[4])
Weapon System RIS II URG 14.5 (without magazine)	6.8 lb (3.1 kg)
Weapon System Suppressed RIS II URG 10.3 (without magazine)	6.9 lb (3.1 kg)
Weapon System Suppressed RIS II URG 14.5 (without magazine)	7.9 lb (3.6 kg)

Table 2. Equipment Data.-Continued.

DESCRIPTION	MEASUREMENT
Weapon System with LAW Folding Stock RIS II URG 10.3 (without magazine)	6.4 lb (2.9 kg)
Weapon System with LAW Folding Stock RIS II URG 14.5 (without magazine)	7.5 lb (3.4 kg)
Folding Stock RIS II URG 10.3 (without magazine)	7.6 lb (3.4 kg)
Folding Stock RIS II URG 14.5 (without magazine)	8.6 lb (3.9 kg)
Length	
Overall Weapon Stock Extended 10.3 URG	30.25 inches (76.8 cm[5])
Overall Weapon Stock Extended 14.5 URG	34.5 inches (100.97 cm)
Overall Weapon System with Stock Collapsed 10.3 URG	27.0 inches (68.5 cm)
Overall Weapon System with Stock Collapsed 14.5 URG	31.1 inches (79.0 cm)
Weapon System Suppressed Extended RIS II URG 10.3	34.2 inches (86.9 cm)
Weapon System Suppressed Extended RIS II URG 14.5	38.0 inches (96.5 cm)
Weapon System Suppressed Collapsed RIS II URG 10.3	31.0 inches (78.7 cm)
Weapon System Suppressed Collapsed RIS II URG 14.5	34.7 inches (88.2 cm)
Weapon System with LAW Folding Stock RIS II URG 10.3 (STORED Position)	21.1 inches (78.7 cm)
Weapon System with LAW Folding Stock RIS II URG 14.5 (STORED Position)	25.5 inches (64.7 cm)
Weapon System Suppressed with LAW Folding Stock RIS II URG 10.3 (STORED Position)	24.7 inches (62.8 cm)
Weapon System Suppressed with LAW Folding Stock RIS II URG 14.5 (STORED Position)	29.1 inches (73.9 cm)
M855A1 Ammunition	
Muzzle Velocity for 14.5 URG	2,960 fps[6]
Chamber Pressure for 14.5 URG	66,000 psi[7]
Cyclic Rate of Fire for 14.5 URG	700-900 rpm[8] (approximate)
Fire Selector for 10.3 URG	SAFE, SEMI, AUTO
Fire Selector for 14.5 URG	SAFE, SEMI, AUTO

Table 2. Equipment Data.-Continued.

DESCRIPTION	MEASUREMENT
MK318 Ammunition	
Muzzle Velocity for 10.3 URG	2,475 fps
Muzzle Velocity for 14.5 URG	2,750 fps
Chamber Pressure for 10.3 URG	56,000 psi
Chamber Pressure for 14.5 URG	56,000 psi
Cyclic Rate of Fire for 10.3 URG	700-970 rpm (approximate)
Cyclic Rate of Fire for 14.5 URG	700-900 rpm (approximate)
Fire Selector for 10.3 URG	SAFE, SEMI, AUTO
Fire Selector for 14.5 URG	SAFE, SEMI, AUTO
Maximum Effective Rates of Fire	
Semi	45 rpm (10.3 URG) 45 rpm (14.5 URG)
Auto	90 rpm (10.3 URG) 90 rpm (14.5 URG)
Sustained Rate of Fire	12/15 rpm (10.3 URG) 12/15 rpm (14.5 URG)
Maximum Effective Range	
Individual /Point Targets for MK262 Ammunition	275 m[9] (10.3 URG) 400 m (14.5 URG)
Individual/Point Targets for MK318 Ammunition	400 m (10.3 URG) 400 m (14.5 URG)
Area Targets	600 m (10.3 URG) 600 m (14.5 URG)
Maximum Range	3,600 m (10.3 URG) 3,600 m (14.5 URG)

1. Abbreviation mm stands for millimeter.
2. Acronym NATO stands for North Atlantic Treaty Organization.
3. Abbreviation lb stands for pound.
4. Abbreviation kg stands for kilogram.
5. Abbreviation cm stands for centimeter.
6. Acronym fps stands for feet per second.
7. Acronym psi stands for pound per square inch.
8. Acronym rpm stands for rounds per minute.
9. Abbreviation m stands for meter.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

EQUIPMENT DESCRIPTION AND DATA FOR UPPER RECEIVER GROUP IMPROVED (URG-I)

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Characteristics, Capabilities, and Features

The 11.5 URG-I utilizes a 11.5-inch Cold Hammer Forged (CHF) barrel and a carbine length gas system. The 14.5 URG-I utilizes a 14.5-inch CHF barrel and a mid-length gas system. Both systems utilize a free-floating Modular Lock (M-LOK) compatible handguard.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS



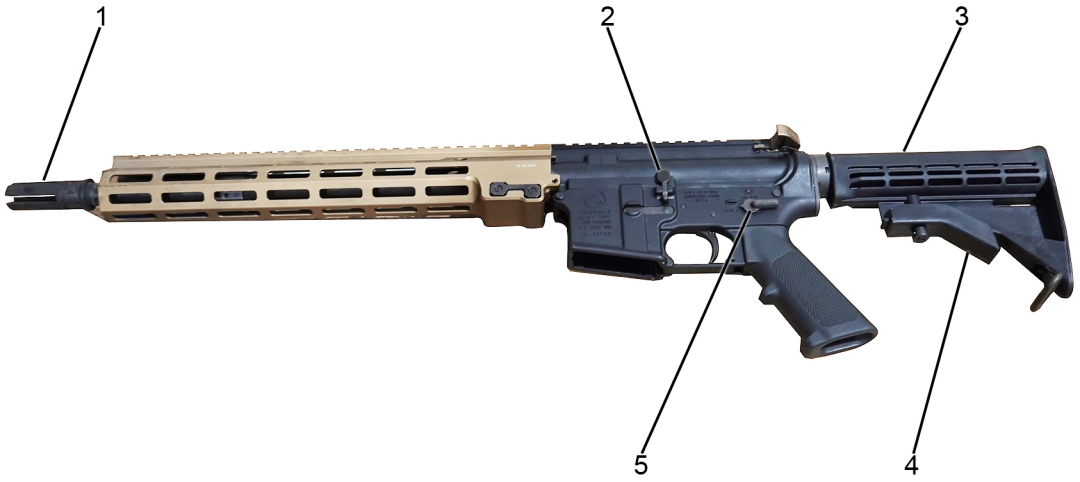
Figure 1. Carbine, 5.56mm, M4A1 with URG-I Major Components.

Table 1. Carbine, 5.56mm, M4A1 with URG-I Major Components.

ITEM NO.	NOMENCLATURE	DESCRIPTION
1 and 2	Upper Receiver and Barrel Assembly 14.5 URG-I 11.5 URG-I	Provides support for bolt carrier assembly. Barrel houses cartridge for firing and directs projectile.
3	Lower Receiver and Buttstock Assembly	Provides firing control for weapon. Provides optional storage tubes for basic cleaning materials and/or batteries.
4	Cartridge Magazine	Holds cartridges ready for feeding and provides a guide for positioning cartridges for stripping. Provides quick reload capabilities for sustained firing.

Table 1. Carbine, 5.56mm, M4A1 with URG-I Major Components.-Continued.

ITEM NO.	NOMENCLATURE	DESCRIPTION
5	Bolt and Bolt Carrier Assembly	Provides feeding, chambering, locking, firing, extraction, and ejection of cartridges using the drive springs and projectile propelling gases for power.
6	Charging Handle Assembly	Provides ability to retract bolt carrier assembly to charge weapon. Charging handle locks in FORWARD position during firing.
	Sling Mounts (not shown)	Provides attachment point for sling to be clipped to weapon.



Legend.
1. Flash Hider
2. Bolt Catch
3. Adjustable Buttstock Assembly
4. Lock/Release Lever
5. Selector Lever

Figure 2. Carbine, 5.56mm, M4A1 with URG-I Left Side.



Legend.
1. Forward Assist Assembly
2. Charging Handle
3. Ejection Port Cover
4. URG-I
5. Magazine
6. Magazine Release
7. Trigger

Figure 3. Carbine, 5.56mm, M4A1 with URG-I Right Side.

EQUIPMENT DATA

Table 2. Equipment Data.

DESCRIPTION	MEASUREMENT
Caliber	
11.5 URG-I	5.56 mm[1] NATO[2]
14.5 URG-I	5.56 mm NATO
Weight	
Weapon System URG-I 11.5 (without magazine)	5.9 lb[3] (2.68 kg[4])
Weapon System URG-I 14.5 (without magazine)	6.3 lb (2.8 kg)
Weapon System Suppressed URG-I 11.5 (without magazine)	7.0 lb (3.17 kg)
Weapon System Suppressed URG-I 14.5 (without magazine)	7.3 lb (3.3 kg)
Weapon System with LAW Folding Stock URG-I 11.5 (without magazine)	6.5 lb (2.9 kg)

Table 2. Equipment Data.-Continued.

DESCRIPTION	MEASUREMENT
Weapon System with LAW Folding Stock URG-I 14.5 (without magazine)	6.8 lb (3.1 kg)
Weapon System Suppressed w/LAW Folding Stock URG-I 11.5 (without magazine)	7.5 lb (3.4 kg)
Weapon System Suppressed w/LAW Folding Stock URG-I 14.5 (without magazine)	7.9 lb (3.6 kg)
Folding Stock URG-I 11.5 (without magazine)	7.5 lb (3.4 kg)
Folding Stock URG-I 14.5 (without magazine)	7.9 lb (3.6 kg)
Length	
Overall Weapon Stock Extended 11.5 URG-I	31.5 inches (80.0 cm[5])
Overall Weapon Stock Extended 14.5 URG-I	34.5 inches (87.6 cm)
Overall Weapon Stock Collapsed 11.5 URG-I	28.2 inches (71.7 cm)
Overall Weapon Stock Collapsed 14.5 URG-I	31.1 inches (79.0 cm)
Weapon System Suppressed Extended URG-I 11.5	35.1 inches (89.2 cm)
Weapon System Suppressed Extended URG-I 14.5	38.1 inches (96.8 cm)
Weapon System Suppressed Collapsed URG-I 11.5	32.0 inches (81.2 cm)
Weapon System Suppressed Collapsed URG-I 14.5	34.7 inches (88.2 cm)
Weapon System with LAW Folding Stock URG-I 11.5 (STORED Position)	22.5 inches (57.1 cm)
Weapon System with LAW Folding Stock URG-I 14.5 (STORED Position)	25.5 inches (64.7 cm)
Weapon System Suppressed with LAW Folding Stock URG-I 11.5 (STORED Position)	26.5 inches (67.3 cm)
Weapon System Suppressed with LAW Folding Stock URG-I 14.5 (STORED Position)	29.2 inches (74.2 cm)
M855A1 Ammunition	
Muzzle Velocity for 11.5 URG-I	2,730 fps[6]
Muzzle Velocity for 14.5 URG-I	2,960 fps
Chamber Pressure for 11.5 URG-I at 70 ºF[7]	66,000 psi[8]
Chamber Pressure for 14.5 URG-I at 70 ºF	66,000 psi
Cyclic Rate of Fire for 11.5 URG-I	700-850 rpm[9] (approximate)
Cyclic Rate of Fire for 14.5 URG-I	700-900 rpm (approximate)
Fire Selector for 11.5 URG-I	SAFE, SEMI, AUTO
Fire Selector for 14.5 URG-I	SAFE, SEMI, AUTO

Table 2. Equipment Data.-Continued.

DESCRIPTION	MEASUREMENT
Maximum Effective Rates of Fire	
Semi	45 rpm (11.5 URG-I) 45 rpm (14.5 URG-I)
Auto	90 rpm (11.5 URG-I) 90 rpm (14.5 URG-I)
Sustained Rate of Fire	12/15 rpm (11.5 URG-I) 12/15 rpm (14.5 URG-I)
Maximum Effective Range	
Individual /Point Targets for M855A1 Ammunition	275 m[10] (11.5 URG-I) 400 m (14.5 URG-I)
Area Targets	600 m (11.5 URG-I) 600 m (14.5 URG-I)
Maximum Range	3,600 m (11.5 URG-I) 3,600 m (14.5 URG-I)

1. Abbreviation mm stands for millimeter.
2. Acronym NATO stands for North Atlantic Treaty Organization.
3. Abbreviation lb stands for pound.
4. Abbreviation kg stands for kilogram.
5. Abbreviation cm stands for centimeter.
6. Acronym fps stands for feet per second.
7. Acronym ºF stands for degrees Fahrenheit.
8. Acronym psi stands for pound per square inch.
9. Acronym rpm stands for rounds per minute.
10. Abbreviation m stands for meter.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

CYCLE OF OPERATION

FEEDING

Begins as bolt carrier returns forward and front of bolt contacts next round in magazine. Once round is pushed far enough forward, cartridge rim will clear magazine feed lips and move toward chamber.

CHAMBERING

Starts as tip of projectile clears barrel extension and enters rear of chamber.

LOCKING

Occurs as continued momentum of bolt carrier moving forward causes extractor to snap over cartridge rim and bolt cam pin rotates in bolt carrier slot forcing locking lugs to rotate in barrel extension.

FIRING

Begins with weapon in semi-automatic or full automatic mode (hammer cocked). Pulling trigger will cause sear to disengage hammer notch allowing hammer to fall. Hammer will strike firing pin, which is turn strikes primer discharging powder. As bullet passes gas port in barrel, expanding gases go up through gas port into gas tube. Gas tube directs gas rearward into bolt carrier key and causes bolt carrier to mover rearward.

UNLOCKING

Occurs as bolt carrier moves to rear and bolt cam pin follows patch of cam track located in bolt carrier. This movement causes bolt assembly to rotate until bolt locking lugs are no longer aligned behind barrel extension locking lugs.

EXTRACTING

Occurs after unlocking when bolt carrier pulls bolt to rear and extractor pulls cartridge case from chamber at high speed. During this cycle, cartridge cause in held to bolt assembly by extractor.

EJECTING

Occurs during rearward movement of bolt carrier group, which allows nose of cartridge case to clear front edge of ejection port. Action of ejector and spring clears cartridge case from receiver.

COCKING

Begins while ejection is occurring. Bolt carrier moves to rear, contacting and pushing hammer down and to rear until fully compressed. As bolt moves all the way to rear, buffer spring is fully compressed, which forces bolt carrier back to front.

END OF WORK PACKAGE

CHAPTER 2

TROUBLESHOOTING PROCEDURES

FIELD TROUBLESHOOTING

TROUBLESHOOTING INDEX

SCOPE

Chapter 2 contains troubleshooting information for locating and correcting most operating troubles occurring in Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG). Each malfunction of part, assembly, or subassembly is followed by list of corrective actions to perform. Perform corrective actions in order listed.

This Technical Manual (TM) cannot list all possible malfunctions that may occur nor all corrective actions. For malfunctions not listed, contact Naval Surface Warfare Center (NSWC) Crane via email at smallarms@navy.mil or sofsustainment@navy.mil.

Knowing and understanding Carbine, 5.56mm, M4A1 with URG cycle of operation (WP 0004) will help identify specific problems. Cycle can start or stop at any point in its continuum (feeding, cocking, chambering, etc.).

SYMPTOM/MALFUNCTION INDEX

Table 1. Symptom/Malfunction Index.

SYMPTOM/MALFUNCTION INDEX	PROCEDURE PAGE
Bolt assembly fails to lock to rear after firing last round.	page 0006-17
Bolt catch and/or bolt catch spring are broken.	page 0006-17
Bolt catch has restricted movement.	page 0006-17
Faulty magazine.	page 0006-17
Carbine cannot be zeroed.	page 0006-13
Barrel assembly is defective.	page 0006-13
Front sight is defective.	page 0006-14
Rail assembly is out of alignment with upper receiver cartridge on upper receiver.	page 0006-14
Rear sight assembly is defective.	page 0006-14
Failure of magazine to lock in carbine.	page 0006-2
Magazine catch button is not properly installed.	page 0006-2
Magazine catch is dirty or corroded.	page 0006-2
Magazine catch is worn or broken.	page 0006-2
Magazine catch spring is defective.	page 0006-2
Failure to chamber.	page 0006-4
Buffer spring is weak or broken; free length is 10 1/16 inches (25.56 centimeter [cm]) minimum to 11 1/4 inches (28.58 cm) maximum.	page 0006-4
Failure to cock.	page 0006-11
Trigger, disconnector, hammer, or auto sear are worn, broken, or have missing parts.	page 0006-11
Failure to cycle with selector set on auto.	page 0006-15
Selector level is faulty.	page 0006-15
Failure to eject.	page 0006-10
Cartridge ejector is broken.	page 0006-10
Cartridge ejector is stuck in bolt body.	page 0006-10
Ejector spring is weak or broken.	page 0006-11
Short recoil.	page 0006-11

Table 1. Symptom/Malfunction Index.-Continued.

SYMPTOM/MALFUNCTION INDEX	PROCEDURE PAGE
Failure to extract.	page 0006-9
Badly pitted chamber.	page 0006-10
Extractor pin, cartridge extractor, extractor spring assembly, or O-Ring are defective.	page 0006-9
Failure to feed.	page 0006-3
Faulty magazine.	page 0006-3
Magazine catch is defective.	page 0006-3
Magazine catch is out of adjustment (will not retain magazine).	page 0006-3
Magazine catch spring is weak or broken.	page 0006-3
Short recoil.	page 0006-4
Failure to fire.	page 0006-6
Carbon buildup in firing pin recess inside bolt assembly.	page 0006-6
Firing pin is broken or chipped, or firing pin does not meet gauge protrusion requirement.	page 0006-6
Firing pin retaining pin is broken, defective, or missing.	page 0006-7
Selector lever is frozen on SAFE.	page 0006-7
Trigger, disconnector, hammer, auto sear or lower receiver are improperly assembled, worn, broken, or missing parts.	page 0006-6
Failure to lock.	page 0006-4
Bolt cam pin is broken or missing.	page 0006-4
Buffer spring is weak or broken; free length is 10 1/16 inches (25.56 cm) minimum to 11 1/4 inches (28.58 cm) maximum.	page 0006-5
Gas tube is damaged.	page 0006-5
Key and bolt carrier assembly has loose screws.	page 0006-5
Failure to unlock.	page 0006-7
Barrel chamber has burred locking lugs.	page 0006-8
Bolt assembly has burred locking lugs.	page 0006-7
Bolt is cracked.	page 0006-8
Short recoil.	page 0006-8
Fires with selector lever on SAFE or when trigger is released with selector on SEMI.	page 0006-16
Perform function test.	page 0006-16
Firing two rounds with one pull of trigger with selector lever set to SEMI (double-firing).	page 0006-15
Trigger, disconnector, hammer, or auto sear are worn, broken, or have missing parts.	page 0006-15
Hammer pin walks.	page 0006-16
Hammer pin walks or works loose during firing.	page 0006-16
Short recoil.	page 0006-12
Bolt rings are worn, missing, broken, or have improper gap space.	page 0006-12
Buffer spring and receiver extension are unlubricated or dirty.	page 0006-12
Buffer spring is broken or damaged.	page 0006-12
Gas tube is damaged.	page 0006-13
Restriction in bolt carrier key.	page 0006-13

END OF WORK PACKAGE

FIELD TROUBLESHOOTING

TROUBLESHOOTING

INITIAL SETUP:

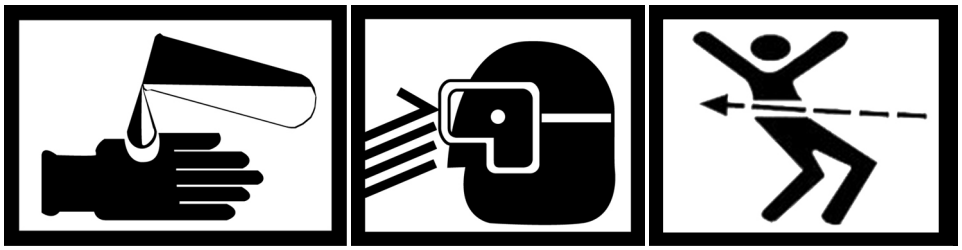
Personnel Required
Qualified Armorer (1)

Equipment Condition
Weapon cleared (WP 0010)
Weapon safe (WP 0011)

References
WP 0012
WP 0013
WP 0015
WP 0016
WP 0017
WP 0018
WP 0019
WP 0021
WP 0023
TM 9-1005-319-10

TROUBLESHOOTING PROCEDURES

WARNING



Wear safety glasses and protective gloves. Avoid repeated/prolonged skin contact with hazardous materials. Wash affected areas with soap and water upon completion of task or prior to eating and drinking. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Unintentional discharge hazard. Prior to inspection, clear weapon. Do not squeeze trigger until weapon has been cleared. Inspect chamber to ensure it is empty and check that no ammunition is in position to be loaded. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

SYMPTOM

Failure of magazine to lock in carbine.

MALFUNCTION

Magazine catch is dirty or corroded.

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch In Accordance With (IAW) WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Magazine catch spring is defective.

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch IAW WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c. Dispose of IAW local procedures. Replace IAW WP 0019, page 0019-31, step 6a through WP 0019, page 0019-32, step d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Magazine catch is worn or broken.

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch IAW WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c. Dispose of IAW local procedures. Replace IAW WP 0019, page 0019-31, step 6a through WP 0019, page 0019-32, step d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Magazine catch button is not properly installed.

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch IAW WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c. Clean and lubricate. Replace IAW WP 0019, page 0019-31, step 6a through WP 0019, page 0019-32, step d.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to feed.

MALFUNCTION

Faulty magazine.

CORRECTIVE ACTION

STEP 1. Replace magazine.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Magazine catch spring is weak or broken.

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch IAW WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c. Dispose of IAW local procedures. Replace IAW WP 0019, page 0019-31, step 6a through WP 0019, page 0019-32, step d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Magazine catch is defective.

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch IAW WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c. Dispose of IAW local procedures. Replace IAW WP 0019, page 0019-31, step 6a through WP 0019, page 0019-32, step d.

STEP 2. Notify Unit Armorer.

NOTE

Ensure magazine latches and falls freely upon depression of magazine release button.

MALFUNCTION

Magazine catch is out of adjustment (will not retain magazine).

CORRECTIVE ACTION

STEP 1. Disassemble magazine catch IAW WP 0019, page 0019-10, step 6a through WP 0019, page 0019-11, step c. Clean and lubricate. Replace IAW WP 0019, page 0019-31, step 6a through WP 0019, page 0019-32, step d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

STEP 1. See Short recoil on page 0006-12.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to chamber.

MALFUNCTION

Buffer spring is weak or broken; free length is 10 1/16 inches (25.56 centimeter [cm]) minimum to 11 1/4 inches (28.58 cm) maximum.

CORRECTIVE ACTION

STEP 1. Remove buffer spring IAW WP 0012, page 0012-7, step 10 through WP 0012, page 0012-8, step 12. Measure and visually inspect spring for damage. Replace WP 0021, page 0021-2, step 2 through WP 0021, page 0021-2, step 4.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to lock.

MALFUNCTION

Bolt cam pin is broken or missing.

CORRECTIVE ACTION

STEP 1. Remove cam pin IAW WP 0012, page 0012-8, step 13a through WP 0012, page 0012-10, step d Dispose of cam pin IAW local procedures. Replace IAW WP 0021, page 0021-3, step 5a through step b.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Key and bolt carrier assembly has loose screws.

CORRECTIVE ACTION

STEP 1. Replace key and bolt carrier assembly. If parts are in short supply, proceed to the appropriate Work Package (WP); WP 0015 for 10.3-inch RIS II URG, WP 0016 for 14.5-inch RIS II URG, WP 0017 for 11.5-inch URG-I, or WP 0018 for 14.5-inch URG-I.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Gas tube is damaged.

NOTE

It is necessary to remove the handguard in order to replace the gas tube, but it is not necessary to replace the barrel unless needs replacement.

Ensure the appropriate length gas tube is utilized when replacing the gas tube.

CORRECTIVE ACTION

STEP 1. Remove 10.3 Rail Interface System (RIS) II Upper Receiver Group (URG) IAW WP 0015, page 0015-10, step 7a through WP 0015, page 0015-11, step c; 14.5 RIS II URG IAW WP 0016, page 0016-23, step 4a through WP 0016, page 0016-23, step d; 11.5 Upper Receiver Group Improved (URG-I) IAW WP 0017, page 0017-8, step 4; 14.5 URG-I IAW WP 0018, page 0018-9, step 3. Replace 10.3 RIS II URG IAW WP 0015, page 0015-23, step 4a through WP 0015, page 0015-23, step 4d; 14.5 RIS II URG IAW WP 0016, page 0016-10, step 7a through WP 0016, page 0016-11, step c; 11.5 URG-I IAW WP 0017, page 0017-19, step 5a through WP 0017, page 0017-19, step 5d; 14.5 URG-I IAW WP 0018, page 0018-20, step 6a through WP 0018, page 0018-20, step 6d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Buffer spring is weak or broken; free length is 10 1/16 inches (25.56 cm) minimum to 11 1/4 inches (28.58 cm) maximum.

CORRECTIVE ACTION

STEP 1. Replace buffer spring IAW WP 0012, page 0012-7, step 10 through WP 0012, page 0012-8, step 12. Measure and visually inspect spring fro damage. Replace buffer spring IAW WP 0021, page 0021-2, step 2 through WP 0021, page 0021-2, step 4.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to fire.

MALFUNCTION

Firing pin is broken or chipped, or firing pin does not meet gauge protrusion requirement.

CORRECTIVE ACTION

STEP 1. Replace firing pin IAW WP 0012, page 0012-8, step 13a through WP 0012, page 0012-10, step d. Replace IAW WP 0021, page 0021-4, step c through page 0021-4, step d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Carbon buildup in firing pin recess inside bolt assembly.

CORRECTIVE ACTION

STEP 1. Remove cartridge extractor and clean recess with pipe cleaner IAW TM 9-1005-319-10.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Trigger, disconnector, hammer, auto sear or lower receiver are improperly assembled, worn, broken, or missing parts.

NOTE

Changing fire control/trigger parts requires that trigger pull must be verified IAW WP 0023. Repair or replacement of automatic sear or selector level shall only be performed by personnel who are authorized by the component IAW WP 0019.

CORRECTIVE ACTION

STEP 1. Remove worn, broken, or missing parts IAW WP 0019, page 0019-15, step 9a through WP 0019, page 0019-18, step 10e. Replace IAW WP 0019, page 0019-21, step 2a through WP 0019, page 0019-25, step 3e.

STEP 2. Remove selector lever IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace IAW WP 0019, page 0019-29, step 4i.

STEP 3. When corrective actions do not correct problem, notify Supervisor to return defective Carbine, 5.56mm M4A1.

STEP 4. Notify Unit Armorer.

MALFUNCTION

Selector lever is frozen on SAFE.

CORRECTIVE ACTION

STEP 1. Replace helical spring and safety detent IAW WP 0019, page 0019-15, step 9a through WP 0019, page 0019-18, step 10e. Replace IAW WP 0019, page 0019-21, step 2a through WP 0019, page 0019-25, step 3e.

STEP 2. Replace worn, broken, or missing parts IAW WP 0019, page 0019-15, step 9a through WP 0019, page 0019-18, step 10e. Replace IAW WP 0019, page 0019-21, step 2a through WP 0019, page 0019-25, step 3e.

STEP 3. Replace selector lever IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace IAW WP 0019, page 0019-25, step 3f through WP 0019, page 0019-29, step 4i.

STEP 4. When corrective actions do not correct problem, notify Supervisor to return defective Carbine, 5.56mm M4A1.

STEP 5. Notify Unit Armorer.

MALFUNCTION

Firing pin retaining pin is broken, defective, or missing.

CORRECTIVE ACTION

STEP 1. Replace firing pin retaining pin IAW WP 0012, page 0012-8, step 13a through WP 0012, page 0012-10, step d. Replace IAW WP 0021, page 0021-4, step 5c through page 0021-4, step d.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to unlock.

MALFUNCTION

Bolt assembly has burred locking lugs.

CORRECTIVE ACTION

STEP 1. Replace bolt assembly.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Barrel chamber has burred locking lugs.

CORRECTIVE ACTION

STEP 1. Remove 10.3 barrel IAW WP 0015, page 0015-12, step 8a through WP 0015, page 0015-13, step e; 14.5 RIS II URG IAW WP 0016, page 0016-12, step 8a through WP 0016, page 0016-12, WP 0016, page 0016-12, step 8c; 11.5 Upper Receiver Group Improved (URG-I) IAW WP 0017, page 0017-7, step 1 and step 2; 14.5 URG-I IAW WP 0018, page 0018-7, step 1 through WP 0018, page 0018-8, step 3. Replace 10.3 RIS II URG IAW WP 0015, page 0015-21, step 3c through WP 0015, page 0015-24, step 4e; 14.5 RIS II URG IAW WP 0016, page 0016-10, step 7a through WP 0016, page 0016-11, step c; 11.5 URG-I IAW WP 0017, page 0017-16, step 1 through WP 0017, page 0017-18, step 4; 14.5 URG-I IAW WP 0018, page 0018-17, step 1 through WP 0018, page 0018-19, step 5.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

STEP 1. See Short recoil on page 0006-11.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Bolt is cracked.

CORRECTIVE ACTION

STEP 1. Inspect for cracks in bolt, bolt lugs, and at edges of cam pin hole. Replace bolt if cracks are present IAW WP 0012, page 0012-8, step 13a through WP 0012, page 0012-10, step d. Replace bolt IAW WP 0021, page 0021-3, step 5a through WP 0021, page 0021-4, step d.

STEP 2. Notify Unit Armorer.

WARNING



Weapon firing hazard. Failure to comply with gauging requirements could result in weapon firing out of battery or failing to fire when needed. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

NOTE

If bolt is replaced headspace must be verified IAW WP 0023.

SYMPTOM

Failure to extract.

MALFUNCTION

Extractor pin, cartridge extractor, extractor spring assembly, or O-Ring are defective.

NOTE

Do not remove rubber insert from extractor spring assembly.

CORRECTIVE ACTION

STEP 1. Identify defective component. Remove extractor assembly IAW WP 0013, page 0013-1, step 1 and step 2. Replace defective component IAW WP 0013, page 0013-6, step 1 and step 2.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Badly pitted chamber.

CORRECTIVE ACTION

STEP 1. Inspect for badly pitted chamber with borescope if possible.

STEP 2. Remove 10.3 barrel IAW WP 0015, page 0015-12, step 8a through WP 0015, page 0015-13, step e; 14.5 RIS II URG IAW WP 0016, page 0016-12, step 8a through WP 0016, page 0016-12, WP 0016, page 0016-12, step 8c; 11.5 Upper Receiver Group Improved (URG-I) IAW WP 0017, page 0017-7, step 1 and step 2; 14.5 URG-I IAW WP 0018, page 0018-7, step 1 through WP 0018, page 0018-8, step 3. Replace 10.3 RIS II URG IAW WP 0015, page 0015-21, step 3c through WP 0015, page 0015-24, step 4e; 14.5 RIS II URG IAW WP 0016, page 0016-10, step 7a through WP 0016, page 0016-11, step c; 11.5 URG-I IAW WP 0017, page 0017-16, step 1 through WP 0017, page 0017-18, step 4; 14.5 URG-I IAW WP 0018, page 0018-17, step 1 through WP 0018, page 0018-19, step 5.

STEP 3. Notify Unit Armorer.

SYMPTOM

Failure to eject.

MALFUNCTION

Cartridge ejector is broken.

CORRECTIVE ACTION

STEP 1. Identify defect component. Remove ejector assembly IAW WP 0013, page 0013-3, step 3 and WP 0013, page 0013-4, step 4. Replace defective component IAW WP 0013, page 0013-6, step 1 and step 2.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Cartridge ejector is stuck in bolt body.

CORRECTIVE ACTION

STEP 1. Disassemble and clean IAW TM 9-1005-319-10.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Ejector spring is weak or broken.

CORRECTIVE ACTION

STEP 1. Identify defect component. Remove ejector assembly IAW WP 0013, page 0013-3, step 3 and WP 0013, page 0013-4, step 4. Replace defective component IAW WP 0013, page 0013-6, step 1 and step 2.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Short recoil.

CORRECTIVE ACTION

STEP 1. See Short recoil on page 0006-11.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to cock.

MALFUNCTION

Trigger, disconnector, hammer, or auto sear are worn, broken, or have missing parts.

NOTE

Replacing trigger components require trigger pull verification.

CORRECTIVE ACTION

STEP 1. Remove worn, broken, or missing parts IAW WP 0019, page 0019-15, step 9a through WP 0019, page 0019-18, step 10e. Replace IAW WP 0019, page 0019-21, step 2 through WP 0019, page 0019-25, step 3e.

STEP 2. When corrective actions do not correct problem, notify Supervisor to return defective Carbine, 5.56mm, M4A1.

STEP 3. Notify Unit Armorer.

SYMPTOM

Short recoil.

MALFUNCTION

Buffer spring is broken or damaged.

CORRECTIVE ACTION

STEP 1. Remove buffer spring IAW WP 0012, page 0012-5, step 10 through WP 0012, page 0012-6, step 12. measure and visually inspect spring fro damage. Replace IAW WP 0021, page 0021-2, step 2 through WP 0021, page 0021-2, step 4.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Buffer spring and receiver extension are unlubricated or dirty.

CORRECTIVE ACTION

STEP 1. Clean and lubricate IAW TM 9-1005-319-0.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Bolt rings are worn, missing, broken, or have improper gap space.

CORRECTIVE ACTION

STEP 1. Stagger bolt ring gaps approximately 1/3 turn apart. Identify defective component. Remove bolt rings IAW WP 0013, page 0013-3, step 3 through WP 0013, page 0013-4, step 4. Replace IAW WP 0013, page 0013-6, step 1 through WP 0013, page 0013-6, step 2.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Gas tube is damaged.

CORRECTIVE ACTION

STEP 1. Remove 10.3 Rail Interface System (RIS) II Upper Receiver Group (URG) IAW WP 0015, page 0015-10, step 7a through WP 0015, page 0015-11, step c; 14.5 RIS II URG IAW WP 0016, page 0016-23, step 4a through WP 0016, page 0016-23, step d; 11.5 Upper Receiver Group Improved (URG-I) IAW WP 0017, page 0017-8, step 4; 14.5 URG-I IAW WP 0018, page 0018-9, step 3. Replace 10.3 RIS II URG IAW WP 0015, page 0015-23, step 4a through WP 0015, page 0015-23, step 4d; 14.5 RIS II URG IAW WP 0016, page 0016-10, step 7a through WP 0016, page 0016-11, step c; 11.5 URG-I IAW WP 0017, page 0017-19, step 5a through WP 0017, page 0017-19, step 5d; 14.5 URG-I IAW WP 0018, page 0018-20, step 6a through WP 0018, page 0018-20, step 6d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Restriction in bolt carrier key.

CORRECTIVE ACTION

STEP 1. Clean bolt carrier key with Cleaner, Lubricant and Preservative (CLP) and pipe cleaner.

STEP 2. Notify Unit Armorer.

SYMPTOM

Carbine cannot be zeroed.

MALFUNCTION

Barrel assembly is defective.

NOTE

Replacing barrel requires headspace verification.

CORRECTIVE ACTION

STEP 1. Remove 10.3 barrel IAW WP 0015, page 0015-12, step 8a through WP 0015, page 0015-13, step e; 14.5 RIS II URG IAW WP 0016, page 0016-12, step 8a through WP 0016, page 0016-12, WP 0016, page 0016-12, step 8c; 11.5 Upper Receiver Group Improved (URG-I) IAW WP 0017, page 0017-7, step 1 and step 2; 14.5 URG-I IAW WP 0018, page 0018-7, step 1 through WP 0018, page 0018-8, step 3. Replace 10.3 RIS II URG IAW WP 0015, page 0015-21, step 3c through WP 0015, page 0015-24, step 4e; 14.5 RIS II URG IAW WP 0016, page 0016-10, step 7a through WP 0016, page 0016-11, step c; 11.5 URG-I IAW WP 0017, page 0017-16, step 1 through WP 0017, page 0017-18, step 4; 14.5 URG-I IAW WP 0018, page 0018-17, step 1 through WP 0018, page 0018-19, step 5.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Rail assembly is out of alignment with upper receiver cartridge on upper receiver.

CORRECTIVE ACTION

STEP 1. Align rail with receiver IAW WP 0015, page 0015-12, step 8a through WP 0015, page 0015-13, step e; 14.5 RIS II URG IAW WP 0016, page 0016-12, step 8a through WP 0016, page 0016-13, step e; 11.5 URG-I IAW WP 0017, page 0017-7, step 1 and step 2; 14.5 URG-I IAW WP 0018, page 0018-7, step 1 through WP 0018, page 0018-8, step 3. Replace 10.3 RIS II URG IAW WP 0015, page 0015-21, step 3c through WP 0015, page 0015-25, step f; 14.5 RIS II URG IAW WP 0016, page 0016-21, step 3a through WP 0016, page 0016-22, step f; 11.5 URG-I IAW WP 0017, page 0017-16, step 1 and step 2d; 14.5 URG-I IAW WP 0018, page 0018-17, step 1 through WP 0018, page 0018-20, step 6d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Front sight is defective.

CORRECTIVE ACTION

STEP 1. Replace front sight assembly.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Rear sight assembly is defective.

CORRECTIVE ACTION

STEP 1. Replace rear sight assembly.

STEP 2. Notify Unit Armorer.

SYMPTOM

Failure to cycle with selector set on auto.

MALFUNCTION

Selector level is faulty.

CORRECTIVE ACTION

STEP 1. Remove selector lever IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace selector lever IAW WP 0019, page 0019-25, step f through WP 0019, page 0019-29, step i.

STEP 2. When corrective actions do not correct problem, notify Supervisor to return defective Carbine, 5.56mm, M4A1.

STEP 3. Notify Unit Armorer.

SYMPTOM

Firing two rounds with one pull of trigger with selector lever set to SEMI (double-firing).

MALFUNCTION

Trigger, disconnector, hammer, or auto sear are worn, broken, or have missing parts.

CORRECTIVE ACTION

STEP 1. Remove trigger, disconnector, hammer, or auto sear IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace selector lever IAW WP 0019, page 0019-25, step f through WP 0019, page 0019-29, step i.

STEP 2. When corrective actions do not correct problem, notify Supervisor to return defective Carbine, 5.56mm, M4A1.

STEP 3. Notify Unit Armorer.

SYMPTOM

Fires with selector lever on SAFE or when trigger is released with selector on SEMI.

MALFUNCTION

Perform function test.

CORRECTIVE ACTION

STEP 1. Remove trigger, disconnector, hammer, auto sear, or fire control selector lever IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace selector lever IAW WP 0019, page 0019-25, step f through WP 0019, page 0019-29, step i.

STEP 2. If any part of function test fails, notify Supervisor to return defective Carbine, 5.56mm, M4A1.

STEP 3. Notify Unit Armorer.

SYMPTOM

Hammer pin walks.

MALFUNCTION

Hammer pin walks or works loose during firing.

CORRECTIVE ACTION

STEP 1. Remove hammer pin IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace selector lever IAW WP 0019, page 0019-25, step f through WP 0019, page 0019-29, step i.

STEP 2. Verify j-spring is in hammer, if not present, remove hammer IAW WP 0019, page 0019-12, step 8a through WP 0019, page 0019-14, step f. Replace hammer IAW WP 0019, page 0019-25, step f through WP 0019, page 0019-29, step i.

STEP 3. If any part of function test fails, notify Supervisor to return defective Carbine, 5.56mm, M4A1.

STEP 4. Notify Unit Armorer.

SYMPTOM

Bolt assembly fails to lock to rear after firing last round.

MALFUNCTION

Faulty magazine.

CORRECTIVE ACTION

STEP 1. Replace magazine.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Bolt catch and/or bolt catch spring are broken.

CORRECTIVE ACTION

STEP 1. Remove bolt catch or bolt catch spring IAW WP 0019, page 0019-8, step 5a through WP 0019, page 0019-9, step c. Replace bot catch or bolt catch spring IAW WP 0019, page 0019-30, step 5a, through WP 0019, page 0019-31, step d.

STEP 2. Notify Unit Armorer.

MALFUNCTION

Bolt catch has restricted movement.

CORRECTIVE ACTION

STEP 1. Disassemble and remove bolt catch IAW WP 0019, page 0019-8, step 5a through WP 0019, page 0019-9, step c. Replace bolt catch IAW WP 0019, page 0019-30, step 5a, through WP 0019, page 0019-31, step d.

STEP 2. Notify Unit Armorer.

END OF WORK PACKAGE

CHAPTER 3

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) MAINTENANCE INSTRUCTIONS

FIELD MAINTENANCE

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

PMCS DATA

PMCS includes inspecting, cleaning, and performing checkout procedures. These checks and services are to be performed by trained and authorized personnel.

- Clean and lubricate In Accordance With (IAW) TM 9-1005-319-10.
- Perform PMCS IAW WP 0008 as required to keep weapon combat ready.
- If weapon has not been used for 90 days, perform PMCS IAW WP 0008.
- Perform PMCS both before and after weapon use to ensure operational readiness can be maintained.
- Always perform PMCS in the same order.
- If a problem is beyond echelon of repair, report problem to Unit Armorer.

EXPLANATION OF COLUMNS

Item Number Column

Naval Special Warfare Unit's shall utilize Armory Management Database to record maintenance actions.

Interval Column

This column describes when and how often checks are to be made. Pay close attention to all cautions and warnings. Checks and services given in WP 0008 are for normal operation. Extreme weather conditions, periods of high use, or combat conditions may dictate that PMCS is performed more often than is mentioned in WP 0008.

- Quarterly: Perform PMCS every 3 months.

Item to Be Checked or Serviced Column

This column lists specific items to be checked or serviced.

Procedure Column

This column provides brief description of procedure by which check or service is to be performed, as well as any information required to accomplish each check or service. This may include lubrication, appropriate tolerances, adjustment limits, and instrument gauge readings. Whenever replacement or repair is recommended, maintenance task will be included or applicable maintenance instruction Work Package (WP) may be referenced.

Equipment Not Ready/Available If Column

This column contains criteria that causes equipment to be classified as not ready/not available because of inability to perform its primary mission. If severity of problem is such that operator thinks weapon cannot be operated, operator should contact his/her supervisor.

LUBRICATION INSTRUCTIONS

Intervals are based on normal operation. Intervals may be more frequent if lubricants are contaminated or if weapon is being operated in adverse operating conditions. (Refer to TM 9-1005-319-10) Intervals may also be more frequent if weapon is operating under longer-than-usual operating hours. Interval may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

Items with a daily interval must be lubricated on a daily basis but only prior to first mission of day.

CORROSION PREVENTION AND CONTROL (CPC) REQUIREMENTS AND MAINTENANCE INSTRUCTIONS

Refer to WP 0001's, paragraph Corrosion Prevention and Control (CPC), for definitions of the nine forms of corrosion used to evaluate the deterioration of metals. These definitions shall be used when evaluating and documenting corrosion.

Inspect weapon components for signs of rust and corrosion. For items that are not ready/available resulting from one (or more) form of corrosion being present, it shall be recorded as a corrosion failure in the inspection record and the appropriate corrosion code (170) shall be used when requesting/performing maintenance activities.

Notify Field Maintenance for corrective action.

END OF WORK PACKAGE

FIELD MAINTENANCE

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Personnel Required
Qualified Armorer (1)

References
WP 0012
WP 0013
WP 0014
WP 0015
WP 0019
TM 9-1005-319-10

Equipment Condition
Weapon clear (WP 00010)
Weapon safe (WP 0011)
Weapon fieldstripped (WP 0012)

PREVENTIVE MAINTENANCE CHECKS

Table 1. PMCS for Carbine, 5.56mm, M4A1.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
1	Quarterly	Magazine, Magazine Housing, Feed Lips, Magazine Spring, and Magazine Follower	1. Inspect magazine for binding during operation of magazine follower. 2. Inspect magazine housing for bulges, dents, or damaged feed lips. 3. Inspect magazine spring and magazine follower for kinks or damage.	1. Magazine does not function properly. 2. Magazine housing has bulges, dents, or feed lips are damaged. 3. Magazine spring and magazine follower has kinks or is damaged.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
WARNING  Unintentional discharge hazard. Weapon may malfunction when failing selector lever test and become unsafe to operate. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.				
2	Quarterly	Charging Handle Assembly and Selector Lever	1. Pull charging handle (Figure 1, Item 1) to rear. Ensure chamber is clear and release charging handle. Do no squeeze trigger. Ensure charging handle locks in FORWARD position.	1. Charging handle does not function properly.



Figure 1. Charging Handle.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
2-cont.	Quarterly	Charging Handle Assembly and Selector Lever	2. Place selector lever (Figure 2, Item 3) on SAFE (Figure 2, Item 1). Squeeze trigger. Hammer should not fall. 3. Place selector lever (Figure 2, Item 3) on SEMI (Figure 2, Item 2). Squeeze trigger. Hammer should fall. 4. Hold trigger to rear, cycle bolt, and slowly release trigger, until trigger is fully forward. Click should be heard. Hammer should not fall. 5. Repeat above SEMI test five times.	2. Selector lever does not function properly. 3. Hammer does not fall. 4. Hammer does not fall. 5. N/A



Figure 2. Selector Lever SAFE and SEMI.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
NOTE Automatic sear should release hammer while holding trigger to rear.				
2-cont	Quarterly	Charging Handle Assembly and Selector Lever	6. With hammer in FORWARD position, attempt to place selector lever on SAFE. Selector should not on SAFE. Repair IAW[1] WP 0019.	6. Charging handle does not function properly.
WARNING  Damage may occur to takedown pin or pivot pin when using excessive force. Use caution when disengaging pins. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.				
3	Quarterly	Upper Receiver and Barrel Assembly	1. Disengage takedown pin and pivot pin from left to right side of lower receiver. Remove URG[2] from LRG[3]. 2. Ensure compensator has no movement. Ensure no movement of barrel is evident. For personnel who are authorized by component to remove/ replace barrels IAW WP 0015, WP 0016, and WP 0017. For all others, replace URG. 3. Inspect forward assist front and rear BIS[4] for damage.	1. N/A 2. Compensator or barrel assembly are loose. 3. Forward assist or BIS's are damaged.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
3-cont.	Quarterly	Upper Receiver and Barrel Assembly	4. Push forward assist inward several times to check for skipping of ratcheting in forward assist pawl. If skipping occurs, replace forward assist IAW WP 0015, WP 0016, and WP 0017. 5. Check charging handle and ejection port cover for defects and proper function. Replace components as required IAW WP 0015. 6. Check front sight post and detent for damage and corrosion. Check detent and spring for movement. Clean and lubricate IAW TM 9-1005-319-10. 7. Hold barrel 40° angle (muzzle down). Pull charging handle rearward. Push charging handle, bolt and bolt carrier assembly into upper receiver and slide back and forth. If gas tube hits carrier key or binds in carrier key, replace gas tube or key and bolt carrier assembly IAW to WP 0015.	4. Forward assist does not function properly. 5. Ejector port cover is missing or has no spring tension. 6. Front sight is damaged or does not rotate. 7. Fails function test and cannot be corrected.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
4	Quarterly	Key and Bolt Carrier Assembly and Bolt Assembly	1. Remove and disassemble. Inspect bolt assembly for cracks, especially in area of bolt cam pin hole. Check for cracks on locking lugs, pits or chipped bolt face, and enlongated firing pin hole. If damaged, replace IAW WP 0013.	1. Bolt assembly is damaged.
			2. Check for worn or missing bolt rings. Check for proper staggering of bolt ring gaps. Insert bolt assembly into key and bolt carrier assembly.	2. Bolt assembly rings are missing or damaged.
			3. Ensure bolt assembly and key and bolt carrier assembly have been properly cleaned and lubricated. With bolt assembly installed in key and bolt carrier assembly, fully extend bolt assembly from key and bolt carrier assembly. Place bolt and key and bolt carrier assembly face down on flat surface. Allow bolt and key and bolt carrier assembly to stand freely. With hand, tap surface. Key and bolt carrier assembly should not descent onto bolt assembly. Replace bolt rings if key and bolt carrier assembly slides down bolt.	3. Key and bolt carrier assembly falls onto bolt assembly.
			4. Check for broken or missing firing retaining pin and bolt cam pin, replace if missing or damaged.	4. Bolt assembly is damaged.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
4-cont	Quarterly	Key and Bolt Carrier Assembly and Bolt Assembly	5. Check cartridge extractor, extractor spring assembly, cartridge ejector, O-ring, and ejector spring for dirt and serviceability. If dirty; clean, lubricate, and assemble. If unserviceable; replace damaged and worn parts IAW WP 0013.	5. Extractor and/or ejector missing, damaged, or not functioning properly.
			6. Check bolt carrier assembly and carrier key for damage and looseness. If damaged or loose, repair or replace IAW WP 0013.	6. Key and bolt carrier assembly loose or damaged.
			7. If carrier key is dented, replace IAW WP 0014.	7. Carrier key is dented.
			8. Check firing pin for chips or breaks. If damaged, replace IAW WP 0013.	8. Firing pin is damaged.
5	Quarterly	Lower Receiver and Buttstock Assembly	1. Remove buffer assembly and buffer spring. Check buffer face assembly for cracks or damage. Ensure buffer has H2 marking. If buffer assembly is damaged, replace IAW WP 0012.	1. Buffer assembly or buffer spring is damaged or missing.
			2. Check buffer spring for kinks and free length. Free length should be 10 1/16 inches (25.56 cm^5) minimum to 11 1/4 inches (28.58 cm) maximum. Do not attempt to adjust spring length. If buffer spring is kinked or does not meet free length requirements, replace.	2. Buffer spring does not fall within length requirements.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
5-cont	Quarterly	Lower Receiver and Buttstock Assembly	3. Lubricate helical compression spring and buffer retaining shoulder pin (Figure 3, Item 2), place one drop of lubricant on buffer retaining pin. Allow lubricant to work around helical compression spring and buffer retaining shoulder pin. 4. Check buttstock assembly (Figure 3, Item 1) components for damage.	3. Buffer retaining shoulder pin does not hold buffer in position. 4. Buttstock assembly is damaged.



Figure 3. Buttstock Assembly.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
5-cont	Quarterly	Lower Receiver and Buttstock Assembly	3. Lubricate helical compression spring and buffer retaining shoulder pin, place one drop of lubricant on buffer retaining pin. Allow lubricant to work around helical compression spring and buffer retaining shoulder pin. 4. Check buttstock assembly components for damage. 5. Extend buttstock assembly (Figure 4, Item 1). 6. Grasp lock release lever (Figure 4, Item 3) and pull downward. Slide buttstock assembly to rear to separate buttstock assembly from lower receiver extension (Figure 4, Item 6). 7. Clean and lubricate takedown pin (Figure 4, Item 4) IAW TM 9-1005-319-10.	

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
5-cont	Quarterly	Lower Receiver and Buttstock Assembly	8. Clean buttstock assembly inside and out. Check lock release lever fro free movement. Check for cracks, dents, and damage to buttstock assembly. If buttstock assembly is damaged or lock release lever does not move freely, replace IAW WP 0019.	



Figure 4. Detent and Spring.

Table 1. PMCS for Carbine, 5.56mm, M4A1.-Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF
5-cont.	Quarterly	Lower Receiver and Buttstock Assembly	9. Inspect magazine release button (Figure 5, Item 1) and bolt catch (Figure 5, Item 2) for function and spring tension. 10. Inspect magazine well (Figure 5, Item 3) for dents or damage.	9. Magazine release button or bolt catch do not function properly. 10. Magazine well damaged.



Figure 5. Buttstock Assembly.

1. Acronym IAW stands for In Accordance With.
2. Acronym URG stands for Upper Receiver Group.
3. Acronym LRG stands for Lower Receiver Group.
4. Acronym BIS stands for Back-Up Iron Sight.
5. Abbreviation cm stands for centimeter.

END OF WORK PACKAGE

CHAPTER 4

MAINTENANCE INSTRUCTIONS

FIELD MAINTENANCE

SERVICE UPON RECEIPT

INITIAL SETUP:

Personnel Required
Qualified Armorer (1)

References
WP 0012
WP 0021
WP 0022
TM 9-1005-319-10

SERVICE UPON RECEIPT OF MATERIAL

Checking Unpacked Equipment

1. Inspect equipment for damage sustained during shipment. Report damaged equipment on Standard Form (SF) 368 Product Quality Deficiency Report (PQDR).
2. Check equipment against TM 9-1005-319-10 to ensure shipment is complete. Report all discrepancies on SF 368 PQDR.
3. Check for equipment modifications.

Processing Unpacked Equipment

1. Fieldstrip weapon and inspect for missing parts In Accordance With (IAW) WP 0012.
2. Clean and lubricate IAW TM 9-1005-319-10.
3. Assemble from fieldstrip IAW WP 0021.
4. Perform safety/function check IAW WP 0022.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

CLEARING PROCEDURE

INITIAL SETUP:

Personnel Required	Equipment Condition
Operator or Qualified Armorer (1)	Complete weapon (WP 0021)

CLEARING PROCEDURE

1. Point weapon in safe direction.
2. Attempt to place selector lever on SAFE.
3. Remove magazine from weapon.
4. Pull charging handle to rear. Using bolt catch, lock bolt to rear.
5. Place selector lever on SAFE.
6. Inspect chamber and magazine well to ensure weapon is clear.
7. Press top tang of bolt catch, releasing bolt.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

SAFETY CHECK

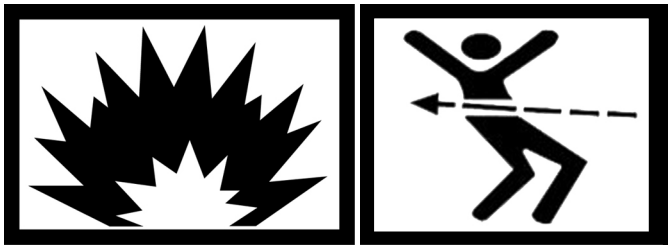
INITIAL SETUP:

Personnel Required	Equipment Condition
Operator or Qualified Armorer (1)	Complete weapon (WP 0021)

SAFETY CHECK

Carry out the following procedures in order to ensure Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG) can be manipulated, stored, and/or transported without any risk.

WARNING



Before starting safety check, clear weapon. Do not pull trigger until weapon has been cleared. Inspect chamber to ensure it is empty, and ensure no ammunition is in position to be introduced. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, damage or destruction of material or equipment.

1. Point weapon in safe direction, attempt to place selector lever on SAFE. If weapon is not cocked, lever cannot be placed on SAFE.
2. If magazine is present, remove magazine by depressing magazine catch button and pulling magazine downward.
3. To lock bolt to rear, pull charging handle rearward and hold. Press bottom of bolt catch and allow bolt to move forward until it engages bolt catch. Return charging handle to full FORWARD position and place selector lever on SAFE. Check receiver and chamber to ensure these areas contain no ammunition.
4. With selector lever placed on SAFE, allow bolt to go forward by pressing upper portion of bolt catch.
5. Pull trigger; hammer should not fall.
6. Place selector lever on SEMI.
7. Pull trigger and hold to rear; hammer should fall. Do not release trigger.
8. Holding trigger to rear, cycle bolt and slowly release trigger; an audible click should be heard. Pull trigger. Hammer should fall.
9. Pull charging handle to rear, charging weapon. Place selector lever on AUTO. Pull trigger; hammer should fall.

10. Using charging handle, cycle bolt three times while holding trigger to rear; hammer must fall with each cycle of bolt.

11. Release trigger; click should not be heard.

12. Attempt to pull trigger again, in order to verify hammer has already fallen.

13. Using charging handle, cycle bolt and place selector lever on SAFE.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

FIELDSTRIP FOR UPPER RECEIVER GROUP (URG) RAIL INTERFACE SYSTEM (RIS) II AND UPPER RECEIVER GROUP IMPROVED (URG-I)

INITIAL SETUP:

Tools
1/8-inch Punch (WP 0062, Item 10)
Needle Nose Pliers (WP 0062, Item 8)

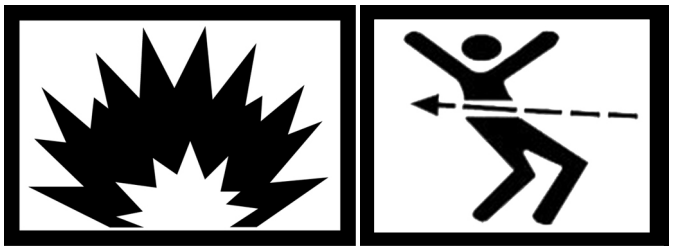
Materials
Eye Protection (WP 0061, Item 19)

Personnel Required
Operator or Qualified Armorer (1)

Equipment Condition
Weapon clear (WP 00010)
Weapon safe (WP 0011)

FIELDSTRIP

WARNING



Before fieldstripping weapon, do not pull trigger until weapon has been cleared. Inspect chamber to ensure it is empty, and no ammunition is in position to be introduced. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, damage or destruction of material or equipment.

NOTE

The below procedures apply to both the Upper Receiver Group (URG) Rail Interface System (RIS) II and the Upper Receiver Group Improved (URG-I) variants.

1. Remove sling (Figure 1).



Figure 1. Removing Sling.

2. On left rear side of lower receiver, push takedown pin inward (Figure 2). From right side of receiver, pull takedown pin until it stops.



Figure 2. Pivoting Upper Receiver from Lower Receiver.

3. Pivot upper receiver from lower receiver (Figure 3).



Figure 3. Pulling Charging Handle to Rear.

4. Hold upper receiver horizontal and pull charging handle approximately three inches to rear (Figure 3).

5. Remove bolt carrier assembly. Pull key and bolt carrier assembly to rear and remove from upper receiver (Figure 4).



Figure 4. Removing Bolt Carrier and Key Assembly.

6. Pull charging handle to rear and allow it to pass through disassembly slots in upper receiver. Remove charging handle (Figure 5).



Figure 5. Removing Charging Handle.

7. While squeezing upper and lower receiver together, push front pivot pin inward on left side. Pull front pivot pin from right side until it stops (Figure 6).



Figure 6. Disengaging Receiver Pivot Pin.

8. Separate upper and lower receivers (Figure 7).



Figure 7. Separating Upper and Lower Receivers.

9. Ensure hammer is cocked.

10. Push buffer inward slightly. Using 1/8-inch pin punch, push down on buffer retainer and spring (Figure 8).



Figure 8. Pushing Buffer Inward.

11. Ease buffer assembly and buffer spring from lower receiver extension while holding hammer down (Figure 9).



Figure 9. Removing Buffer and Buffer Spring.

12. Separate buffer spring from buffer assembly (Figure 10).



Figure 10. Separating Buffer Spring from Buffer Assembly.

13. Disassemble carrier and bolt.

    a. To remove firing pin retaining pin, hold bolt carrier assembly with bolt pointed down. Pull firing pin retaining pin from recess (Figure 11).



Figure 11. Removing Firing Pin Retaining Pin.

b. Cover open end of receiver with palm of hand and point bolt upwards. Firing pin should fall into palm of hand (Figure 12).



Figure 12. Allowing Firing Pin to Drop.

c. Push bolt assembly into bolt carrier assembly until it locks. Rotate cam pin 1/4 of a turn and remove cam pin from bolt carrier assembly (Figure 13).



Figure 13. Removing Cam Pin from Bolt Carrier.

d. Pull bolt from key and bolt carrier assembly (Figure 14).

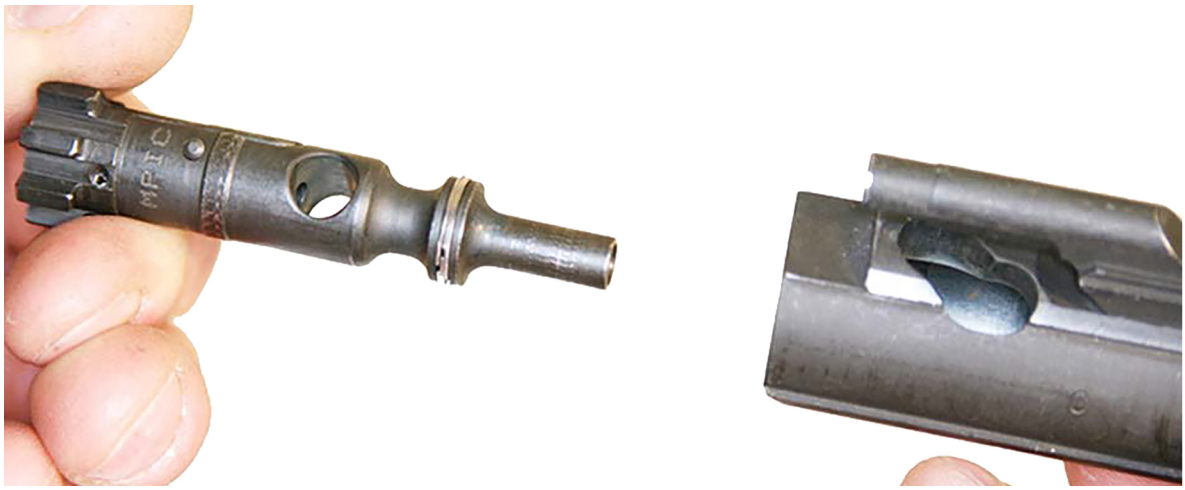


Figure 14. Removing Bolt from Key and Bolt Carrier Assembly.

NOTE

Fieldstrip is now complete (Figure 15).



Figure 15. Complete Fieldstrip.

END OF WORK PACKAGE

FIELD MAINTENANCE

BOLT ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools
1/16-inch Drive Pin Punch (WP 0062, Item 10)
Ball Peen Hammer (WP 0062, Item 2)
Scribe (WP 0062, Item 19)
Flat-Tip Jeweler's Screwdriver (WP 0062, Item 18)

Special Tools
Armorer's Block (WP 0057, Item 9)

Materials
Dummy/Spent Cartridge (WP 0061, Item 16)

Personnel Required
Qualified Armorer (1)

Equipment Condition
Weapon fieldstripped (WP 0012)

DISASSEMBLY

NOTE

Do not separate cartridge extractor and extractor spring assembly unless replacement of one or both is required.

1. With thumb, compress extractor and using 1/16-inch drive pin punch, push extractor pin out. Remove cartridge extractor and extractor spring as assembly (Figure 1).



Figure 1. Removing Cartridge Extractor and Extractor Spring.

NOTE

Do not disassemble rubber insert from extractor spring assembly.

2. Remove O-ring. Twist extractor spring assembly clockwise (CW) and remove from cartridge extractor (Figure 2).

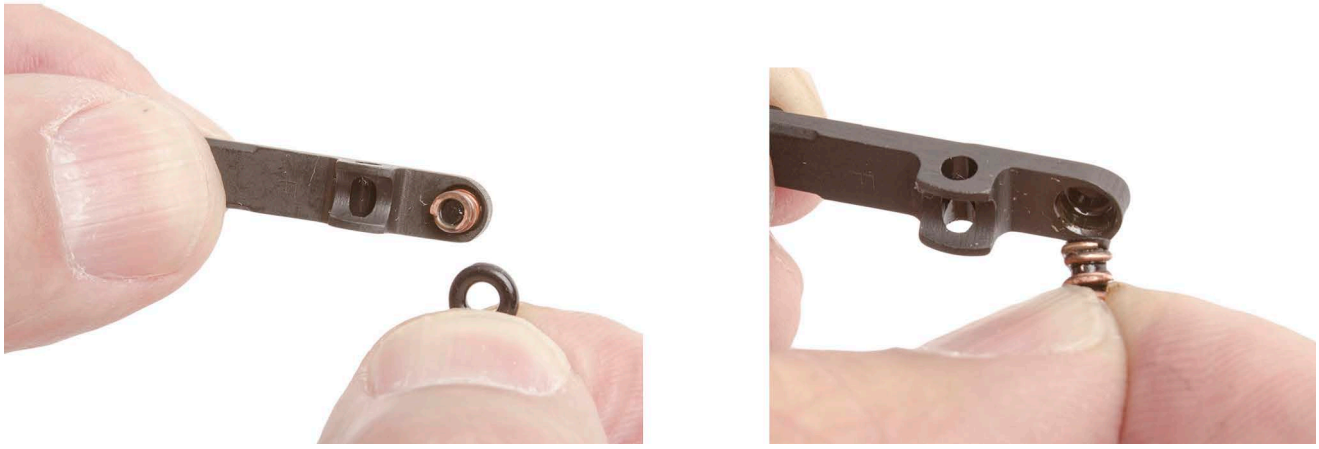
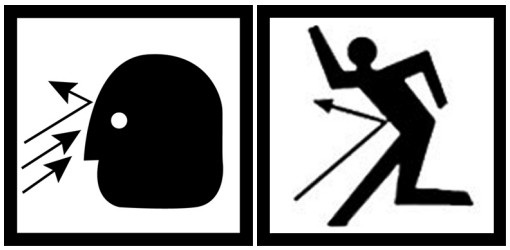


Figure 2. Removing Extractor Spring Assembly.

WARNING



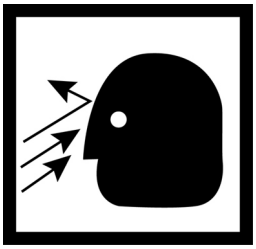
Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

3. Place bolt body on armorer's block. Using 1/16-inch drive pin punch and ball peen hammer, remove spring pin. Leave punch in place (Figure 3).



Figure 3. Removing Spring Pin.

WARNING



Cartridge ejector and ejector spring are under tension. Maintain control of ejector and spring to prevent loss. If injury occurs, immediately seek medical attention. Failure to observe this caution could result in personnel injury or equipment damage.

4. Turn bolt face towards work surface and remove punch. Catch cartridge ejector and ejector spring (Figure 4).



Figure 4. Removing Cartridge Ejector and Ejector Spring.

NOTE

Do not remove bolt rings unless they fail bolt suspension test.

5. Using small flat-tip jeweler's screwdriver or scribe, remove three bolt rings from bolt and discard bolt rings (Figure 5).



Figure 5. Removing Three Bolt Rings from Bolt.

END OF TASK

INSPECTION

1. Inspect bolt rings for damage.

2. Inspect cartridge extractor, extractor spring assembly, and extractor pin for cracks, breaks, chips, and other damage. Pay close attention to cartridge extractor lip. If damaged, replace.

3. Inspect cartridge ejector and ejector spring for cracks, breaks, and chips. When damaged, replace.

4. Inspect bolt for pits, burrs, and wear as follows:

    a. Bolts with clusters of pits and touching or tightly grouped pits covering area measuring 1/8 inch across will be rejected and replaced.

    b. Bolts containing individual pits or scattered pattern, will not be caused for rejection.

    c. Bolts containing pits extending into firing pin hole, will not be rejected unless firing pin hole gauging check determines excessive wear.

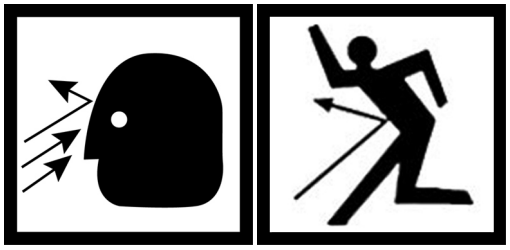
    d. Rings on bolt face (machine tool marks), are not cause for rejection.

5. Inspect bolt for cracks in locking lugs and bolt cam pin hole area. Pay close attention to area where locking lugs meet body. Replace bolt assembly if bolt is defective.

END OF TASK

ASSEMBLY

WARNING



Flying particle and projectile hazard. Use care when removing and installing spring-loaded parts. Do not interchange bolt assemblies from one weapon to another without headspace check. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment damage.

1. Insert large end of extractor spring assembly into cartridge extractor and seat by pushing and turning counterclockwise (CCW). Insert O-ring over extractor spring assembly (Figure 6).



Figure 6. Assembling Extractor Spring Assembly.

2. Position cartridge extractor onto bolt body.

3. Compress extractor assembly to align holes. Install extractor pin, ensure extractor pin is below flush on both sides of bolt assembly (Figure 7).

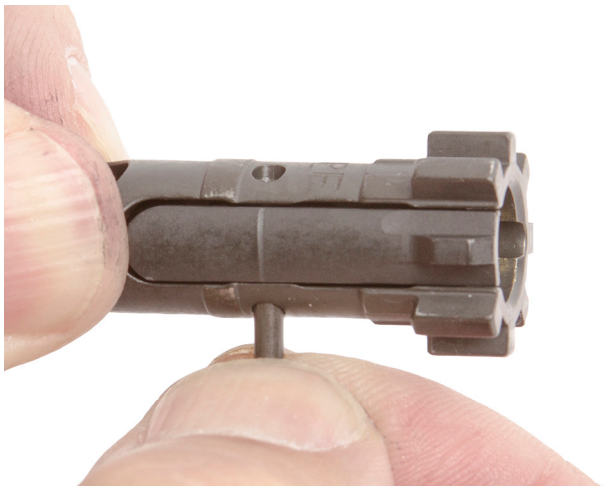


Figure 7. Compressing Extractor Spring Assembly.

4. Install ejector spring into hole on edge of bolt face (Figure 8).

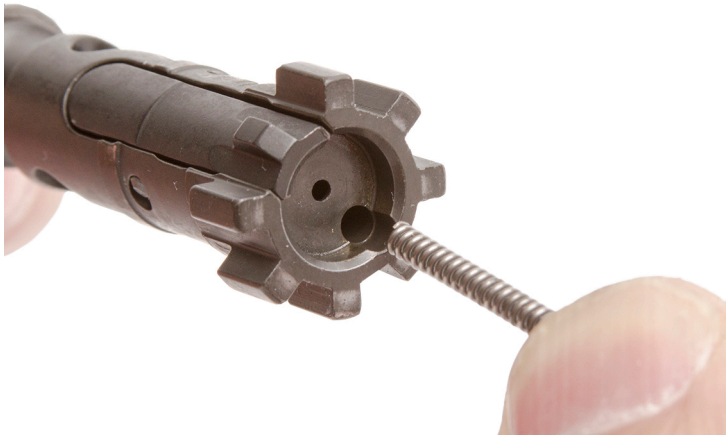


Figure 8. Installing Ejector Spring.

5. Install cartridge ejector with short end of ejector into ejector (Figure 9, Item 1) hole. Align groove on cartridge ejector towards center of bolt face so spring pin can be installed.

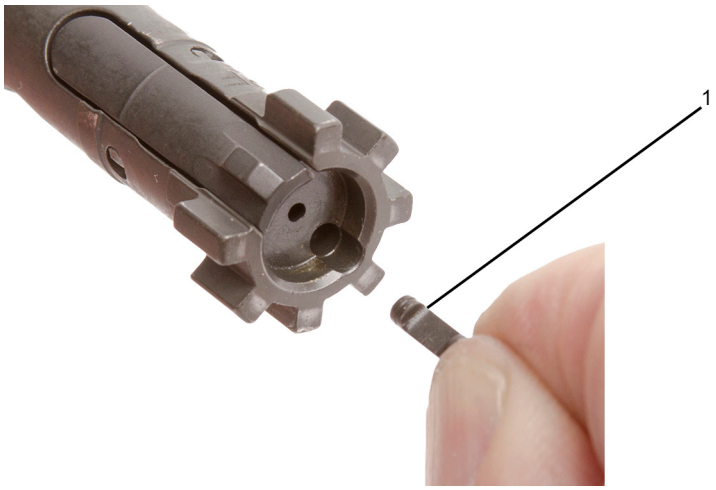


Figure 9. Installing Cartridge Ejector.

NOTE

A dummy cartridge or bench top may be used to compress ejector spring.

6. Using dummy cartridge to compress ejector spring and cartridge ejector, install 1/16-inch drive pin punch to hole in place (Figure 10).



Figure 10. Compressing Ejector Spring and Cartridge Ejector.

7. Using second 1/16-inch drive pin punch and ball peen hammer, install ejector spring pin and drive out first punch. Ensure spring pin is slightly below flush on both sides of bolt (Figure 11).



Figure 11. Installing Ejector Spring Pin.

8. If bolt rings were removed, lay one end of bolt ring into bolt ring slot, hold end with finger, follow bolt ring to other end, rolling bolt ring onto bolt. Repeat process for remaining two bolt rings. Ensure bolt ring slots are staggered 1/3 turn apart (Figure 12).



Figure 12. Bolt Rings Assembly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

KEY AND BOLT CARRIER ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools
1/2-inch Drive Torque Wrench (WP 0062, Item 23)
Ball Peen Hammer (WP 0062, Item 2)
1/4-inch Drive Torque Wrench (WP 0062, Item 23)
1/8-inch Hex Bit (WP 0062, Item 15)
Center Punch (WP 0062, Item 10)

Personnel Required
Qualified Armorer (1)

Equipment Condition
Weapon fieldstripped (WP 0012)

INSPECTION

1. Inspect for burrs, cracks, excessive wear, and abnormalities.
2. Ensure opening of carrier key is not bent or out of round.
3. Ensure screws are tight and staked.

END OF TASK

DISASSEMBLY

CAUTION

Use proper torque wrench to tighten carrier key screws. Use of excessive force may cause screw heads to shear off and require replacement of bolt carrier assembly. Failure to observe this caution may cause equipment damage.

NOTE

Do not disassemble key and bolt carrier. If key or screws are damaged, replace key and bolt carrier assembly. An 1/4-inch or 1/2-inch torque wrench is acceptable as long as proper torque can be applied.

If replacement parts are in short supply, proceed to the following procedure.

1. Tighten carrier key screws.

NOTE

If carrier key screws are loose and only factory staking is present; carrier key screw may be re-torqued and field staked one time. If carrier key screws are loose and field staking is present; replace bolt carrier assembly.

a. Using torque wrench turning clockwise (CW), tighten to 50 to 58 inch-pound (in-lb) (Figure 1).



Figure 1. Tightening Carrier Key.

b. Using ball peen hammer and center punch, stake carrier key screws (Figure 2).

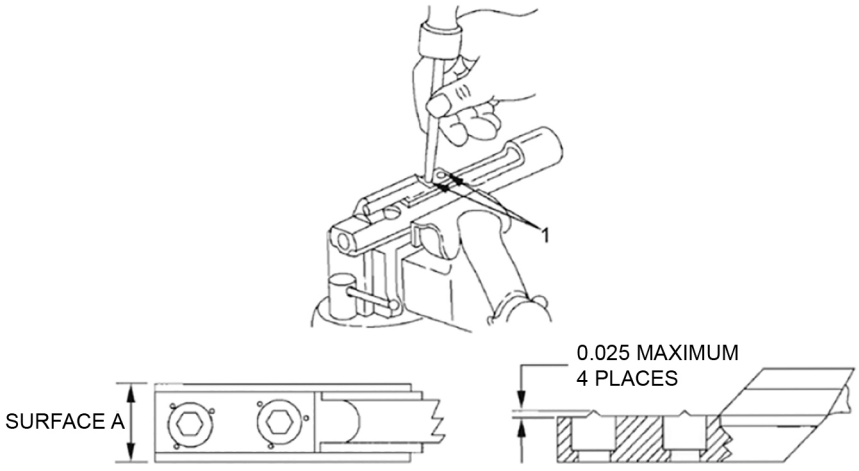


Figure 2. Staking Carrier Key Screws.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

10.3 RAIL INTERFACE SYSTEM (RIS) II UPPER RECEIVER AND BARREL ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools
- 3/32-inch Hex Wrench (WP 0062, Item 7)
- 5/32-inch Hex Wrench (WP 0062, Item 7)
- 7/64-inch Hex Wrench (WP 0062, Item 7)
- 1/2-inch Drive, 3/32-inch Hex Bit Socket (WP 0062, Item 16)
- 2S Roll Pin Holder (WP 0062, Item 13)
- 3S Roll Pin Holder (WP 0062, Item 13)
- 1/2-inch Drive Ratchet (WP 0062, Item 11)
- 1/2-inch Drive ft•lb Torque Wrench (WP 0062, Item 24)
- 1/4-inch Drive in-lb Torque Wrench (WP 0062, Item 23)
- Flat-Tip Screwdriver (WP 0062, Item 17)
- Ball Peen Hammer (WP 0062, Item 2)
- Heat Gun (WP 0062, Item 5)
- Propane Torch (WP 0062, Item 9)
- Vise (WP 0062, Item 21)
- 3/4-inch Open End Wrench (WP 0062, Item 22)
- Needlenose Pliers (WP 0062, Item 8)
- 7/16-inch Hex Wrench (WP 0062, Item 7)
- 1/16-inch Drive Pin Punch (WP 0062, Item 10)
- Scribe (WP 0062, Item 19)
- 3/32-inch Drive Pin Punch (WP 0062, Item 10)
- 3S Roll Pin Punch (WP 0062, Item 13)
- 3/32-inch Roll Pin Punch (WP 0062, Item 13)
- 1/16-inch Roll Pin Punch (WP 0062, Item 13)
- 3/32-inch Hex Head Socket (WP 0062, Item 22)

Special Tools
- Action Rod (WP 0057, Item 14)
- Rail Assembly Block (WP 0057, Item 17)
- Gas Block/Gas Tube Assembly Block (WP 0057, Item 10)
- Gas Tube Wrench (WP 0057, Item 7)
- Barrel Nut Wrench (WP 0057, Item 13)
- Combination Wrench M4A1 (WP 0057, Item 6)

Materials Required
- Heat Resistant Gloves (WP 0061, Item 17)
- Loctite® 243 (WP 0061, Item 29)
- Rocksett (WP 0061, Item 28)
- Wiping Rag (WP 0061, Item 27)
- Degreaser (WP 0061, Item 1)
- Molybdenum Disulfide Grease (WP 0061, Item 20)
- Wire Brush (WP 0061, Item 3)

Mandatory Replacement Parts
- FMBS-C (WP 0063, Item 4)
- Spring Pin (WP 0063, Item 1)
- Gas Block Roll Pin (WP 0063, Item 2)
- C-Clip (WP 0063, Item 3)

Personnel Required
- Qualified Armorer (1)

Reference
- WP 0023

Equipment Condition
- Weapon fieldstripped (WP 0012)

DISASSEMBLY

NOTE

Removal of Family Muzzle Brake Suppressor Carbine (FMBS-C) flash hider is not necessary for removal of 10.3 RIS II rail system.

If rail needs replaced, proceed to step 2 after the completion of step 1a through c.

CAUTION

Shoulder of action rod has to be against vise jaws. Failure to observe this caution could result in equipment damage.

1. Remove FMBS-C flash hider.

   a. Place action rod in vise (Figure 1, Item 1).

   b. Tighten vise until action rod (Figure 1, Item 2) is secure.

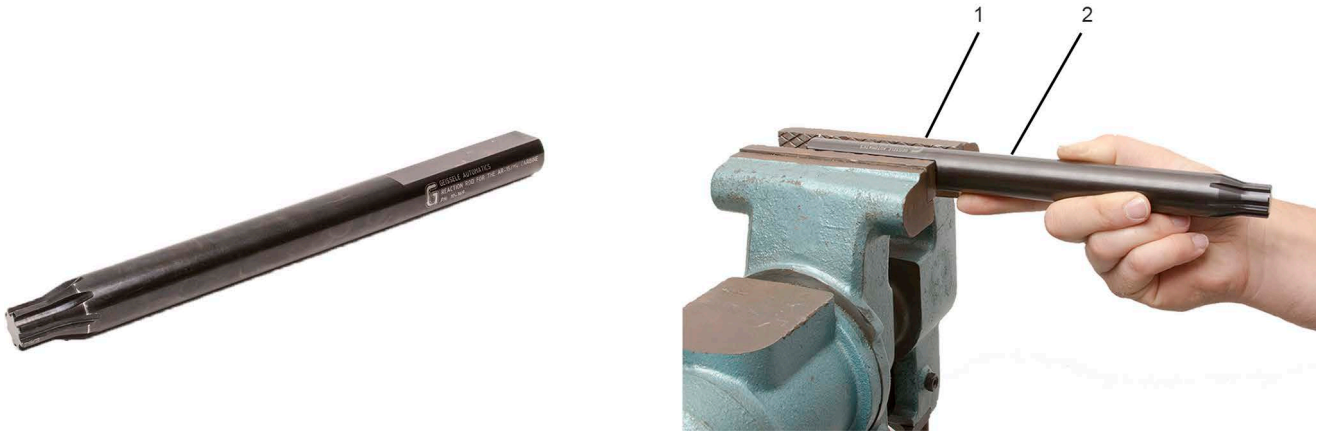


Figure 1. Securing Action Rod.

CAUTION

Failure to fully seat barrel extension lugs onto action rod could result in equipment damage.

c. Install RIS II Upper Receiver Group (URG) on action rod at 12 o'clock position (Figure 2).

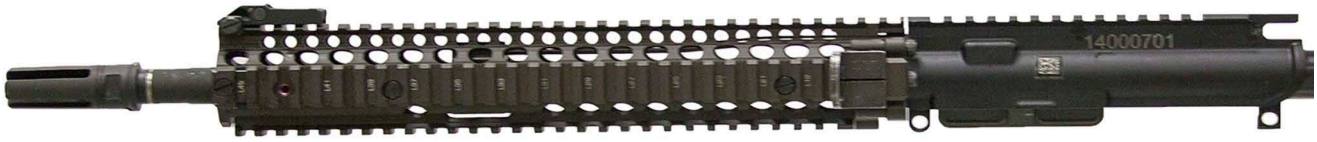


Figure 2. URG on Action Rod at 12 o'clock Position.

WARNING



Burn hazard. FMBS-C flash hider and barrel can be hot. Keep hands clear of hot parts and use heat resistant gloves. Wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Heat shall be applied only to FMBS-C flash hider. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

When FMBS-C flash hider cannot be removed from barrel, replace barrel assembly if authorized by component. For all other personnel, replace defective URG. Heat removal is not the best method to remove Rocksett. Soaking the muzzle end of the weapon in warm water for a minimum of 20 minutes should allow for the Rocksett to break free.

d. If necessary, use heat gun or propane torch to heat FMBS-C flash hider (Figure 3).



Figure 3. Heating FMBS-C Flash Hider.

NOTE

Ensure replacement shim set contains spacer prior to disposal.

e. Using combination wrench M4A1 and 1/2-inch drive ratchet, or 3/4-inch open end wrench, remove FMBS-C flash hider (Figure 4). Discard shims and spacer.

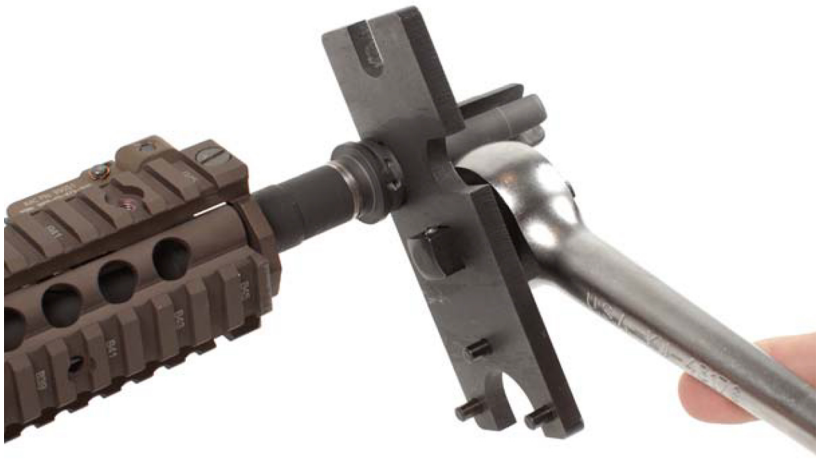


Figure 4. Removing FMBS-C Flash Hider.

NOTE

All accessories must be removed prior to starting work on disassembly of rail. All optics and iron sights must be re-zeroed after reattaching.

2. Remove forward sling mount.

a. Using 7/64-inch hex wrench, remove two socket head capscrews from forward sling mount (Figure 5).



Figure 5. Removing Forward Sling Mount.

3. Remove folding flip-up front sight.

   a. Using flat-tip screwdriver, loosen folding front Back-Up Iron Sight (BIS) screw (Figure 6).



Figure 6. Loosening Folding Flip-Up Front Sight.

   b. Remove folding flip-up front sight from rail.

4. Remove RIS II lower rail.

NOTE

Use of a vise is optional for removal of RIS II lower rail.

   a. Using flat-tip screwdriver, remove four rear (2 each side) #10-32 slotted flathead screws with four washers from RIS II (Figure 7). Retain screws and washers.



Figure 7. Removing Lower Rail Screws.

b. Remove lower rail (Figure 8).



Figure 8. Removing Lower Rail.

5. Removal RIS II upper rail.

NOTE

Use of vise is optional for removal of RIS II upper rail.

a. Remove action rod and URG from vise.

b. Place rail assembly block in vise.

c. Slide URG into rail assembly block until bolt-up plate is even with edge of rail assembly block.

d. Tighten vise (Figure 9).



Figure 9. URG in Rail Assembly Block.

e. Using 5/32-inch hex wrench, remove six socket head capscrews (Figure 10, Item 1) from bolt-up plate. Retain screws.

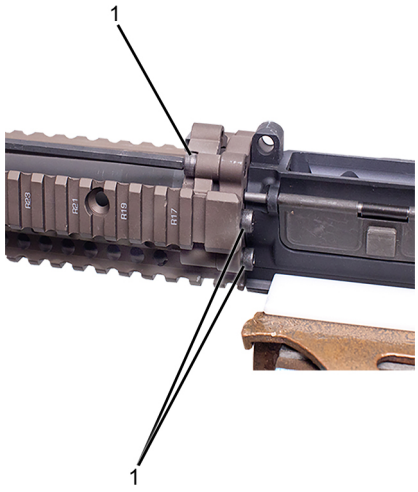


Figure 10. Removing Upper Rail Screws.

f. Remove upper rail (Figure 11).



Figure 11. Removing Upper Rail.

WARNING



Burn hazard. Gas block and setscrews will be hot. Keep hands clear of hot parts and use heat resistant gloves or wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

NOTE

Refer to step 6 for removal of gas block and gas tube assembly. Refer to step 7 for removal of gas tube only.

6. Remove gas block and gas tube assembly.

   a. Using heat gun or propane torch, heat setscrews at base of gas block.

   b. Using 3/32-inch hex wrench turning counterclockwise (CCW), remove setscrews (Figure 12).

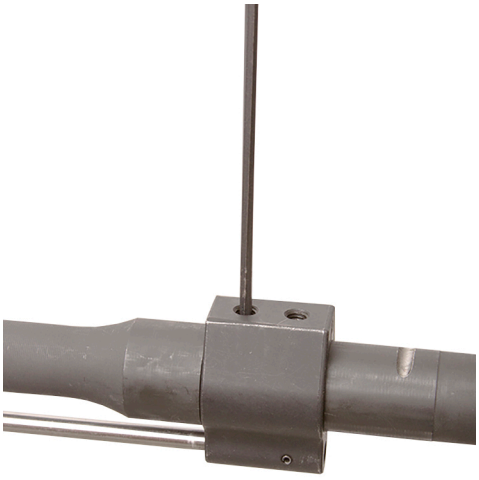


Figure 12. Removing Setscrews.

NOTE

Use of nylon hammer may be necessary if removal of gas block is difficult.

c. Slide gas block and gas tube from barrel (Figure 13).



Figure 13. Removing Gas Block and Gas Tube.

d. Place gas block into gas block/gas tube assembly block.

e. Using 1/16-inch drive pin punch and small ball peen hammer, drive out gas block roll pin from glass block (Figure 14). Discard roll pin.



Figure 14. Removing Gas Block Roll Pin.

NOTE

Use of gas tube wrench may be necessary if removal of gas tube is difficult.

f. Remove gas tube from gas block (Figure 15).



Figure 15. Removing Gas Tube Wrench.

7. Remove gas tube only.

a. Using 1/16-inch drive pin punch and small ball peen hammer, drive out gas block roll pin from gas block (Figure 16). Discard roll pin.



Figure 16. Driving Out Gas Block Roll Pin.

NOTE

Use of gas tube wrench may be necessary if removing gas tube is difficult.

b. Slide gas tube into receiver until gas tube is free from gas block (Figure 17).



Figure 17. Sliding Gas Tube.

c. Remove gas tube from receiver (Figure 18) by twisting gas tube to pass gas block may be needed.



Figure 18. Removing Gas Tube.

NOTE

Only personnel who are authorized by component may remove/replace barrels

8. Remove barrel and bolt-up plate.

   a. Remove URG and upper receiver action block from vise.

   b. Place action rod in vise and tighten vise until action rod is secure.

   c. Place URG on action rod in 12 o'clock position.

CAUTION

Use barrel nut wrench as shown below. Failure to use barrel nut wrench in manner shown could result in equipment damage.

   d. Using barrel nut wrench and 1/2-inch drive ratchet turning CCW, remove barrel nut (Figure 19).



Figure 19. Removing Barrel Nut.

e. Remove barrel from upper receiver (Figure 20).



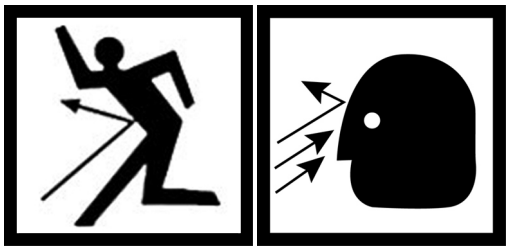
Figure 20. Removing Barrel.

f. Remove bolt-up plate from upper receiver (Figure 21).



Figure 21. Removing Bolt-Up Plate.

WARNING



Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

With barrel removed, ejector port cover headless grooved pin may be withdrawn forward (towards muzzle) without removing C-clip. For removal of ejector port cover with barrel installed, proceed with removal of C-clip.

Headless grooved pin may bind against forward assist housing requiring additional force to remove.

9. Disassemble ejector port cover assembly; using scribe or needlenose pliers, remove C-clip. Control ejection port cover and spring to prevent loss as headless grooved pin is withdrawn. Grasp ejection port cover and spring. Slide headless grooved pin rearward and remove (Figure 22).



Figure 22. Removing C-Clip and Headless Grooved Pin.

10. Disassemble forward assist assembly.

    a. Using ball peen hammer and 3/32-inch drive pin punch, apply slight pressure to forward assist, remove and discard spring pin (Figure 23).



Figure 23. Removing Spring Pin.

    b. Remove forward assist assembly and forward assist spring from receiver.

    c. Remove spring from forward assist (Figure 24).

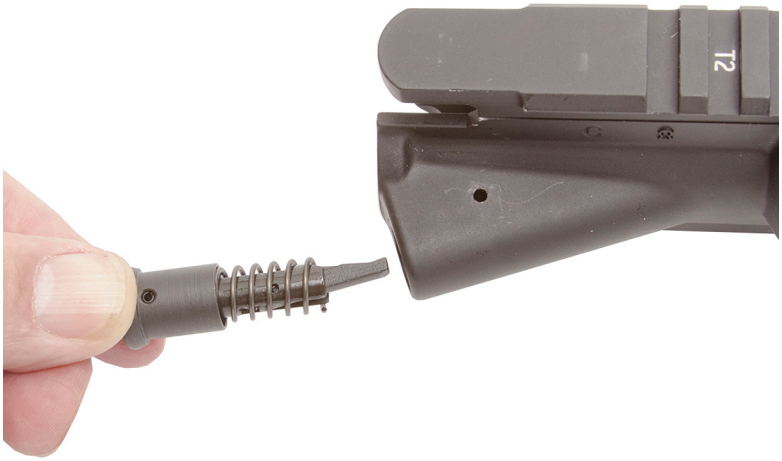


Figure 24. Removing Forward Assist Assembly and Forward Assist Spring.

END OF TASK

INSPECTION

1. Inspect upper and lower rail.

    a. Inspect lower rail for cracks, deformities, and unusual wear. Replace when worn or damaged.

NOTE

Two spare attachment screws located at front of rail are replacement screws.

    b. Inspect lower rail attachment screws for cracks, or deformities. Replace when required.

    c. Tighten attachment screws or replace lower rail when required.

    d. Inspect upper rail for cracks, deformities, and unusual wear. Replace when worn or damaged.

    e. Inspect RIS II rails for deformities and straightness. Replace when damaged.

    f. Inspect alignment of rail system to receiver. Replace rail when damaged or fails to align to receiver.

    g. Inspect bolt-up plate and capscrews. Tighten when loose or replace when missing, damaged or out of round.

2. Inspect gas block.

    a. Inspect gas block for cracks, deformities, and unusual wear. Replace when required.

    b. Ensure gas block setscrews are present and recessed. Tighten or replace when required.

3. Inspect forward sling mount.

    a. Inspect sling mount for cracks or deformities. Replace when required.

    b. Ensure socket head capscrews are present and tight. Tighten or replace when required.

4. Inspect front and rear BIS.

NOTE

Repairs shall not be performed to front and rear BIS. Front and rear BIS assembly shall be replaced when damaged or fails to operate as designed.

The following steps will be conducted after the BIS has been reinstalled.

    a. Ensure front and rear BIS will deploy and remains in place. Replace BIS when damaged or fails to function.

    b. Ensure front and rear BIS post rotates when detent is pushed down. Replace BIS when required.

5. Inspect receiver cartridge for any cracks, burrs, bulges, or deformation.

END OF TASK

NOTE

If converting to a Upper Receiver Group Improved (URG-I) variant, proceed to the corresponding Work Package (WP).

ASSEMBLY

1. Assembly forward assist assembly.

   a. Install forward assist spring onto forward assist assembly.

   b. Ensure forward assist pawl faces toward inside of receiver and insert into receiver (Figure 25).

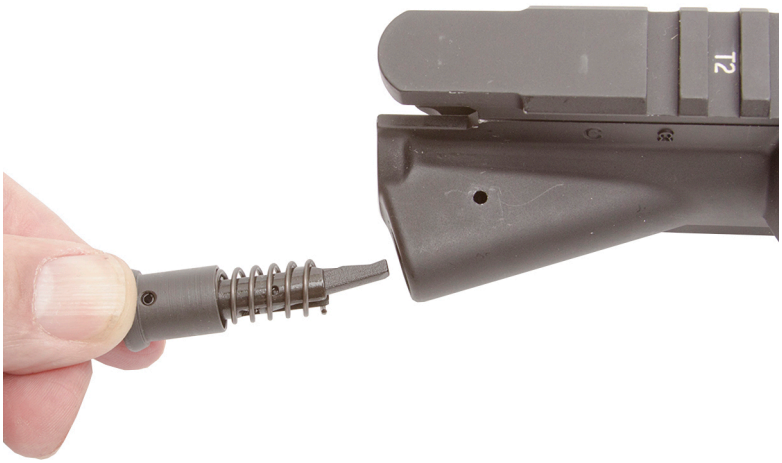


Figure 25. Assembling Forward Assist Assembly and Forward Assist Spring.

   c. Align forward assist with receiver holes. Using ball peen hammer and 3S roll pin holder, insert new spring pin into receiver hole (Figure 26).



Figure 26. Aligning Forward Assist.

d. Using ball peen hammer and 3/32-inch roll pin punch, drive spring pin flush with receiver (Figure 27).

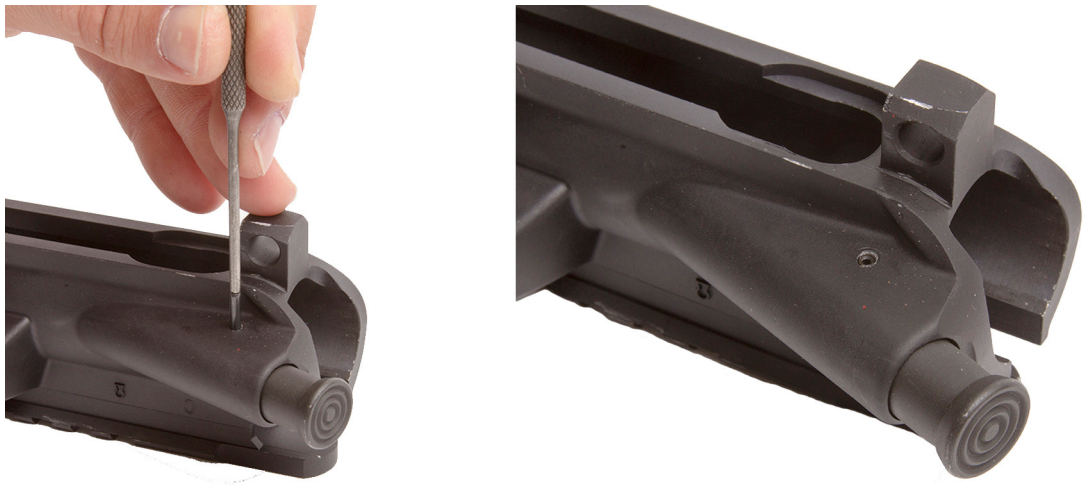


Figure 27. Driving Spring Pin Flush.

2. Assemble ejection port cover.

NOTE

With barrel removed, ejector port cover headless grooved pin may be installed from front with C-clip installed. For installation of ejector port cover with barrel installed, proceed to install headless grooved pin from rear without C-clip.

a. Install action rod in vise and tighten vise until action rod is secure.

b. Place URG on action rod in 12 o'clock position.

c. Position ejection port cover and cover spring on upper receiver with short leg of cover spring to rear on inside of ejection port cover.

d. Install headless grooved pin, groove end leading from back to front, halfway through spring (Figure 28).



Figure 28. Installing Headless Grooved Pin.

e. Hold cover spring short leg in this position, turning long leg (Figure 29, Item 1) of spring 1/2 turn clockwise (CW) creating tension in spring. Long leg of spring will be forward on inside of ejection port cover.

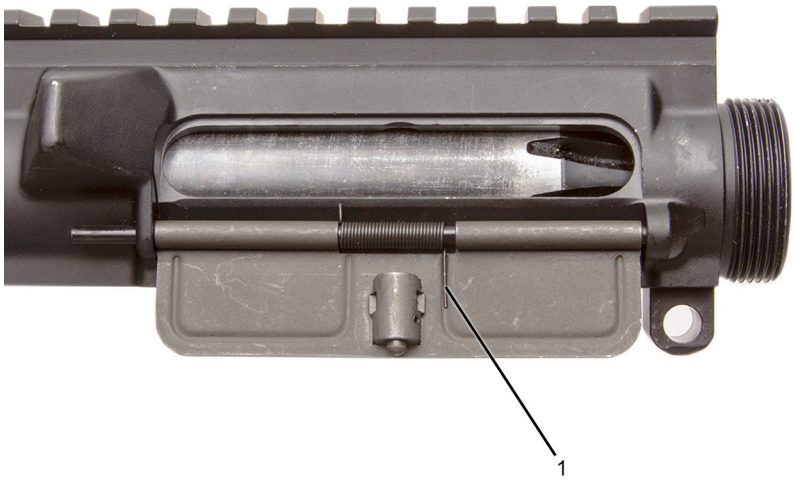


Figure 29. Long Leg of Cover Spring.

f. Hold spring in place and continue to push headless grooved cover pin until ejection port cover is secured to receiver (Figure 30).



Figure 30. Pushing Grooved Headless Cover Pin.

g. Using needlenose pliers, secure headless groove pin with C-clip (Figure 31).



Figure 31. Securing Headless Groove Pin.

3. Install bolt-up plate and barrel.

   a. Apply molybdenum disulfide grease to cartridge receiver threads and the mating surface between barrel extension and receiver.

   b. Align bolt-up plate nodes with upper receiver rail (Figure 32).



Figure 32. Aligning Bolt-Up Nodes.

NOTE

Force may be required to insert barrel.

   c. Align barrel locating pin (Figure 33, Item 1) with slot in upper receiver.



Figure 33. Aligning Locating Pin and Slot.

   d. Apply molybdenum disulfide grease to barrel nut threads.

e. Install barrel nut onto barrel with small slots facing muzzle (Figure 34).



Figure 34. Installing Barrel Nut.

CAUTION

Use barrel nut wrench as shown below. Failure to use wrench in correct manner can result in equipment damage.

f. Using barrel nut wrench and 1/2-inch drive foot-pound (ft•lb) torque wrench, torque barrel nut to 55 ft•lb (Figure 35).



Figure 35. Torquing Barrel Nut.

4. Install gas tube and gas block.

   a. Place gas block in gas block/gas tube assembly block. Gas port side of gas block and large shoulder of assembly block must be on same side.

   b. With largest gas tube hole facing large opening in gas block, insert gas tube into gas block (Figure 36).



Figure 36. Gas Block/Gas Tube.

   c. Using small ball peen hammer and 2S roll pin holder, insert new gas block roll pin into hole.

   d. Using small ball peen hammer and 1/16-inch roll pin punch, drive gas block roll pin into gas block until flush on both sides (Figure 37).



Figure 37. Installing Gas Block Roll Pin.

e. Slide URG forward to disengage from action rod, rotate to 6 o'clock position, and reinstall on action rod (Figure 38).



Figure 38. Rotating URG to 6 O'clock Action Rod.

WARNING



Fire, vapor, and chemical hazard. Degreaser is flammable, toxic, and a skin irritant. Keep away from flame, use in well ventilated area, and wear protective gloves and face shield. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

f. Using clean cloth and degreaser, remove oil. Lubricant from gas port end of barrel.

g. Slide gas block/gas tube assembly onto barrel. Ensure gas tube enters upper receiver gas block through hole in bolt-up plate (Figure 39).



Figure 39. Installing Gas Block/Gas Tube Assembly.

NOTE

Gas block should slide freely until making contact with barrel shoulder.

h. Insert setscrew into forward setscrew hole of gas block (Figure 40).

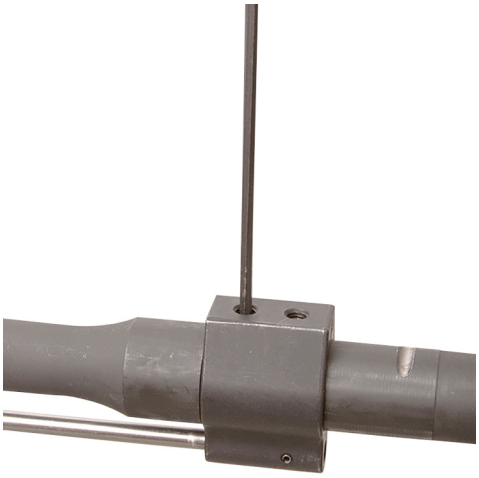


Figure 40. Seating Setscrew.

i. Apply one drop of Loctite® 243 into rear setscrew hole and insert setscrew.

j. Using 3/32-inch hex wrench, tighten rear setscrew (Figure 41).



Figure 41. Tightening Rear Setscrew.

k. Using 1/4-inch drive inch-pound (in-lb) torque wrench and 3/32-inch hex head socket, torque rear setscrew to 25 in-lb (Figure 42).



Figure 42. Torquing Rear Setscrew.

l. Using 3/32-inch hex wrench, remove forward setscrew (Figure 43).



Figure 43. Removing Forward Setscrew.

m. Apply one drop of Loctite® 243 into forward setscrew hole and insert setscrew.

n. Using 3/32-inch hex wrench, tighten forward setscrew hand-tight (Figure 44).



Figure 44. Tightening Forward Setscrew.

o. Using 1/4-inch drive in-lb torque wrench and 3/32-inch hex head socket, torque forward setscrew to 25 in-lb (Figure 45).



Figure 45. Torquing Forward Setscrew.

NOTE

For 14.5-inch RIS II URG, RIS II upper rail step 8 must be installed prior to installing FMBS-C flash hider step 5.

For 10.3-inch RIS II URG, FMBS-C flash hider step 8 may be installed prior to install of RIS II upper rail step 5.

5. Install RIS II upper rail.

   a. Remove action rod and URG from vise.

   b. Place rail assembly block in vise.

   c. Slide URG into rail assembly block. Do not tighten vise (Figure 46).



Figure 46. URG/Rail Assembly Block.

NOTE

Upper rail should slide against upper receiver and bolt-up plate.

d. Slide upper rail over barrel and align with rail assembly block (Figure 47).



Figure 47. Aligning Rail Reassembly.

NOTE

Loctite® should only be used if reusing screws and factory adhesive is not present (worn away).

e. Apply one drop of Loctite® 243 to four long #10-32 socket head capscrews and install in the 2, 3, 9, and 10 o'clock screw holes from rear of bolt-up plate hand-tight (Figure 48).



Figure 48. Installing Four Socket Head Capscrews.

NOTE

Loctite® should only be used if reusing screws and factory adhesive is not present (worn away).

f. Apply one drop of Loctite® 243 to two short #10-32 socket head capscrews and install in the 4 and 8 o'clock receiver holes from front of bolt-up plate hand-tight (Figure 49).



Figure 49. Installing Two Socket Head Capscrews.

CAUTION

Do not over-tighten screws. Damage may occur to screw holes. When screws do not tighten and stop, threads have been damaged and rail component must be replaced. Failure to observe this caution could result in equipment damage.

NOTE

Tightening six socket head capscrews in an alternating pattern will maintain alignment when screws are tightened. Loosening and retightening vise to reseat upper receiver in rail alignment block is recommended after tightening each screw to ensure rail system maintains alignment and screws are torqued properly.

g. Using 1/4-inch drive in-lb torque wrench and 5/32-inch hex head socket, torque six screws in alternating pattern to 29-32 in-lb.

h. Verify rail system is aligned with receiver using rail assembly block. Ensure barrel is centered in upper rail.

i. If rails do not align, disassemble rail system and reinstall.

6. Install RIS II lower rail.

NOTE

Use of vise is optional for installation of RIS II lower rail.

a. With slotted end facing towards muzzle, align lower rail with upper rail (Figure 50).



Figure 50. Aligning Lower Rail.

NOTE

RIS II upper rail holds two spare #10-32 flathead slotted screws in forward most position. These holes are for spare screws only and do not secure RIS II lower rail.

Loctite® should only be used if reusing screws and factory adhesive is not present (worn away).

b. After applying Loctite® 243, insert four #10-32 flathead slotted screws and four washers into left and right side screw holes.

CAUTION

Do not over-tighten screws. Damage may occur to threads. If damage occurs, rail must be replaced.

c. Using flat-tip screwdriver, tighten screws (Figure 51).



Figure 51. Tightening Screws.

7. Install front BIS.

NOTE

Ensure rail clamp nut is flush with rail. Loctite® 243 may be used on front BIS threads.

a. Install front BIS on top rail as close to muzzle as possible (T38 position on top rail).

b. Using flat-tip screwdriver, tighten front BIS screw (Figure 52).



Figure 52. Installing Front BIS Front Sight.

8. Install FMBS-C flash hider.

   a. Remove RIS II URG and rail assembly block from vise.

   b. Place action rod in vise.

   c. Tighten vise until action rod is secure.

CAUTION

Failure to fully seat barrel extension lugs onto action rod could result in damage to equipment and/or tools.

   d. Place RIS II URG onto action rod.

NOTE

Ensure barrel threads are clear of Rocksett using degreaser and wire brush.

Removal and installation of FMBS-C flash hider may be performed several times to add or remove shims to ensure proper alignment of FMBS-C flash hider and barrel.

   e. Using clean cloth and degreaser, clean barrel and FMBS-C flash hider threads.

   f. Install spacer (Figure 53) on barrel with beveled side facing barrel shoulder.

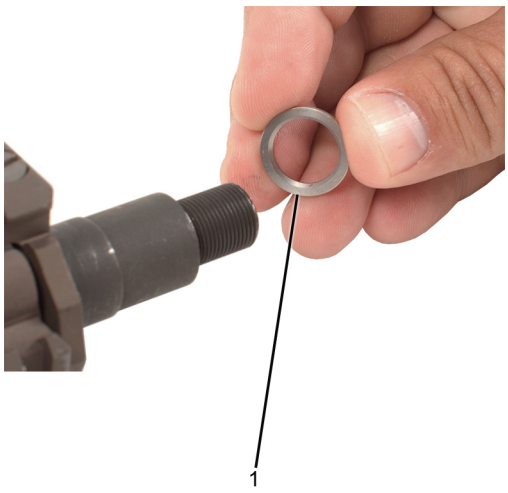


Figure 53. Installing Spacer.

g. Install FMBS-C flash hider on barrel hand-tight (Figure 54).



Figure 54. Installing FMBS-C Flash Hider.

h. Check adapter index tab (Figure 55, Item 1) position.

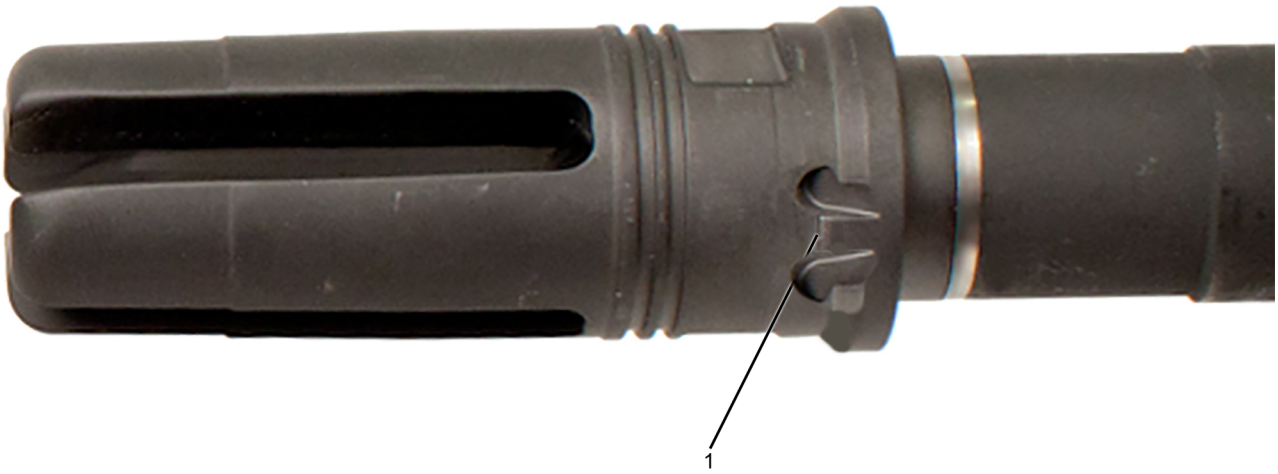


Figure 55. Adapter Index Tab.

NOTE

Index tab is properly aligned at the 6 o'clock position after torque values have been applied.

When index tab is between lines, select previous CCW line shim color(s). When index tab is between 6 o'clock position and starting torque location, shims are not required.

i. Using timing wheel selection chart, select shim(s) for flash hider alignment from shim set thickness chart (Figure 56).

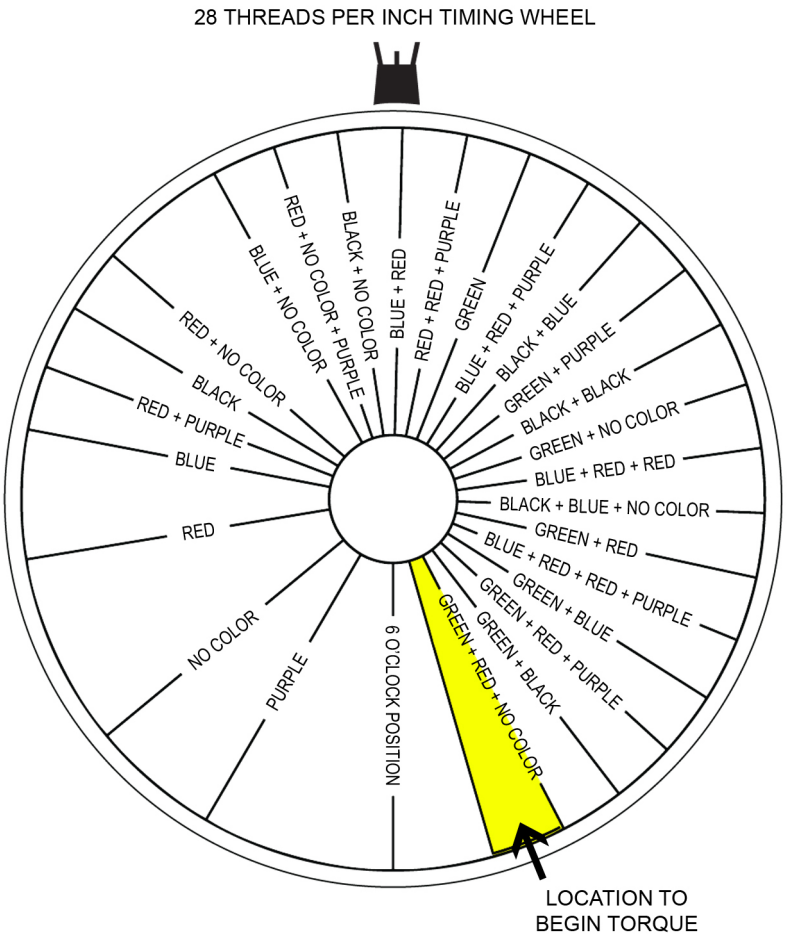


Figure 56. Timing Wheel Selection Chart.

Color	Purple	None	Red	Blue	Black	Green
Thickness	.003	.005	.008	.010	.012	.020

Figure 57. Shim Set Thickness Chart.

j. Remove FMBS-C flash hider from barrel.

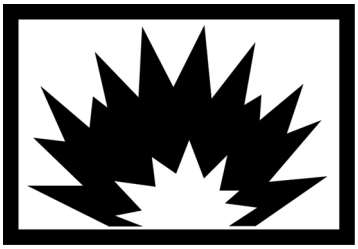
k. Install selected shim(s) on barrel.

l. Install FMBS-C flash hider on barrel and turn until hand-tight.

m. Complete step h through step l until FMBS-C flash hider index tab is positioned at location to begin torque as indicated Figure 56.

n. Remove FMBS-C flash hider from barrel.

WARNING

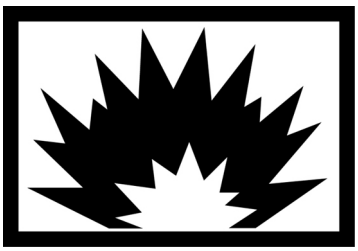


Explosion hazard. Rocksett shall be applied only to barrel and FMBS-C flash hider threads. Rocksett entering weapon bore could cause a bore obstruction and increase barrel pressure. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment.

o. Apply two drops of Rocksett to barrel threads.

p. Install FMBS-C flash hider on barrel and turn until hand-tight.

WARNING



Explosion hazard. Torquing FMBS-C flash hider beyond 30 ft•lb could cause a bore constriction to occur. Manufacturer recommended pressures could be exceeded causing bore to explode. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

q. Using combination wrench M4A1 and 1/2-inch drive ft•lb torque wrench, torque FMBS-C flash hider to 20-30 ft•lb.

r. Verify adapter index tab is positioned bottom dead center.

s. Keep URG in warn/dry environment for 24 hours to cure Rocksett.

9. Install forward sling mount.

   a. Slide forward sling mount (Figure 58) onto RIS II rail in desired location.



Figure 58. Installing Sling Mount.

   b. Insert two socket head capscrews into top forward sling mount.

   c. Using 7/64-inch hex wrench, tighten socket head capscrews (Figure 59).



Figure 59. Installing Sling Mount Socket Head Capscrews.

10. Perform headspace and bore straightness gauging In Accordance With (IAW) WP 0023.

11. Function fire re-barreled weapon.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

14.5 RAIL INTERFACE SYSTEM (RIS) II UPPER RECEIVER AND BARREL ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools
- 3/32-inch Hex Wrench (WP 0062, Item 7)
- 5/32-inch Hex Wrench (WP 0062, Item 7)
- 7/64-inch Hex Wrench (WP 0062, Item 7)
- 2S Roll Pin Holder (WP 0062, Item 13)
- 3S Roll Pin Holder (WP 0062, Item 13)
- 1/2-inch Drive Ratchet (WP 0062, Item 11)
- 1/2-inch Drive ft•lb Torque Wrench (WP 0062, Item 24)
- 1/4-inch Drive in-lb Torque Wrench (WP 0062, Item 23)
- Flat-Tip Screwdriver (WP 0062, Item 17)
- Ball Peen Hammer (WP 0062, Item 2)
- Heat Gun (WP 0062, Item 5)
- Propane Torch (WP 0062, Item 9)
- Vise (WP 0062, Item 21)
- 3/4-inch Open End Wrench (WP 0062, Item 22)
- Needlenose Pliers (WP 0062, Item 8)
- 7/16-inch Hex Wrench (WP 0062, Item 7)
- 1/16-inch Drive Pin Punch (WP 0062, Item 10)
- Scribe (WP 0062, Item 19)
- 3/32-inch Drive Pin Punch (WP 0062, Item 10)
- 3S Roll Pin Punch (WP 0062, Item 13)
- 3/32-inch Roll Pin Punch (WP 0062, Item 13)
- 1/16-inch Roll Pin Punch (WP 0062, Item 13)
- 3/32-inch Hex Head Socket (WP 0062, Item 22)

Special Tools
- Action Rod (WP 0057, Item 14)
- Rail Assembly Block (WP 0057, Item 17)
- Gas Block/Gas Tube Assembly Block (WP 0057, Item 10)
- Gas Tube Wrench (WP 0057, Item 7)
- URG-I Barrel Nut Wrench (WP 0057, Item 18)
- Combination Wrench M4A1 (WP 0057, Item 6)

Materials Required
- Heat Resistant Gloves (WP 0061, Item 17)
- Loctite® 243 (WP 0061, Item 29)
- Rocksett (WP 0061, Item 28)
- Wiping Rag (WP 0061, Item 27)
- Degreaser (WP 0061, Item 1)
- Molybdenum Disulfide Grease (WP 0061, Item 20)
- Wire Brush (WP 0061, Item 8)

Mandatory Replacement Parts
- FMBS-C (WP 0063, Item 4)
- Spring Pin (WP 0063, Item 1)
- Gas Block Roll Pin (WP 0063, Item 2)
- C-Clip (WP 0063, Item 3)

Personnel Required
- Qualified Armorer (1)

Reference
- WP 0023

Equipment Condition
- Weapon fieldstripped (WP 0012)

DISASSEMBLY

NOTE

Removal of Family Muzzle Brake Suppressor Carbine (FMBS-C) flash hider is not necessary for removal of 10.3 RIS II rail system.

If rail needs replaced, proceed to step 2 after the completion of step 1a through c.

CAUTION

Shoulder of action rod has to be against vise jaws. Failure to observe this caution could resul tin equipment damage.

1. Remove FMBS-C flash hider.

   a. Place action rod in vise (Figure 1, Item 1).

   b. Tighten vise until action rod (Figure 1, Item 2) is secure.

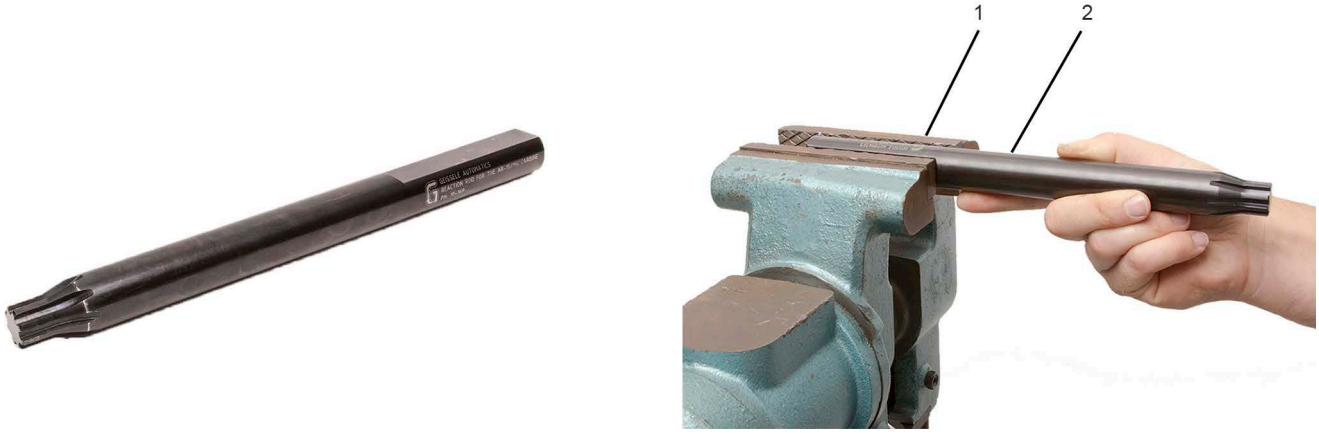


Figure 1. Securing Action Rod.

CAUTION

Failure to fully seat barrel extension lugs onto action rod could result in equipment damage.

c. Install RIS II Upper Receiver Group (URG) on action rod at 12 o'clock position (Figure 2).



Figure 2. URG on Action Rod at 12 o'clock Position.

WARNING



Burn hazard. FMBS-C flash hider and barrel can be hot. Keep hands clear of hot parts and use heat resistant gloves. Wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Heat shall be applied only to FMBS-C flash hider. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

When FMBS-C flash hider cannot be removed from barrel, replace barrel assembly if authorized by component. For all other personnel, replace defective URG. Heat removal is not the best method to remove Rocksett. Soaking the muzzle end of the weapon in warm water for a minimum of 20 minutes should allow for the Rocksett to break free.

d. If necessary, use heat gun or propane torch to heat FMBS-C flash hider (Figure 3).



Figure 3. Heating FMBS-C Flash Hider.

NOTE

Ensure replacement shim set contains spacer prior to disposal.

e. Using combination wrench M4A1 and 1/2-inch drive ratchet, or 3/4-inch open end wrench, remove FMBS-C flash hider (Figure 4). Discard shims and spacer.

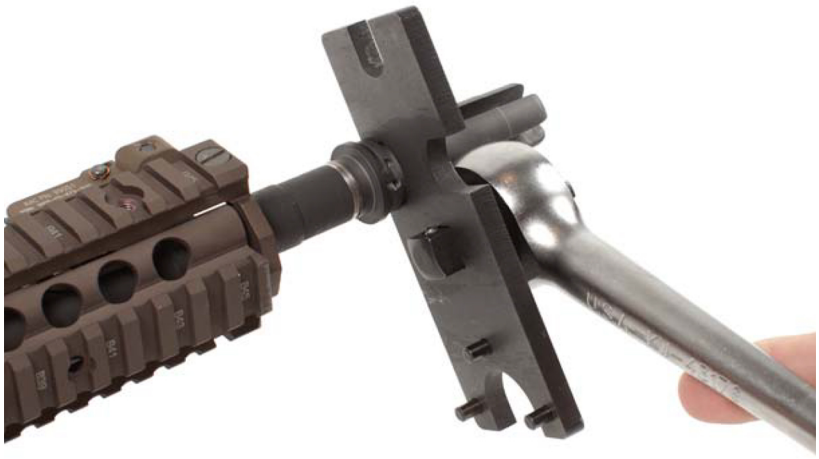


Figure 4. Removing FMBS-C Flash Hider.

NOTE

All accessories must be removed prior to starting work on disassembly of rail. All optics and iron sights must be re-zeroed after reattaching.

2. Remove forward sling mount.

a. Using 7/64-inch hex wrench, remove two socket head capscrews from forward sling mount (Figure 5).



Figure 5. Removing Forward Sling Mount.

3. Remove folding flip-up front sight.

   a. Using flat-tip screwdriver, loosen folding front Back-Up Iron Sight (BIS) screw (Figure 6).



Figure 6. Loosening Folding Flip-Up Front Sight.

   b. Remove folding flip-up front sight from rail.

4. Remove RIS II lower rail.

NOTE

Use of a vise is optional for removal of RIS II lower rail.

   a. Using flat-tip screwdriver, remove four rear (2 each side) #10-32 slotted flathead screws with four washers from RIS II (Figure 7). Retain screws and washers.



Figure 7. Removing Lower Rail Screws.

b. Remove lower rail (Figure 8).



Figure 8. Removing Lower Rail.

5. Removal RIS II upper rail.

NOTE

Use of vise is optional for removal of RIS II upper rail.

a. Remove action rod and URG from vise.

b. Place rail assembly block in vise.

c. Slide URG into rail assembly block until bolt-up plate is even with edge of rail assembly block.

d. Tighten vise (Figure 9).



Figure 9. URG in Rail Assembly Block.

e. Using 5/32-inch hex wrench, remove six socket head capscrews (Figure 10, Item 1) from bolt-up plate. Retain screws.

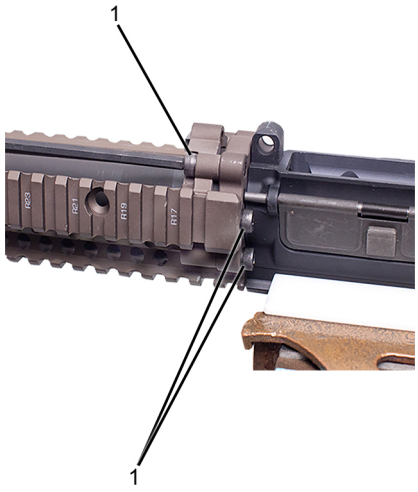


Figure 10. Removing Upper Rail Screws.

f. Remove upper rail (Figure 11).



Figure 11. Removing Upper Rail.

WARNING



Burn hazard. Gas block and setscrews will be hot. Keep hands clear of hot parts and use heat resistant gloves or wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

NOTE

Refer to step 6 for removal of gas block and gas tube assembly. Refer to step 7 for removal of gas tube only.

6. Remove gas block and gas tube assembly.

   a. Using heat gun or propane torch, heat setscrews at base of gas block.

   b. Using 3/32-inch hex wrench turning counterclockwise (CCW), remove setscrews (Figure 12).

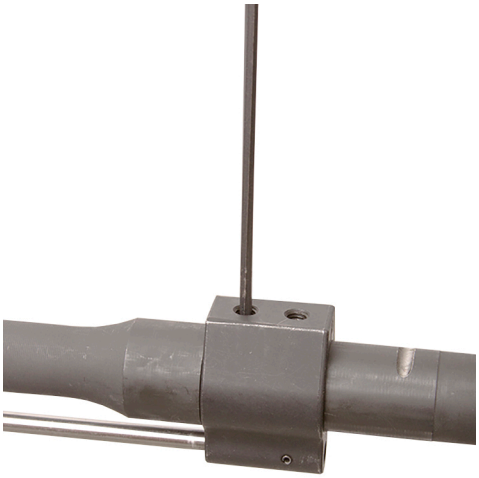


Figure 12. Removing Setscrews.

NOTE

Use of nylon hammer may be necessary if removal of gas block is difficult.

c. Slide gas block and gas tube from barrel (Figure 13).



Figure 13. Removing Gas Block and Gas Tube.

d. Place gas block into gas block/gas tube assembly block.

e. Using 1/16-inch drive pin punch and small ball peen hammer, drive out gas block roll pin from glass block (Figure 14). Discard roll pin.



Figure 14. Removing Gas Block Roll Pin.

NOTE

Use of gas tube wrench may be necessary if removal of gas tube is difficult.

f. Remove gas tube from gas block (Figure 15).



Figure 15. Removing Gas Tube Wrench.

7. Remove gas tube only.

a. Using 1/16-inch drive pin punch and small ball peen hammer, drive out gas block roll pin from gas block (Figure 16). Discard roll pin.



Figure 16. Driving Out Gas Block Roll Pin.

NOTE

Use of gas tube wrench may be necessary if removing gas tube is difficult.

b. Slide gas tube into receiver until gas tube is free from gas block (Figure 17).



Figure 17. Sliding Gas Tube.

c. Remove gas tube from receiver (Figure 18) by twisting gas tube to pass gas block may be needed.



Figure 18. Removing Gas Tube.

NOTE

Only personnel who are authorized by component may remove/replace barrels

8. Remove barrel and bolt-up plate.

   a. Remove URG and upper receiver action block from vise.

   b. Place action rod in vise and tighten vise until action rod is secure.

   c. Place URG on action rod in 12 o'clock position.

CAUTION

Use barrel nut wrench as shown below. Failure to use barrel nut wrench in manner shown could result in equipment damage.

   d. Using barrel nut wrench and 1/2-inch drive ratchet turning CCW, remove barrel nut (Figure 19).



Figure 19. Removing Barrel Nut.

e. Remove barrel from upper receiver (Figure 20).



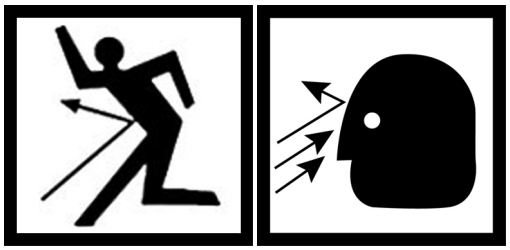
Figure 20. Removing Barrel.

f. Remove bolt-up plate from upper receiver (Figure 21).



Figure 21. Removing Bolt-Up Plate.

WARNING



Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

With barrel removed, ejector port cover headless grooved pin may be withdrawn forward (towards muzzle) without removing C-clip. For removal of ejector port cover with barrel installed, proceed with removal of C-clip.

Headless grooved pin may bind against forward assist housing requiring additional force to remove.

9. Disassemble ejector port cover assembly; using scribe or needlenose pliers, remove C-clip. Control ejection port cover and spring to prevent loss as headless grooved pin is withdrawn. Grasp ejection port cover and spring. Slide headless grooved pin rearward and remove (Figure 22).



Figure 22. Removing C-Clip and Headless Grooved Pin.

10. Disassemble forward assist assembly.

    a. Using ball peen hammer and 3/32-inch drive pin punch, apply slight pressure to forward assist, remove and discard spring pin (Figure 23).



Figure 23. Removing Spring Pin.

    b. Remove forward assist assembly and forward assist spring from receiver.

    c. Remove spring from forward assist (Figure 24).

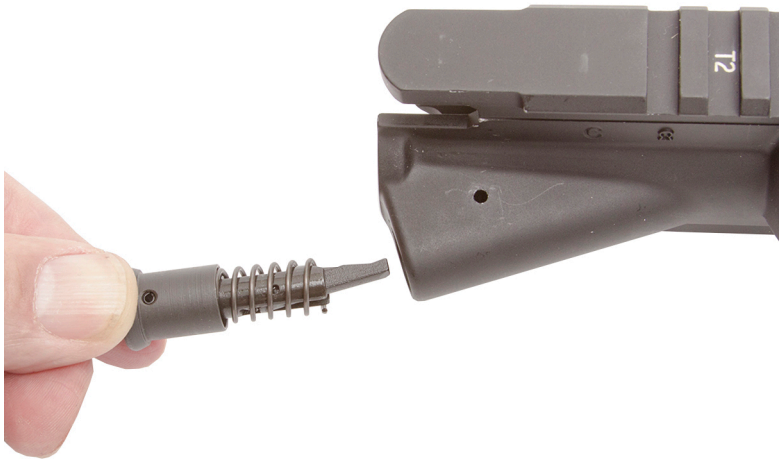


Figure 24. Removing Forward Assist Assembly and Forward Assist Spring.

END OF TASK

INSPECTION

1. Inspect upper and lower rail.

    a. Inspect lower rail for cracks, deformities, and unusual wear. Replace when worn or damaged.

NOTE

Two spare attachment screws located at front of rail are replacement screws.

    b. Inspect lower rail attachment screws for cracks, or deformities. Replace when required.

    c. Tighten attachment screws or replace lower rail when required.

    d. Inspect upper rail for cracks, deformities, and unusual wear. Replace when worn or damaged.

    e. Inspect RIS II rails for deformities and straightness. Replace when damaged.

    f. Inspect alignment of rail system to receiver. Replace rail when damaged or fails to align to receiver.

    g. Inspect bolt-up plate and capscrews. Tighten when loose or replace when missing, damaged or out of round.

2. Inspect gas block.

    a. Inspect gas block for cracks, deformities, and unusual wear. Replace when required.

    b. Ensure gas block setscrews are present and recessed. Tighten or replace when required.

3. Inspect forward sling mount.

    a. Inspect sling mount for cracks or deformities. Replace when required.

    b. Ensure socket head capscrews are present and tight. Tighten or replace when required.

4. Inspect front and rear BIS.

NOTE

Repairs shall not be performed to front and rear BIS. Front and rear BIS assembly shall be replaced when damaged or fails to operate as designed.

The following steps will be conducted after the BIS has been reinstalled.

    a. Ensure front and rear BIS will deploy and remains in place. Replace BIS when damaged or fails to function.

    b. Ensure front and rear BIS post rotates when detent is pushed down. Replace BIS when required.

5. Inspect receiver cartridge for any cracks, burrs, bulges, or deformation.

END OF TASK

NOTE

If converting to a Upper Receiver Group Improved (URG-I) variant, proceed to the corresponding Work Package (WP).

ASSEMBLY

1. Assembly forward assist assembly.

   a. Install forward assist spring onto forward assist assembly.

   b. Ensure forward assist pawl faces toward inside of receiver and insert into receiver (Figure 25).

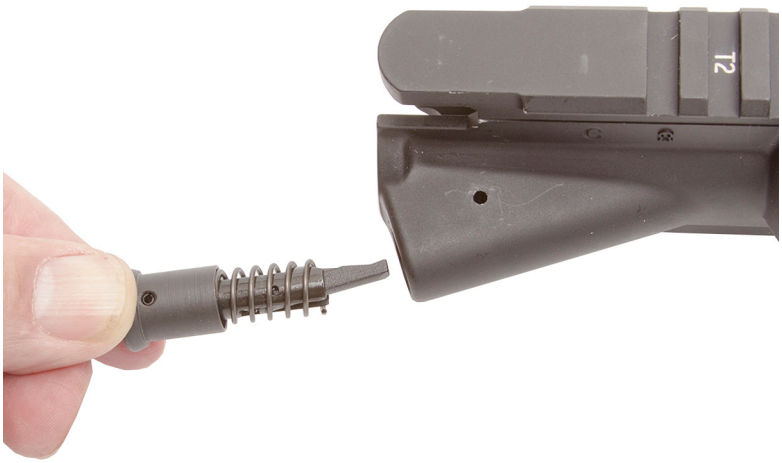


Figure 25. Assembling Forward Assist Assembly and Forward Assist Spring.

   c. Align forward assist with receiver holes. Using ball peen hammer and 3S roll pin holder, insert new spring pin into receiver hole (Figure 26).



Figure 26. Aligning Forward Assist.

d. Using ball peen hammer and 3/32-inch roll pin punch, drive spring pin flush with receiver (Figure 27).

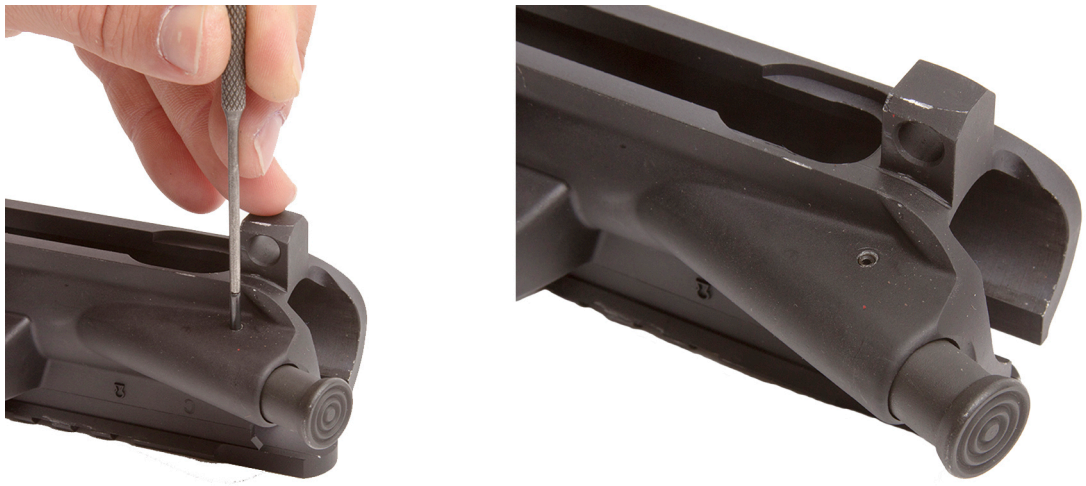


Figure 27. Driving Spring Pin Flush.

2. Assemble ejection port cover.

NOTE

With barrel removed, ejector port cover headless grooved pin may be installed from front with C-clip installed. For installation of ejector port cover with barrel installed, proceed to install headless grooved pin from rear without C-clip.

a. Install action rod in vise and tighten vise until action rod is secure.

b. Place URG on action rod in 12 o'clock position.

c. Position ejection port cover and cover spring on upper receiver with short leg of cover spring to rear on inside of ejection port cover.

d. Install headless grooved pin, groove end leading from back to front, halfway through spring (Figure 28).



Figure 28. Installing Headless Grooved Pin.

e. Hold cover spring short leg in this position, turning long leg (Figure 29, Item 1) of spring 1/2 turn clockwise (CW) creating tension in spring. Long leg of spring will be forward on inside of ejection port cover.

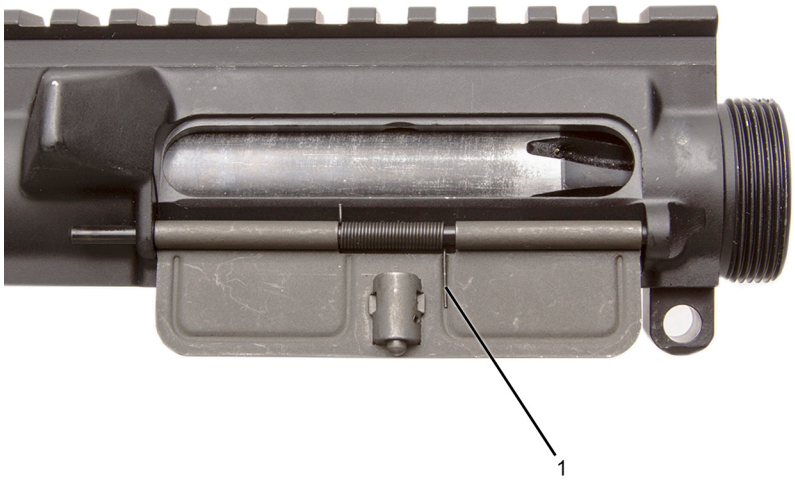


Figure 29. Long Leg of Cover Spring.

f. Hold spring in place and continue to push headless grooved cover pin until ejection port cover is secured to receiver (Figure 30).



Figure 30. Pushing Grooved Headless Cover Pin.

g. Using needlenose pliers, secure headless groove pin with C-clip (Figure 31).



Figure 31. Securing Headless Groove Pin.

3. Install bolt-up plate and barrel.

   a. Apply molybdenum disulfide grease to cartridge receiver threads and interior wall.

   b. Align bolt-up plate nodes with upper receiver rail (Figure 32).



Figure 32. Aligning Bolt-Up Nodes.

NOTE

Force may be required to insert barrel.

   c. Align barrel locating pin (Figure 33, Item 1) with slot in upper receiver.



Figure 33. Aligning Locating Pin and Slot.

   d. Apply molybdenum disulfide grease to barrel nut threads.

e. Install barrel nut onto barrel with small slots facing muzzle (Figure 34).



Figure 34. Installing Barrel Nut.

CAUTION

Use barrel nut wrench as shown below. Failure to use wrench in correct manner can result in equipment damage.

f. Using barrel nut wrench and 1/2-inch drive foot-pound (ft•lb) torque wrench, torque barrel nut to 55 ft•lb (Figure 35).



Figure 35. Torquing Barrel Nut.

4. Install gas tube and gas block.

   a. Place gas block in gas block/gas tube assembly block. Gas port side of gas block and large shoulder of assembly block must be on same side.

   b. With largest gas tube hole facing large opening in gas block, insert gas tube into gas block (Figure 36).



Figure 36. Gas Block/Gas Tube.

   c. Using small ball peen hammer and 2S roll pin holder, insert new gas block roll pin into hole.

   d. Using small ball peen hammer and 1/16-inch roll pin punch, drive gas block roll pin into gas block until flush on both sides (Figure 37).



Figure 37. Installing Gas Block Roll Pin.

e. Slide URG forward to disengage from action rod, rotate to 6 o'clock position, and reinstall on action rod (Figure 38).



Figure 38. Rotating URG to 6 O'clock Action Rod.

WARNING



Fire, vapor, and chemical hazard. Degreaser is flammable, toxic, and a skin irritant. Keep away from flame, use in well ventilated area, and wear protective gloves and face shield. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

f. Using clean cloth and degreaser, remove oil. Lubricant from gas port end of barrel.

g. Slide gas block/gas tube assembly onto barrel. Ensure gas tube enters upper receiver gas block through hole in bolt-up plate (Figure 39).



Figure 39. Installing Gas Block/Gas Tube Assembly.

NOTE

Gas block should slide freely until making contact with barrel shoulder.

h. Insert setscrew into forward setscrew hole of gas block (Figure 40).

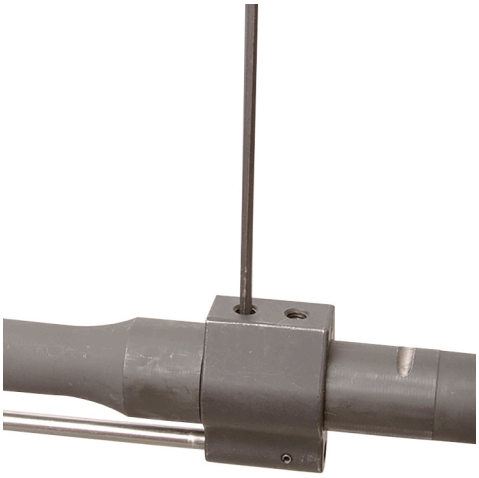


Figure 40. Seating Setscrew.

i. Apply one drop of Loctite® 243 into rear setscrew hole and insert setscrew.

j. Using 3/32-inch hex wrench, tighten rear setscrew (Figure 41).



Figure 41. Tightening Rear Setscrew.

k. Using 1/4-inch drive inch-pound (in-lb) torque wrench and 3/32-inch hex head socket, torque rear setscrew to 25 in-lb (Figure 42).



Figure 42. Torquing Rear Setscrew.

l. Using 3/32-inch hex wrench, remove forward setscrew (Figure 43).



Figure 43. Removing Forward Setscrew.

m. Apply one drop of Loctite® 243 into forward setscrew hole and insert setscrew.

n. Using 3/32-inch hex wrench, tighten forward setscrew hand-tight (Figure 44).



Figure 44. Tightening Forward Setscrew.

o. Using 1/4-inch drive in-lb torque wrench and 3/32-inch hex head socket, torque forward setscrew to 25 in-lb (Figure 45).



Figure 45. Torquing Forward Setscrew.

NOTE

For 14.5-inch RIS II URG, RIS II upper rail step 8 must be installed prior to installing FMBS-C flash hider step 5.

For 10.3-inch RIS II URG, FMBS-C flash hider step 8 may be installed prior to install of RIS II upper rail step 5.

5. Install RIS II upper rail.

   a. Remove action rod and URG from vise.

   b. Place rail assembly block in vise.

   c. Slide URG into rail assembly block. Do not tighten vise (Figure 46).



Figure 46. URG/Rail Assembly Block.

NOTE

Upper rail should slide against upper receiver and bolt-up plate.

d. Slide upper rail over barrel and align with rail assembly block (Figure 47).



Figure 47. Aligning Rail Reassembly.

e. Apply one drop of Loctite® 243 to four long #10-32 socket head capscrews and install in the 2, 3, 9, and 10 o'clock screw holes from rear of bolt-up plate hand-tight (Figure 48).



Figure 48. Installing Four Socket Head Capscrews.

f. Apply one drop of Loctite® 243 to two short #10-32 socket head capscrews and install in the 4 and 8 o'clock receiver holes from front of bolt-up plate hand-tight (Figure 49).



Figure 49. Installing Two Socket Head Capscrews.

CAUTION

Do not over-tighten screws. Damage may occur to screw holes. When screws do not tighten and stop, threads have been damaged and rail component must be replaced. Failure to observe this caution could result in equipment damage.

NOTE

Tightening six socket head capscrews in an alternating pattern will maintain alignment when screws are tightened. Loosening and retightening vise to reseat upper receiver in rail alignment block is recommended after tightening each screw to ensure rail system maintains alignment and screws are torqued properly.

g. Using 1/4-inch drive in-lb torque wrench and 5/32-inch hex head socket, torque six screws in alternating pattern to 30 in-lb.

h. Verify rail system is aligned with receiver using rail assembly block. Ensure barrel is centered in upper rail.

i. If rails do not align, disassemble rail system and reinstall.

6. Install RIS II lower rail.

NOTE

Use of vise is optional for installation of RIS II lower rail.

a. With slotted end facing towards muzzle, align lower rail with upper rail (Figure 50).



Figure 50. Aligning Lower Rail.

NOTE

RIS II upper rail holds two spare #10-32 flathead slotted screws in forward most position. These holes are for spare screws only and do not secure RIS II lower rail.

b. After applying Loctite® 243, insert four #10-32 flathead slotted screws and four washers into left and right side screw holes.

CAUTION

Do not over-tighten screws. Damage may occur to threads. If damage occurs, rail must be replaced.

c. Using flat-tip screwdriver, tighten screws (Figure 51).



Figure 51. Tightening Screws.

7. Install front BIS.

NOTE

Ensure rail clamp nut is flush with rail. Loctite® 243 may be used on front BIS threads.

a. Install front BIS on top rail as close to muzzle as possible (T38 position on top rail).

b. Using flat-tip screwdriver, tighten front BIS screw (Figure 52).



Figure 52. Installing Front BIS Front Sight.

8. Install FMBS-C flash hider.

   a. Remove RIS II URG and rail assembly block from vise.

   b. Place action rod in vise.

   c. Tighten vise until action rod is secure.

CAUTION

Failure to fully seat barrel extension lugs onto action rod could result in damage to equipment and/or tools.

   d. Place RIS II URG onto action rod.

NOTE

Ensure barrel threads are clear of Rocksett using degreaser and wire brush.

Removal and installation of FMBS-C flash hider may be performed several times to add or remove shims to ensure proper alignment of FMBS-C flash hider and barrel.

   e. Using clean cloth and degreaser, clean barrel and FMBS-C flash hider threads.

   f. Install spacer (Figure 53) on barrel with beveled side facing barrel shoulder.

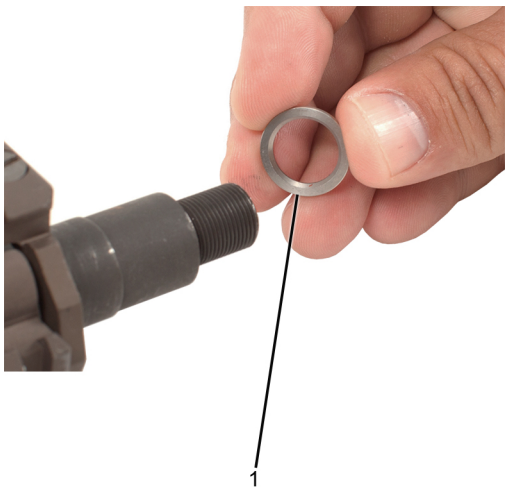


Figure 53. Installing Spacer.

g. Install FMBS-C flash hider on barrel hand-tight (Figure 54).



Figure 54. Installing FMBS-C Flash Hider.

h. Check adapter index tab (Figure 55, Item 1) position.

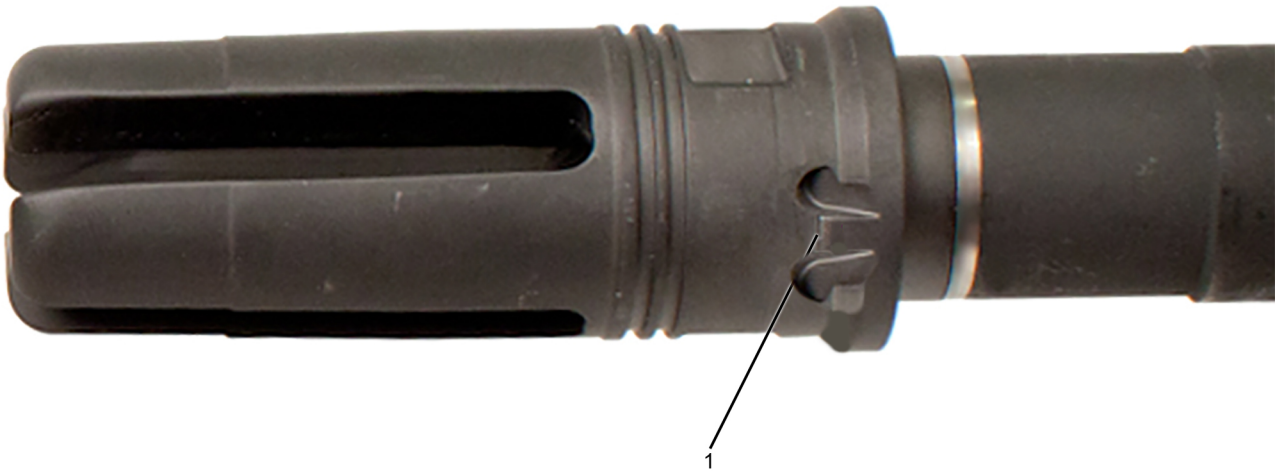


Figure 55. Adapter Index Tab.

NOTE

Index tab is properly aligned at the 6 o'clock position after torque values have been applied.

When index tab is between lines, select previous CCW line shim color(s). When index tab is between 6 o'clock position and starting torque location, shims are not required.

i. Using timing wheel selection chart, select shim(s) for flash hider alignment from shim set thickness chart (Figure 56).

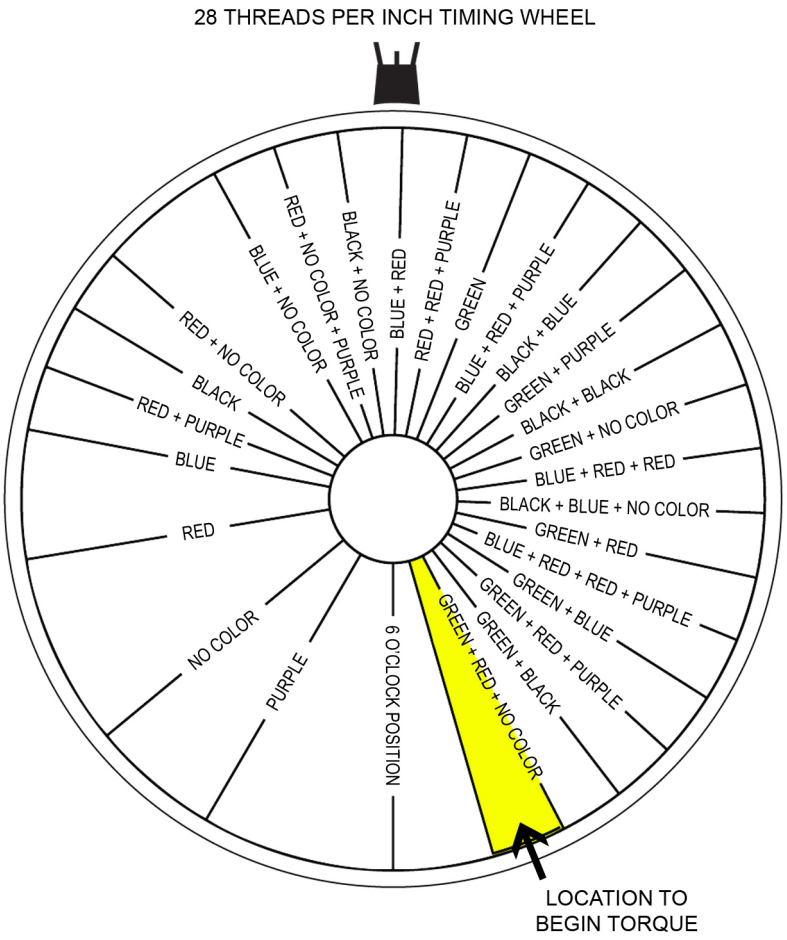


Figure 56. Timing Wheel Selection Chart.

Color	Purple	None	Red	Blue	Black	Green
Thickness	.003	.005	.008	.010	.012	.020

Figure 57. Shim Set Thickness Chart.

j. Remove FMBS-C flash hider from barrel.

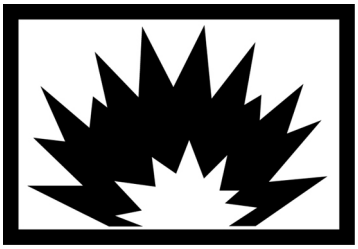
k. Install selected shim(s) on barrel.

l. Install FMBS-C flash hider on barrel and turn until hand-tight.

m. Complete step h through step l until FMBS-C flash hider index tab is positioned at location to begin torque as indicated Figure 56.

n. Remove FMBS-C flash hider from barrel.

WARNING

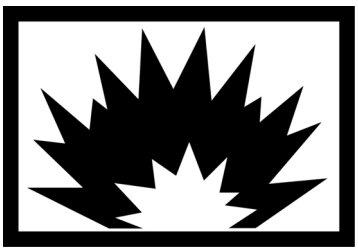


Explosion hazard. Rocksett shall be applied only to barrel and FMBS-C flash hider threads. Rocksett entering weapon bore could cause a bore obstruction and increase barrel pressure. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment.

o. Apply two drops of Rocksett to barrel threads.

p. Install FMBS-C flash hider on barrel and turn until hand-tight.

WARNING



Explosion hazard. Torquing FMBS-C flash hider beyond 30 ft•lb could cause a bore constriction to occur. Manufacturer recommended pressures could be exceeded causing bore to explode. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

q. Using combination wrench M4A1 and 1/2-inch drive ft•lb torque wrench, torque FMBS-C flash hider to 20-30 ft•lb.

r. Verify adapter index tab is positioned bottom dead center.

s. Keep URG in warn/dry environment for 24 hours to cure Rocksett.

9. Install forward sling mount.

   a. Slide forward sling mount (Figure 58) onto RIS II rail in desired location.



Figure 58. Installing Sling Mount.

   b. Insert two socket head capscrews into top forward sling mount.

   c. Using 7/64-inch hex wrench, tighten socket head capscrews (Figure 59).



Figure 59. Installing Sling Mount Socket Head Capscrews.

10. Perform headspace and bore straightness gauging In Accordance With (IAW) WP 0023.

11. Function fire re-barreled weapon.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

11.5 UPPER RECEIVER GROUP IMPROVED (URG-I) BARREL ASSEMBLY RECEIVER MAINTENANCE

INITIAL SETUP:

Tools
- 1/16-inch Drive Pin Punch (WP 0062, Item 10)
- Scribe (WP 0062, Item 19)
- Vise (WP 0062, Item 21)
- T30 Torx Bit (WP 0062, Item 15)
- 1/2-inch Drive Ratchet Wrench (WP 0062, Item 11)
- Armorer's Hammer (WP 0062, Item 3)
- 1/8-inch Punch (WP 0062, Item 10)
- Needlenose Pliers (WP 0062, Item 8)
- 3/32-inch Drive Pin Punch (WP 0062, Item 10)
- 1/8-inch Hex Key (WP 0062, Item 7)
- 5/16-inch Open End Wrench (WP 0062, Item 22)
- 3S Roll Pin Holder (WP 0062, Item 13)
- 3/32-inch Roll Pin Holder (WP 0062, Item 10)
- 5/64-inch Hex Wrench (WP 0062, Item 7)
- 1/2-inch Drive Torque Wrench (WP 0062, Item 23)
- Heat Gun (WP 0062, Item 5)
- Propane Tank (WP 0062, Item 9)
- 2S Roll Pin Holder (WP 0062, Item 13)

Special Tools
- URG-I Barrel Nut Wrench (WP 0057, Item 18)
- Armorer's Block (WP 0057, Item 9)
- Action Rod (WP 0057, Item 14)
- Rail Alignment Block (WP 0057, Item 17)
- Gas Tube Assembly Fixture (WP 0057, Item 10)
- M4A1 Combination Wrench (WP 0057, Item 6)

Materials
- Molybdenum Disulfide Grease (WP 0061, Item 20)
- Acetone (WP 0061, Item 1)
- Rocksett (WP 0061, Item 28)
- Wiping Rag (WP 0061, Item 27)
- CLP (WP 0061, Item 9)
- Nylon Brush (WP 0061, Item 7)
- Loctite® 243 (WP 0061, Item 29)
- Cotton Swab (WP 0061, Item 30)

Mandatory Replacement Parts
- FMBS-C (WP 0063, Item 4)
- Spring Pin (WP 0063, Item 1)
- Gas Block Roll Pin (WP 0063, Item 2)
- C-Clip (WP 0063, Item 3)

Personnel Required
- Qualified Armorer (1)

References
- WP 0021
- WP 0022
- WP 0023

Equipment Condition
- Weapon fieldstripped (WP 0012)

URG-I DISASSEMBLY

CAUTION

Shoulder of action rod has to be against vise jaws. Failure to observe this caution could result in equipment damage.

1. Place action rod (Figure 1, Item 1) in vise with shoulder touching side of vise jaws.

2. Tighten vise until action rod is secure.

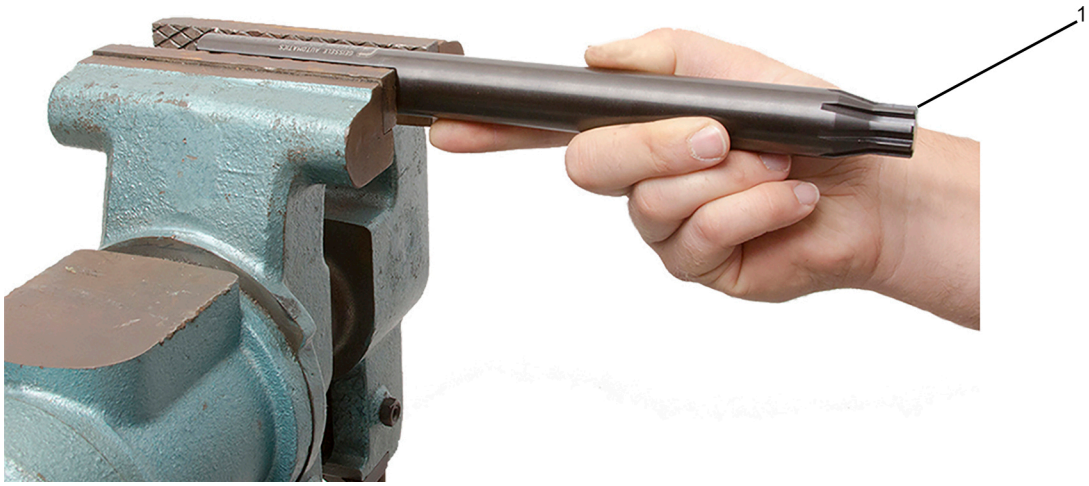


Figure 1. Placing Action Rod in Vise.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur. Ensure that the forward assist is not making contact with vise.Failure to observe this caution could result in equipment damage.

3. Install upper receiver assembly on action rod in the 12 o'clock position.

END OF TASK

HANDGUARD REMOVAL

NOTE

The flash hider can be removed before removing handguard. It is not necessary to remove handguard if end goal is to remove and replace flash hider.

1. Using 5/64-inch hex wrench, loosen two rail alignment setscrews (Figure 2, Item 1) until a minimum of three threads are visible. If necessary, setscrews can be removed completely. Inspect rail alignment setscrews to ensure threads are free of any debris. Debris can be removed using nylon brush.

NOTE

Notice the interface between upper receiver and handguard.

URG-I can be rotated on action rod to allow for better access to hardware.

2. Using T30 Torx bit and bit driver, loosen two retaining rail mounting bolts (Figure 2, Item 1) and pull outward to RETRACTED position.

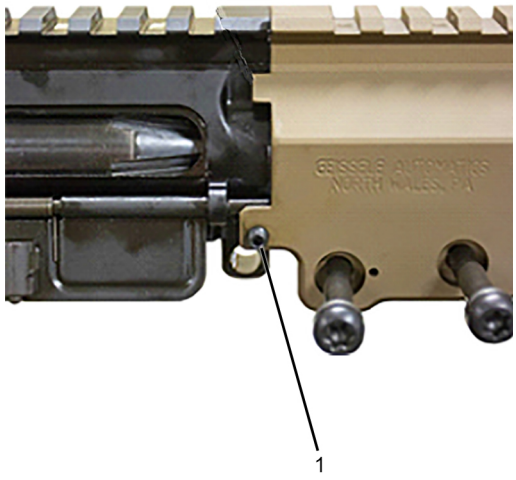


Figure 2. Removing Retaining Rail Mounting Bolts.

3. Remove handguard (Figure 3).

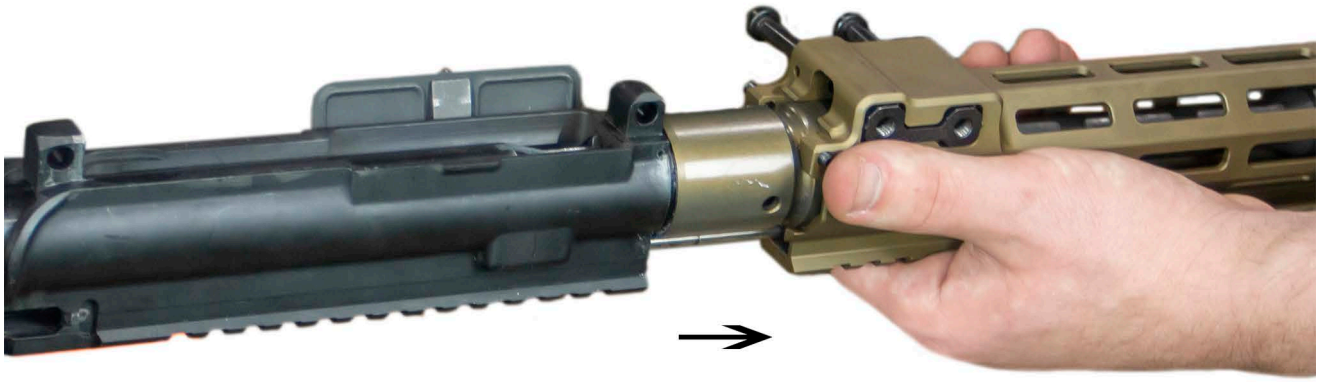


Figure 3. Removing Handguard from URG-I.

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in handguard damage.

END OF TASK

FLASH HIDER REMOVAL

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

1. With the URG still locked into action rod fixture, remove flash hider using combination wrench (M4A1) and 1/2-inch drive ratchet wrench (Figure 4, Item 1). Remove shims and spacer and dispose In Accordance With (IAW) local procedures.



Figure 4. Removing Flash Hider.

WARNING



Burn hazard. Family Muzzle Brake Suppressor Carbine (FMBS-C) flash hider and barrel can be hot. Keep hands clear of hot parts and use heat resistant gloves. Wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Heat shall be applied only to FMBS-C flash hider. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

When FMBS-C flash hider cannot be removed from barrel, remove and replace barrel assembly. Heat removal is not the best method to remove Rocksett. Soaking the muzzle end of the weapon in warm water for a minimum of 20 minutes should allow for the Rocksett to break free.

2. If necessary, use heat gun or propane torch to heat FMBS-C flash hider (Figure 5).



Figure 5. Heating FMBS-C Flash Hider.

END OF TASK

BARREL ASSEMBLY REMOVAL

CAUTION

If URG-I barrel nut wrench is not properly assembled damage to equipment may occur.

NOTE

If URG-I barrel nut wrench is not used in proper orientation demonstrated below, equipment damage may occur. Correct orientation is left graphic below and incorrect orientation is right graphic below.

It may be necessary to rotate weapon on action rod to allow for wrench to interface with barrel nut.

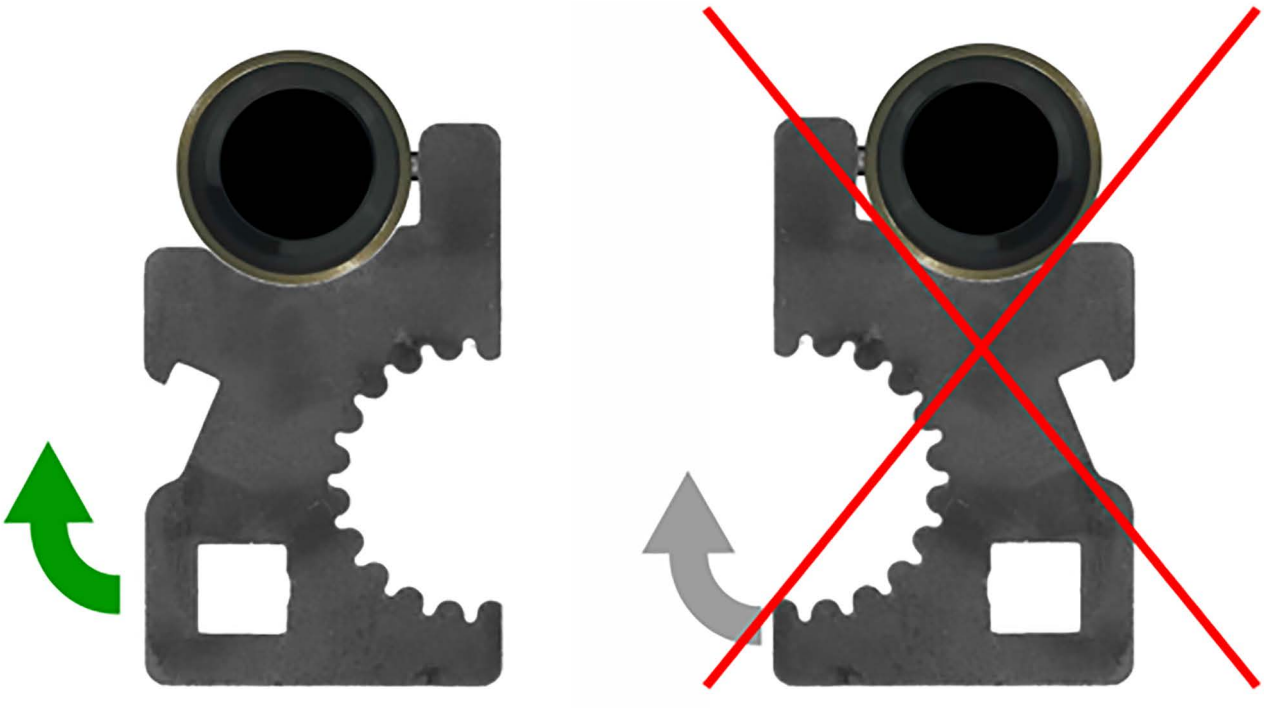


Figure 6. Utilizing Barrel Nut Wrench.

1. Using URG-I barrel nut wrench and 1/2-inch drive ratchet wrench, remove barrel nut by applying counterclockwise (CCW) torque (Figure 7).



Figure 7. Removing Barrel Nut.

2. Loosen barrel nut by hand and remove barrel assembly from upper receiver cartridge.

END OF TASK

BARREL ASSEMBLY DISASSEMBLY

1. Set barrel assembly on top of armorers block (Figure 8).



Figure 8. Barrel Assembly.

2. Using 1/8-inch punch and armorer's hammer, punch out taper pin holding gas block onto barrel and remove gas block and gas tube assembly (Figure 9).



Figure 9. Removing Gas Block and Gas Tube.

NOTE

If gas tube assembly fixture is not available, a standard armorer's block is acceptable.

3. Remove gas tube and gas block from barrel and place onto gas tube assembly fixture.

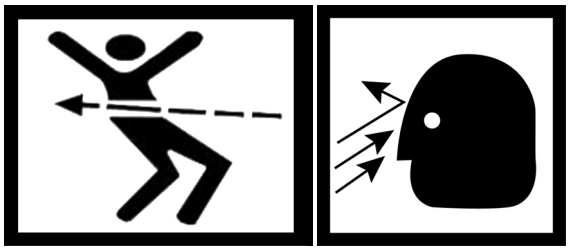
4. Using 1/16-inch punch and armorer's hammer, hammer out the spring pin holding gas tube in gas block (Figure 10). Dispose of gas tube and gas block IAW local procedures.



Figure 10. Hammering Out Spring Pin.

5. Remove barrel nut.

WARNING



Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

With barrel removed, ejector port cover headless grooved pin may be withdrawn forward (towards muzzle) without removing the C-clip. For removal of ejector port cover with barrel installed, proceed with removal of the C-clip.

When removing with handguard still installed, headless grooved pin may bind against forward assist housing requiring additional force to remove.

6. Disassemble ejector port cover assembly; using scribe or needlenose pliers, remove ejection port cover and C-clip. Control ejection port cover and spring to prevent loss as headless grooved pin is withdrawn. Grasp ejection port cover and spring. Slide headless grooved pin rearward and remove (Figure 11). Dispose of C-clip IAW local procedures.



Figure 11. Removing C-clip and Headless Grooved Pin.

7. Disassemble forward assist assembly.

a. Using hammer and 3/32-inch drive pin punch, remove and dispose of spring pin IAW local procedures (Figure 12).



Figure 12. Removing Spring Pin.

b. Remove forward assist assembly and forward assist spring from receiver.

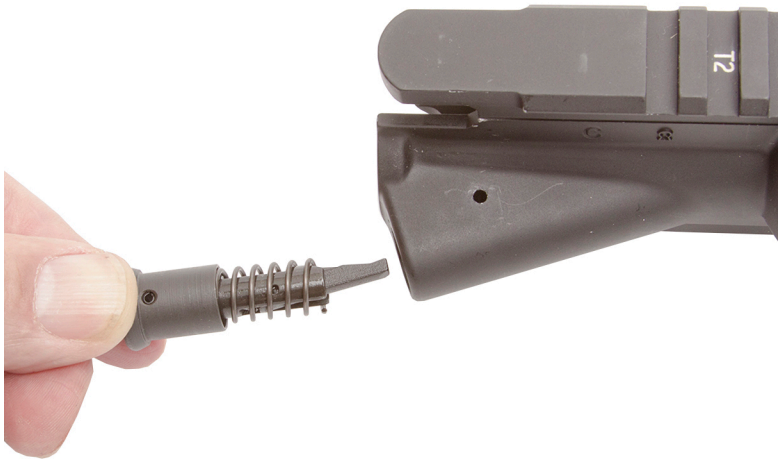


Figure 13. Removing Forward Assist Assembly and Forward Assist Spring.

c. Remove spring from forward assist (Figure 13). Dispose of spring IAW local procedures.

END OF TASK

INSPECTION

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in handguard damage.

1. Inspect handguard.
    a. Inspect handguard for cracks, deformities, and unusual wear. Replace as required.
    b. Inspect that attachment screws are not stripped or cracked.
    c. Inspect rails and Modular Lock (M-LOK) slots for deformities and straightness.
2. Inspect gas block, barrel, and flash hider.
    a. Inspect gas block for cracks, deformities, and unusual wear.
    b. When installed, ensure gas block taper pin is present and recessed.
    c. The gas block and barrel are matched, therefore replace entire assembly as required.
    d. Inspect barrel for cracks, deformities, and unusual wear. Replace when required.
    e. Inspect muzzle threads to ensure they are not damaged.

NOTE

Gaging is required pre-deployment, as needed, and annually.

END OF TASK

ASSEMBLY

NOTE

If converting a M4/MK18 variant into a URG-I, and disassembly procedure is already complete, start with assembly section of with Work Package (WP). If not, proceed to appropriate WP supporting document for disassembly procedure for that variant.

1. Place armorer's block onto work surface and place upper receiver cartridge onto armorer's block.

2. Assemble forward assist assembly.

   a. Install forward assist spring onto forward assist assembly.

   b. Ensure forward assist pawl faces toward inside of receiver and insert into receiver (Figure 14).

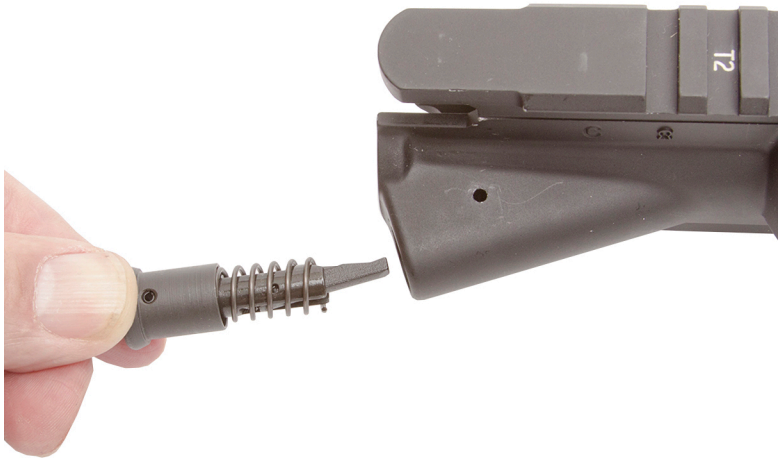


Figure 14. Assembling Forward Assist Assembly and Forward Assist Spring.

c. Align forward assist with receiver holes. Using armorer's hammer and 3S spring pin holder, insert new spring pin into receiver hole (Figure 15).



Figure 15. Aligning Forward Assist.

d. Using armorers hammer and 3/32-inch roll pin punch, drive spring pin flush with receiver (Figure 16).

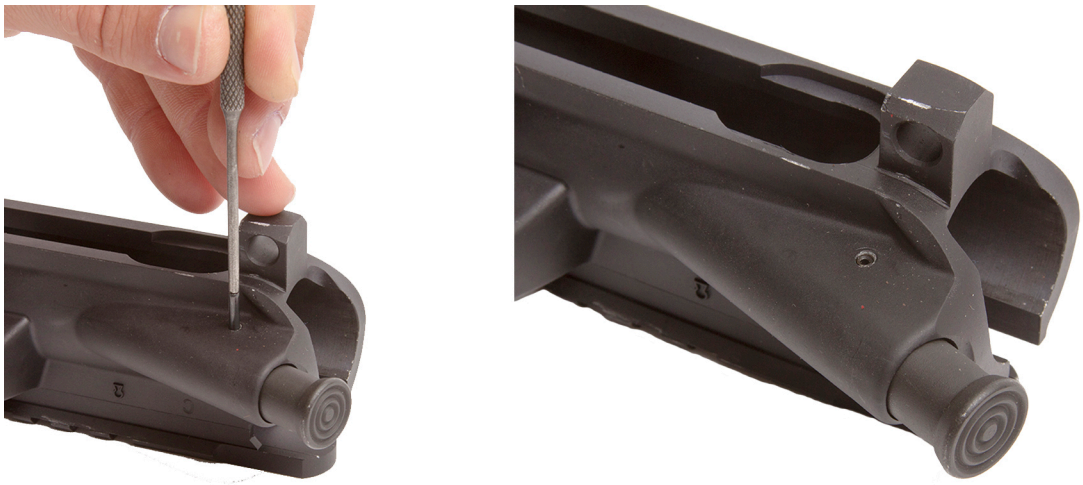


Figure 16. Driving Spring Pin Flush.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

3. Install action rod into vise.

NOTE

Step 4 can be completed using an armorer's block or action rod as a fixture.

4. Install upper receiver cartridge on action rod.

5. Assemble ejection port cover.

NOTE

With barrel removed, ejector port cover headless grooved pin may be installed from front with C-clip installed. For installation of ejector port cover with barrel installed, proceed to install headless grooved pin from rear without C-clip.

a. Position ejection port cover and cover spring on upper receiver with short leg of cover spring to rear on inside of ejection port cover.

b. Install headless grooved pin, groove end leading from back to front, halfway through spring (Figure 17).



Figure 17. Installing Headless Grooved Pin.

c. Hold cover spring short leg in this position, turning long leg (Figure 18, Item 1) of spring 1/2 turn clockwise (CW) from front of weapon creating tension in spring. Long leg of spring will be forward on inside of ejection port cover. Once this procedure is complete, upper receiver cartridge should resemble Figure 18.

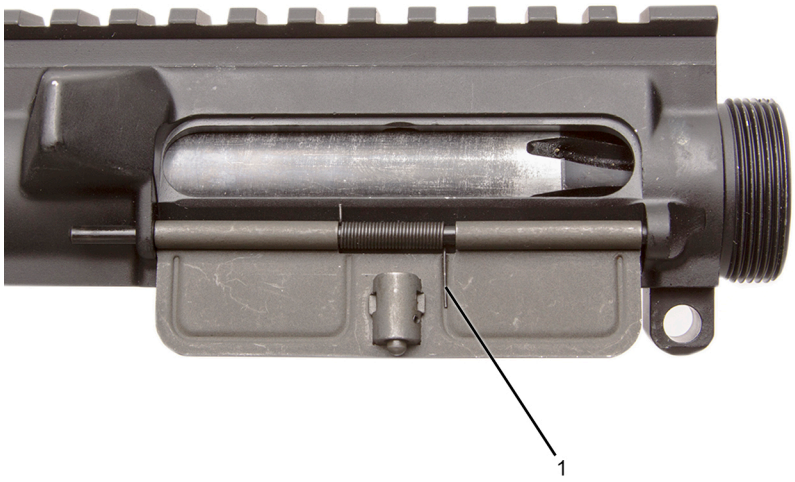


Figure 18. Long Leg of Cover Spring.

d. Hold spring in place and continue to push headless grooved cover pin until ejection port cover is secured to receiver (Figure 19).



Figure 19. Pushing Grooved Headless Cover Pin.

e. Using needlenose pliers, secure headless groove pin with C-clip (Figure 20).



Figure 20. Securing Headless Groove Pin.

END OF TASK

INSTALLATION OF 11.5- INCH URG-I BARREL

NOTE

Force may be required to insert barrel.

1. Apply a light coat of molybdenum disulfide grease to threads on upper receiver cartridge using a cotton swab (Figure 21).



Figure 21. Applying Molybdenum Disulfide Grease.

2. Install 11.5-inch URG-I barrel on upper receiver assembly.

a. Align barrel locating pin with slot in upper receiver cartridge (Figure 22).

b. Fully insert barrel with shoulder of barrel extension seated against upper receiver cartridge.



Figure 22. Aligning Barrel and Gas Block Assembly with Upper Receiver Cartridge.

3. Slide barrel nut onto upper receiver assembly threads and hand tighten (Figure 23).



Figure 23. Installing Barrel Nut.

CAUTION

Failure to use barrel nut wrench in correct manner can result in damage to tool or equipment.

4. Using URG-I barrel nut wrench (Figure 25) and 1/2-inch drive foot-pound (ft•lb) torque wrench, torque barrel nut to 50 ft•lb (Figure 24).

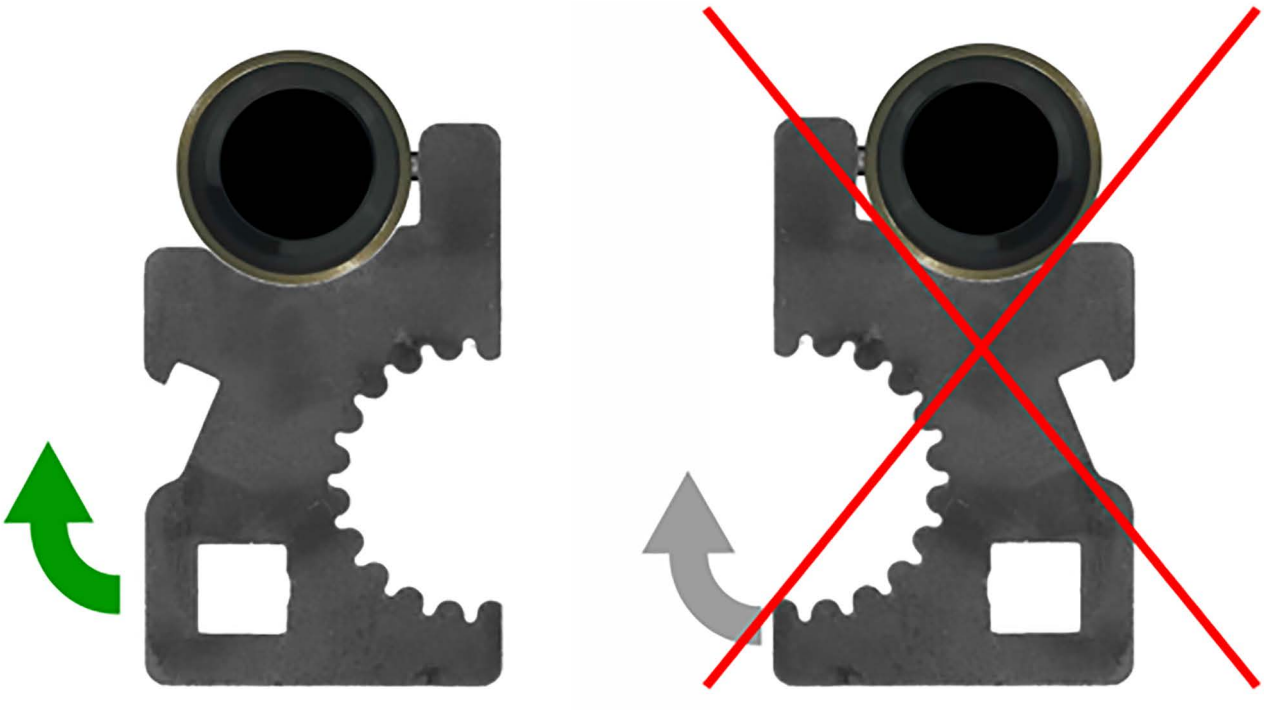


Figure 24. Utilizing Barrel Nut Wrench.

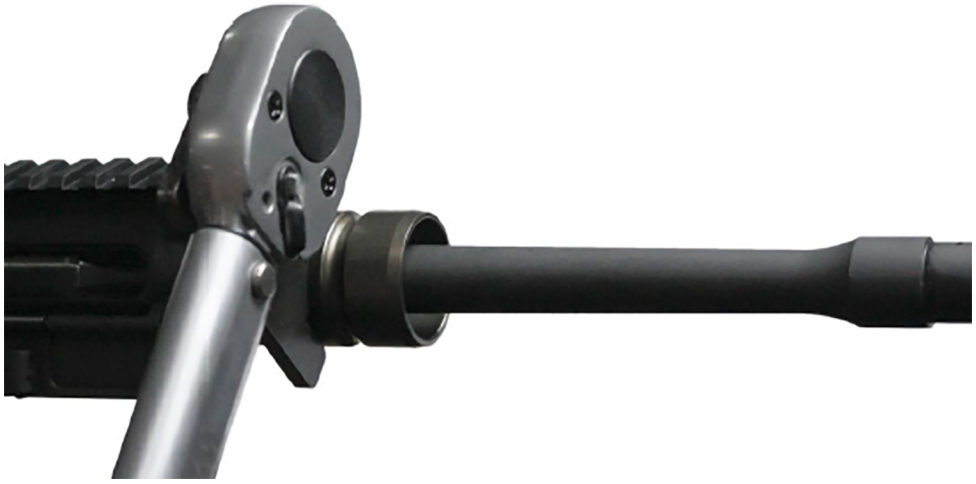


Figure 25. Torquing Barrel Nut.

5. Install gas tube back into gas block.

    a. Ensure gas tube port is facing toward gas port in barrel.

    b. Place gas tube and gas block assembly onto armorer's block.

    c. Using 2S spring pin holder and armorer's hammer, begin driving gas tube spring pin into gas block (Figure 26).

    d. Using 1/8-inch straight punch and armorer's hammer, drive spring pin into gas block until flush.



Figure 26. URG-I Barrel and Gas Block Assembly.

6. Slide gas block and gas tube assembly onto barrel.

7. Align gas tube with gas tube hole in upper receiver cartridge.

8. Slide gas tube assembly until gas block is flush with the shoulder of barrel (Figure 27).



Figure 27. Installing Gas Tube Assembly.

9. Remove barreled upper receiver cartridge from action rod.

10. Place gas block section of the barreled upper receiver cartridge onto gas block assembly fixture.

NOTE

Ensure pin holes are properly aligned.

11. Using 1/8-inch straight punch and armorer's hammer, drive taper pin into gas block (Figure 28).



Figure 28. Installing Spring Pin.

END OF TASK

INSTALLATION OF URG-I HANDGUARD

1. Loosen two retained rail mounting bolts and pull outward to RETRACTED position (Figure 29).



Figure 29. Retracting Retained Rail Mounting Bolts.

2. Ensure two rail alignment setscrews (Figure 30, Item 1) are retracted until they no longer protrude inside handguard. Inspect rail alignment setscrews to ensure threads are free of any debris. Debris can be removed using nylon brush.

3. Affix barreled upper receiver cartridge onto action rod.

4. Lightly coat outer diameter of barrel nut and inner diameter of handguard with Cleaner, Lubricant and Preservative (CLP).

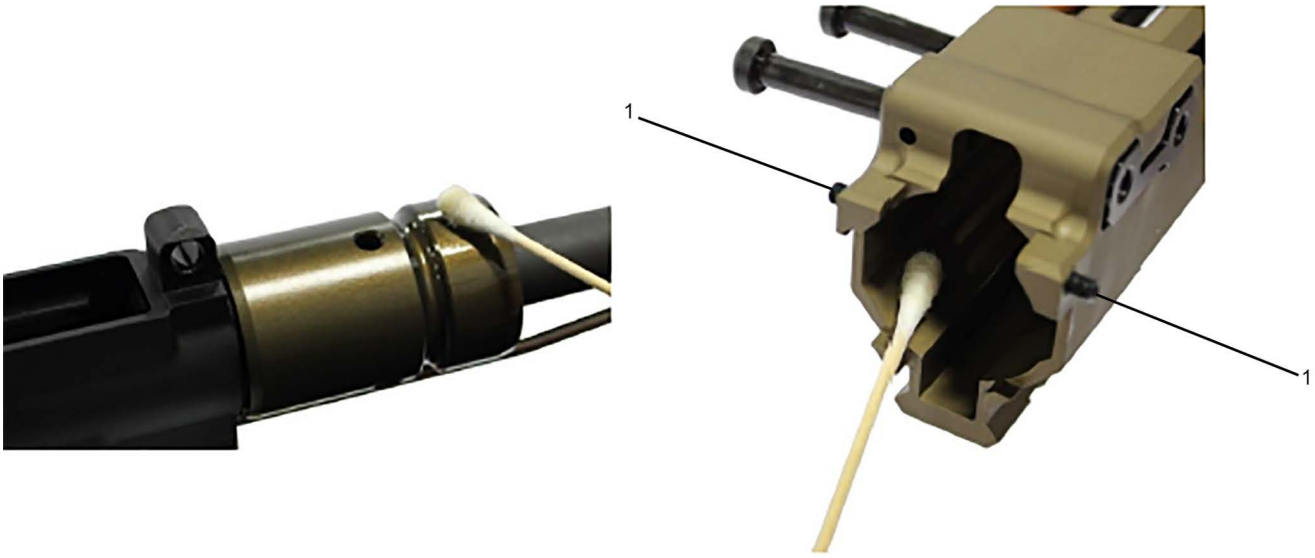


Figure 30. Coating Barrel Nut and Handguard.

5. Pull upper receiver assembly slightly forward until action rod is free from barrel extension. Rotate upper receiver assembly 180° and slide back onto action rod.

6. Align handguard with receiver and slide handguard over barrel until handguard contacts barrel nut (Figure 31).

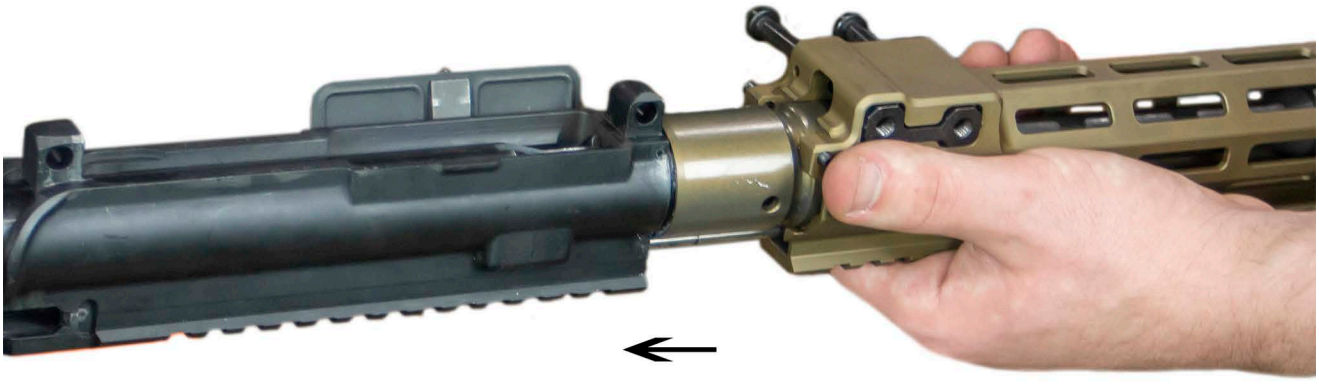


Figure 31. Aligning Handguard.

7. Slowly slide handguard over barrel nut while keeping handguard concentric with barrel to prevent binding, stopping short of engaging upper receiver cartridge (Figure 32).



Figure 32. Engaging Handguard over Barrel Nut.

8. Align rail alignment tabs (Figure 33, Item 1) on handguard to flats below the 12 o'clock rail on upper receiver cartridge. Continue to slide handguard over barrel nut until handguard is flush with upper receiver cartridge.

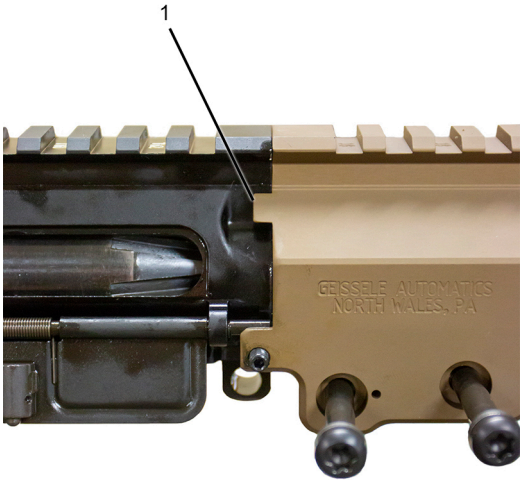


Figure 33. Rail Alignment Tabs.

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in damage to hangduard.

9. Insert retained rail mounting bolts until engaged with tandem press nut on reverse side. Slight movement of handguard may be necessary in order to line up holes with grooves in barrel nut (Figure 34).



Figure 34. Inserting Retained Rail Mounting Bolt.

10. Remove action rod and upper receiver from vise.

11. Place rail alignment block in vise.

12. Place URG into rail alignment block with handguard and upper receiver cartridge centered in alignment block. Tighten vise until URG is secure (Figure 35).

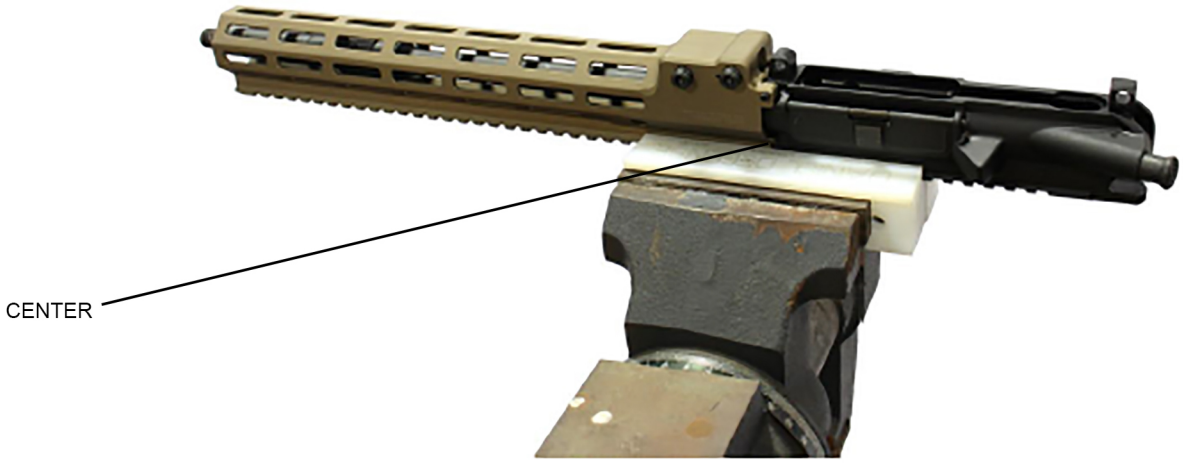


Figure 35. Placing URG into Rail Assembly Block.

13. Apply one drop of Loctite® 243 to cotton swab and apply to threads of each alignment screw. Using 5/64-inch hex wrench alternate tightening of both rail alignment setscrews until they contact upper receiver. Tighten to 1/4 turn (Figure 36).

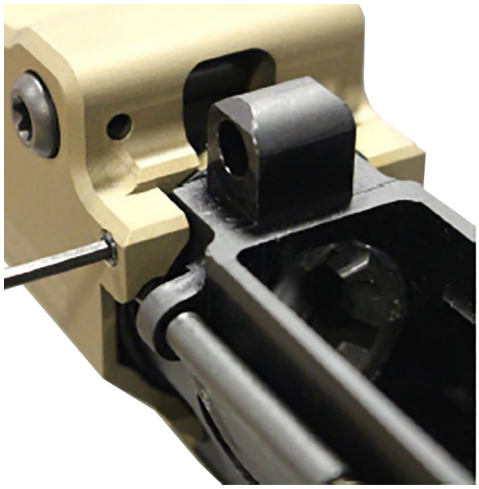


Figure 36. Tightening Rail Alignment Setscrews.

CAUTION

Over tightening of hardware may result in equipment damage.

14. Using T30 Torx bit and inch-pound (in-lb) torque wrench, tighten two rail mounting bolts to 84 in-lb (Figure 37).

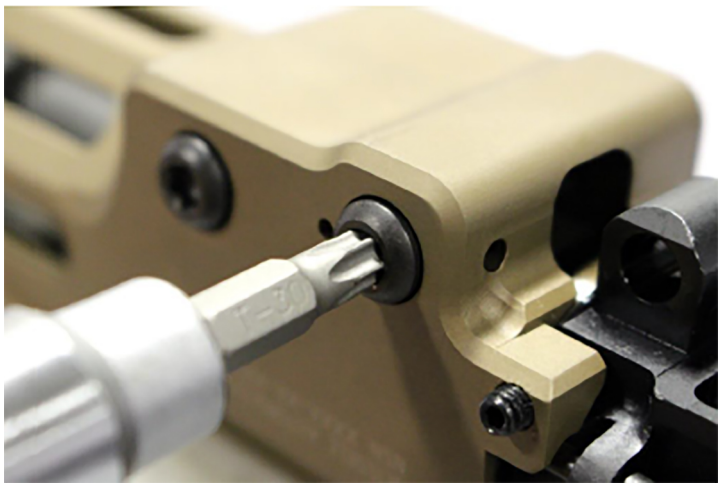


Figure 37. Tightening Rail Mounting Bolts.

15. Remove URG and rail alignment block from vise. Visually inspect that 12 o'clock rails on handguard and upper receiver cartridge are aligned.

16. If rails do not align, disassemble rail system and reinstall.

END OF TASK

INSTALL FMBS-C FLASH HIDER

CAUTION

Shoulder of action rod has to be against vise jaws. Failure to observe this caution could result in equipment damage.

1. Place action rod in vise with shoulder touching side of vise jaws.

2. Tighten vise until action rod is secure.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

3. Place URG onto action rod with rail of URG in 12 o'clock position.

4. Using clean cloth and acetone, clean barrel and FMBS-C flash hider threads.

5. Install spacer on barrel with beveled side facing barrel shoulder.

NOTE

Removal and installation of FMBS-C flash hider may be performed several times to add or remove shims to ensure proper alignment.

6. Install FMBS-C flash hider on barrel hand-tight (Figure 38).



Figure 38. Installing FMBS-C Flash Hider.

7. Check position of adapter index tab on flash hider (Figure 39, Item 1).

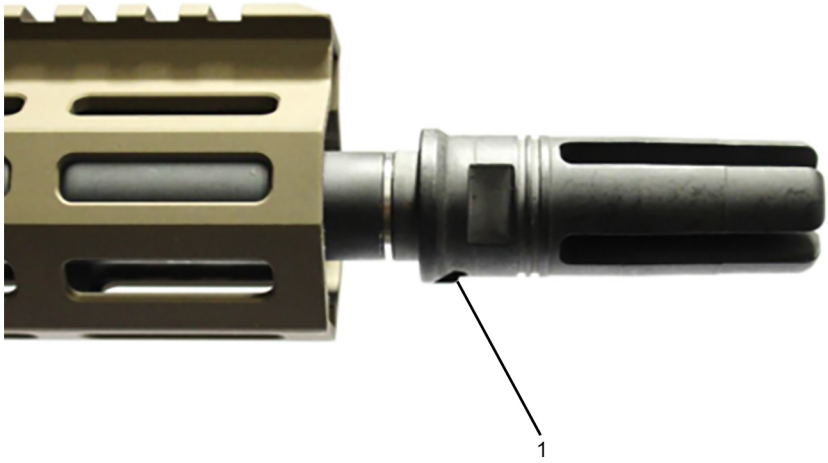


Figure 39. Adapter Index Tab.

NOTE

Index tab is properly aligned at 6 o'clock position after torque values have been applied.

When index tab is between lines, select previous CCW line shim color(s). When index tab is between 6 o'clock position and starting torque location, shims are not required.

8. Using timing wheel selection chart, select shim(s) for flash hider alignment from shim set thickness chart (Figure 40).

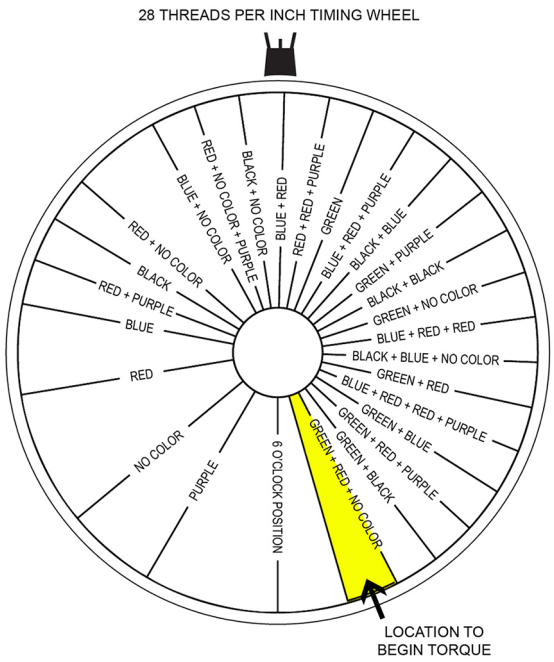


Figure 40. Timing Wheel Selection Chart.

9. Remove FMBS-C flash hider from barrel.

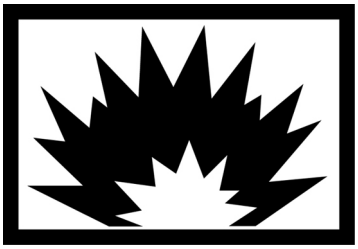
10. Install selected shim(s) on barrel.

11. Install FMBS-C flash hider on barrel and turn until hand-tight.

12. Repeat step 8 through step 11 until FMBS-C flash hider index tab is positioned at location to begin torque (Figure 40).

13. Remove FMBS-C flash hider from barrel.

WARNING

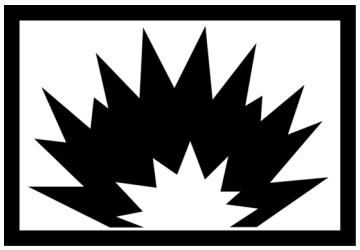


Explosion hazard. Rocksett shall be applied only to barrel and FMBS-C flash hider threads. Rocksett entering weapon bore could cause a bore obstruction and increase barrel pressure. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment damage.

14. Apply two drops of Rocksett to barrel threads.

15. Install FMBS-C flash hider on barrel and turn until hand-tight.

WARNING



Explosion hazard. Torquing FMBS-C flash hider beyond 30 ft•lb could cause bore constriction to occur. Manufacturer recommended pressures could be exceeded causing bore to explode. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

16. Using combination wrench (M4A1) and 1/2-inch drive ft•lb torque wrench, torque FMBS-C flash hider to 20-30 ft•lb (Figure 41) to align tab to 6 o'clock position.

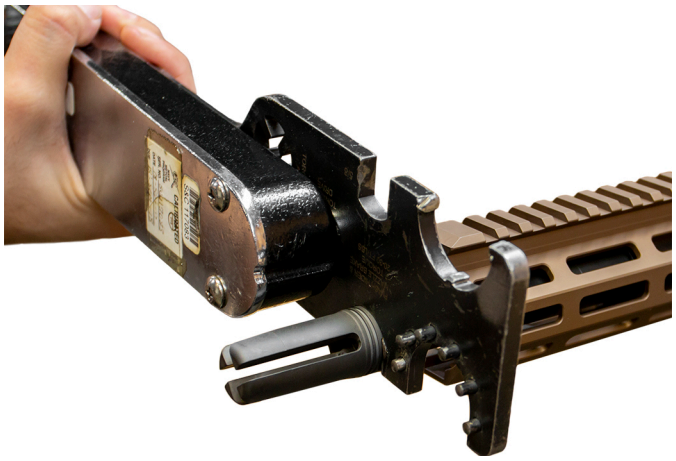


Figure 41. Torquing FMBS-C Flash Hider.

17. Verify adapter index tab is at the 6 o'clock position.

18. Keep URG in warm/dry environment for 24 hours to cure Rocksett.

19. Using ambidextrous charging handle, assemble from fieldstrip URG-I IAW WP 0021.

20. Perform headspace and bore straightness gauging IAW WP 0023.

21. Perform Safety/Function Check IAW WP 0022.

22. After first firing M4A1 with kit installed, use T30 bit to re-tighten rail mounting bolts to 84 in-lb. It can take a few cycles for press nut to fully seat in handguard.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

14.5 UPPER RECEIVER GROUP IMPROVED (URG-I) BARREL ASSEMBLY RECEIVER MAINTENANCE

INITIAL SETUP:

Tools
- 1/16-inch Drive Pin Punch (WP 0062, Item 10)
- Scribe (WP 0062, Item 19)
- Vise (WP 0062, Item 21)
- T30 Torx Bit (WP 0062, Item 15)
- 1/2-inch Drive Ratchet Wrench (WP 0062, Item 11)
- Armorer's Hammer (WP 0062, Item 3)
- 1/8-inch Punch (WP 0062, Item 10)
- Needlenose Pliers (WP 0062, Item 8)
- 3/32-inch Drive Pin Punch (WP 0062, Item 10)
- 1/8-inch Hex Key (WP 0062, Item 7)
- 5/16-inch Open End Wrench (WP 0062, Item 22)
- 3S Roll Pin Holder (WP 0062, Item 13)
- 3/32-inch Roll Pin Punch (WP 0062, Item 10)
- 5/64-inch Hex Bit (WP 0062, Item 7)
- 1/2-inch Drive ft•lb Torque Wrench (WP 0062, Item 24)
- Heat Gun (WP 0062, Item 5)
- Propane Tank (WP 0062, Item 9)
- 2S Roll Pin Holder (WP 0062, Item 13)

Special Tools
- Combination Wrench (WP 0057, Item 6)
- URG-I Barrel Nut Wrench (WP 0057, Item 18)
- Armorer's Block (WP 0057, Item 9)
- Action Rod (WP 0057, Item 14)
- Rail Alignment Fixture (WP 0057, Item 17)
- Gas Block Assembly Fixture (WP 0057, Item 10)

Materials
- Molybdenum Disulfide Grease (WP 0061, Item 20)
- Acetone (WP 0061, Item 1)
- Rocksett (WP 0061, Item 28)
- Wiping Rag (WP 0061, Item 27)
- CLP (WP 0061, Item 9)
- Nylon Brush (WP 0061, Item 7)
- Cotton Swab (WP 0061, Item 30)
- Loctite® 243 (WP 0061, Item 29)

Mandatory Replacement Parts
- FMBS-C (WP 0063, Item 4)
- Spring Pin (WP 0063, Item 1)
- Gas Block Roll Pin (WP 0063, Item 2)
- C-Clip (WP 0063, Item 3)

Personnel Required
- Qualified Armorer (1)

References
- WP 0021
- WP 0022
- WP 0023

Equipment Condition
- Weapon fieldstripped (WP 0012)

URG-I DISASSEMBLY

CAUTION

Shoulder of action rod must contact the vise jaws. Failure to observe this caution could result in equipment damage.

1. Place action rod in vise with shoulder touching side of vise jaws (Figure 1).

2. Tighten vise until action rod is secure.

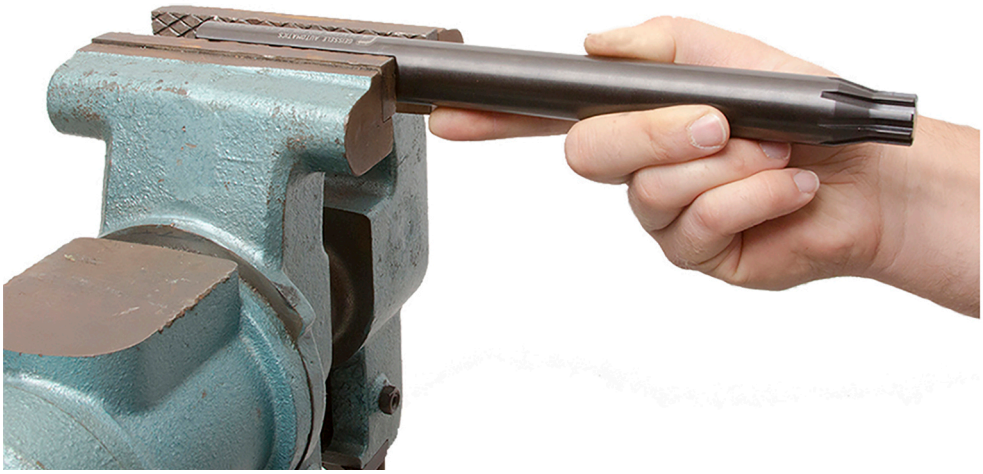


Figure 1. Placing Action Rod in Vise.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur. Ensure that the forward assist is not making contact with the vise. Failure to observe this caution could result in equipment damage.

3. Install upper receiver assembly on action rod in the 12 o'clock position.

END OF TASK

HANDGUARD REMOVAL

NOTE

The flash hider can be removed before removing handguard. It is not necessary to remove handguard if end goal is to remove and replace flash hider.

1. Using 5/64-inch hex wrench, loosen two rail alignment setscrews (Figure 2, Item 1) until a minimum of three threads are visible. If necessary, setscrews can be removed completely. Inspect rail alignment setscrews to ensure threads are free of any debris. Debris can be removed using nylon brush.

2. Using T30 Torx bit and bit driver, loosen two retaining rail mounting bolts and pull outward to RETRACTED position.

NOTE

Notice the interface between upper receiver and handguard.

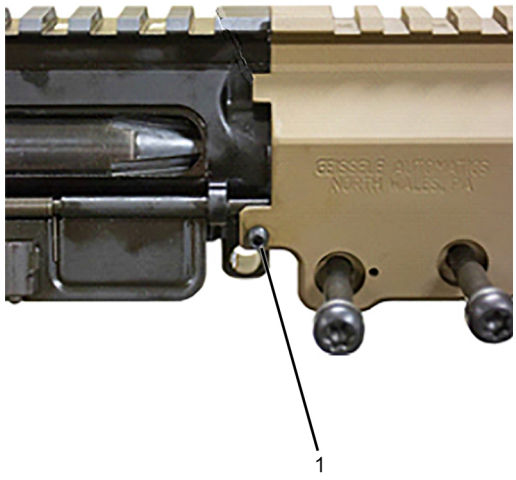


Figure 2. Removing Retaining Rail Mounting Bolts.

3. Remove handguard (Figure 3, Item 1).

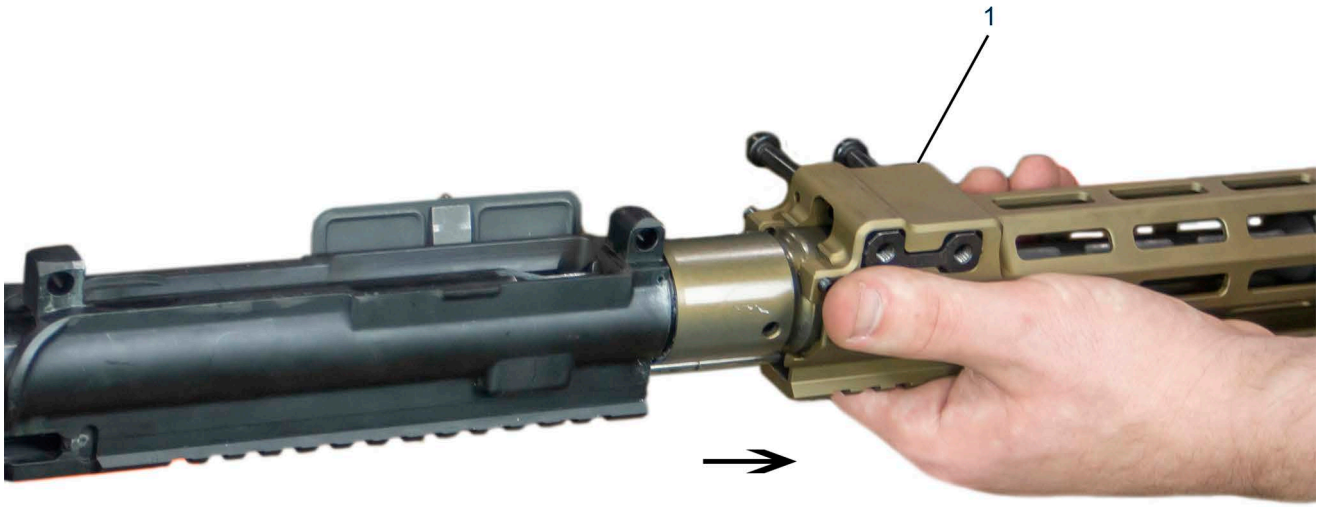


Figure 3. Removing Handguard from URG-I.

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in handguard damage.

END OF TASK

FLASH HIDER REMOVAL

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

1. With URG still locked into action rod fixture, remove flash hider (Figure 4, Item 1) using combination wrench (M4A1) and 1/2-inch drive ratchet wrench.



Figure 4. Removing Flash Hider.

2. Remove shims and spacer and dispose In Accordance With (IAW) local procedures.

WARNING



Burn hazard. Family Muzzle Break Suppressor Carbine (FMBS-C) flash hider and barrel can be hot. Keep hands clear of hot parts and use heat resistant gloves. Wait for equipment to cool to ambient temperature before handling when using heat gun or propane torch. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

Heat shall be applied only to FMBS-C flash hider. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

When FMBS-C flash hider cannot be removed from barrel, remove and replace barrel assembly. Heat removal is not the best method to remove Rocksett. Soaking the muzzle end of the weapon is warm water for a minimum of 20 minutes should allow for the Rocksett to break free.

3. If necessary, use heat gun or propane torch to heat FMBS-C flash hider (Figure 5). Return to step 1 after applying heat.



Figure 5. Heating FMBS-C Flash Hider.

END OF TASK

BARREL ASSEMBLY REMOVAL

CAUTION

If URG-I barrel nut wrench is not properly assembled damage to equipment may occur.

If URG-I barrel nut wrench is not used in proper orientation demonstrated below, equipment damage may occur.

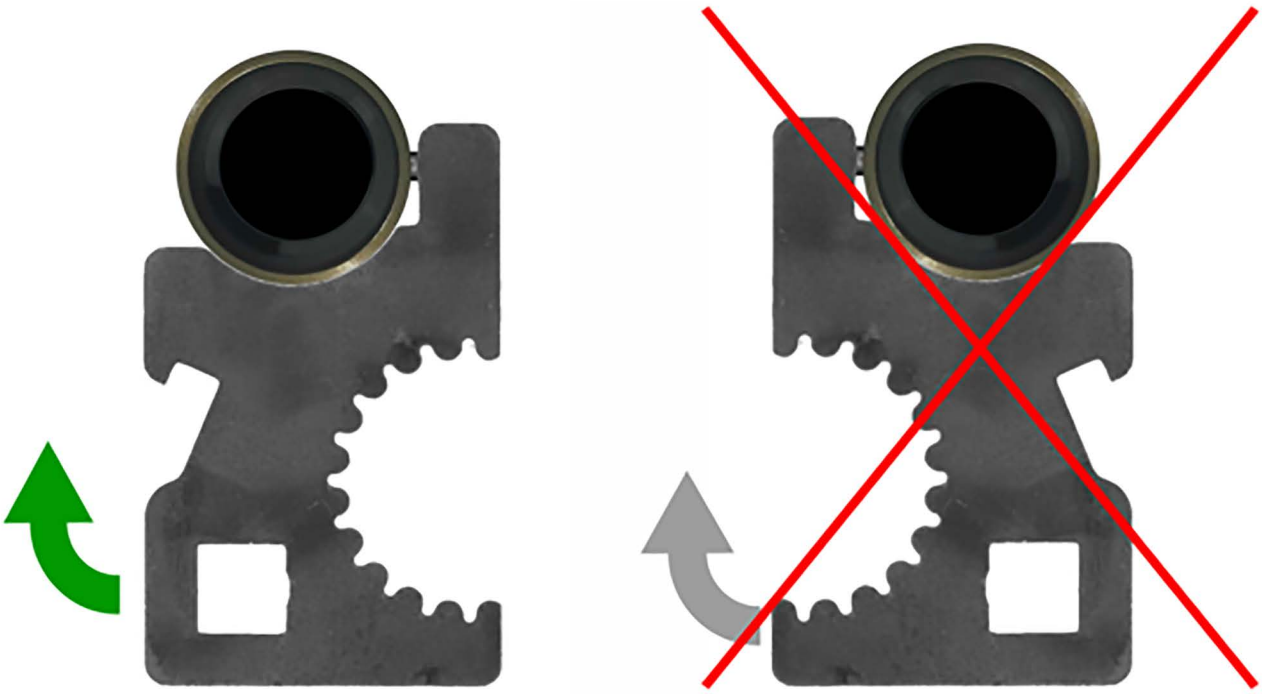


Figure 6. Utilizing Barrel Nut Wrench.

1. Using URG-I barrel nut wrench and 1/2-inch drive ratchet wrench, remove barrel nut by applying counterclockwise (CCW) torque (Figure 7).



Figure 7. Removing Barrel Nut.

2. Loosen barrel nut by hand and remove barrel assembly from upper receiver cartridge.

3. Remove barrel assembly from upper receiver cartridge.

END OF TASK

BARREL ASSEMBLY DISASSEMBLY

1. Set barrel assembly (Figure 8) on top of armorers block.



Figure 8. Barrel Assembly.

2. Using 1/8-inch punch and armorer's hammer, punch out taper pin holding gas block onto the barrel and remove gas block and gas tube assembly (Figure 9).



Figure 9. Hammering Out Taper Pin.

3. Using 1/16-inch punch and armorer's hammer, punch out spring pin holding gas tube in gas block (Figure 10).

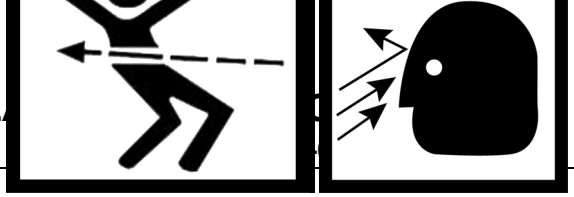


Figure 10. Punching Out Spring Pin.

4. Remove barrel nut.

5. Place receiver cartridge on armorers block.

WARNING



Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

With barrel removed, ejector port cover headless grooved pin may be withdrawn forward (towards the muzzle) without removing C-clip. For removal of ejector port cover with barrel installed, proceed with removal of the C-clip.

When removing with handguard still installed, headless grooved pin may bind against forward assist housing requiring additional force to remove.

6. Disassemble ejector port cover assembly; using scribe or needlenose pliers, remove ejection port cover and C-clip. Control ejection port cover and spring to prevent loss as headless grooved pin is withdrawn. Grasp ejection port cover and spring. Slide headless grooved pin rearward and remove (Figure 11).



Figure 11. Removing C-clip and Headless Grooved Pin.

7. Disassemble forward assist assembly.

   a. Using 3/32-inch drive pin punch, drive out spring pin (Figure 12). Remove and discard spring pin IAW local procedures.



Figure 12. Removing Spring Pin.

b. Remove forward assist assembly and forward assist spring from receiver.

c. Remove spring from forward assist (Figure 13) and dispose of spring IAW local procedures.

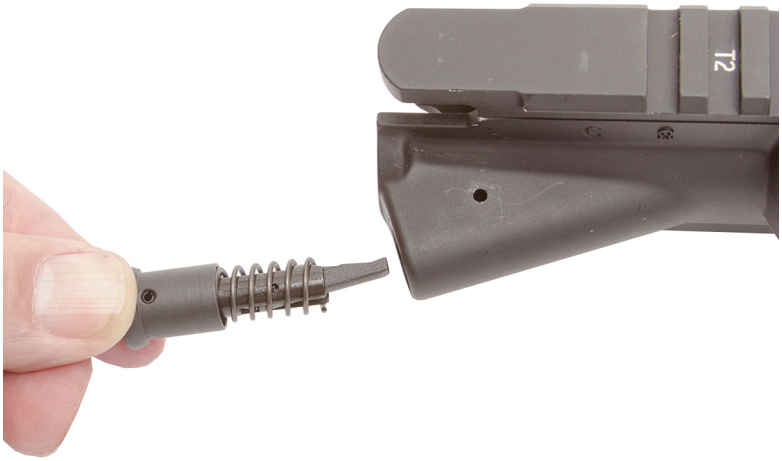


Figure 13. Removing Forward Assist Assembly and Forward Assist Spring.

END OF TASK

INSPECTION

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in handguard damage.

1. Inspect handguard.
    a. Inspect handguard for cracks, deformities, and unusual wear. Replace as required.
    b. Inspect that attachment screws are not stripper or cracked.
    c. Inspect rails and Modular Lock (M-LOK) slots for deformities and straightness.
2. Inspect gas block, barrel, and flash hider.
    a. Inspect gas block for cracks, deformities, and unusual wear. Replace when required.
    b. Ensure gas block taper pin is present and recessed.
    c. The gas block and barrel are matched, therefore it is important to ensure to replace barrel and gas block assembly together.
    d. Inspect barrel for cracks, deformities, and unusual wear. Replace when required.
    e. Inspect muzzle threads to ensure they are not damaged.

NOTE

Gauging is required pre-deployment, as needed, and annually.

END OF TASK

ASSEMBLY

NOTE

If converting a M4/MK18 variant into a URG-I, and the disassembly procedure is already complete, start with the assembly section of this Work Package (WP). If not, proceed to appropriate WP supporting document for the disassembly procedure for that variant.

1. Place armorer's block onto work surface and place upper receiver cartridge onto armorer's block.

2. Assemble forward assist assembly.

   a. Install forward assist spring onto forward assist assembly.

   b. Ensure forward assist pawl faces toward inside of receiver and insert into receiver (Figure 14).

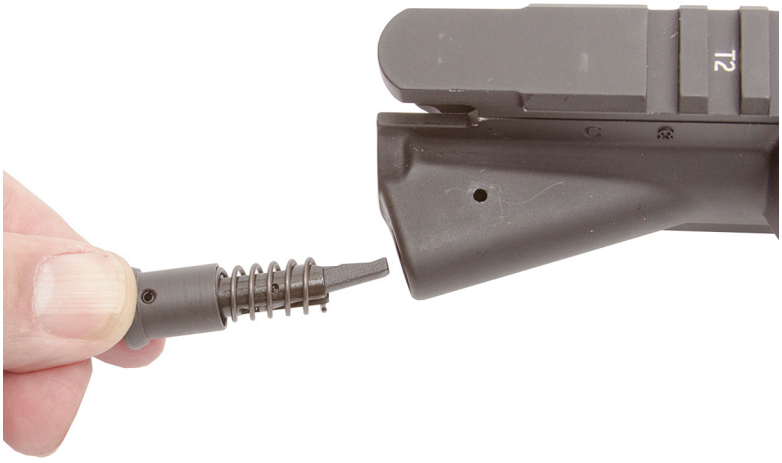


Figure 14. Assembling Forward Assist Assembly and Forward Assist Spring.

   c. Align forward assist with receiver holes. Using armorer's hammer and 3S spring pin holder, insert new spring pin into receiver hole (Figure 15).



Figure 15. Aligning Forward Assist.

d. Using armorer's hammer and 3/32-inch spring pin punch, drive spring pin flush with receiver (Figure 16).

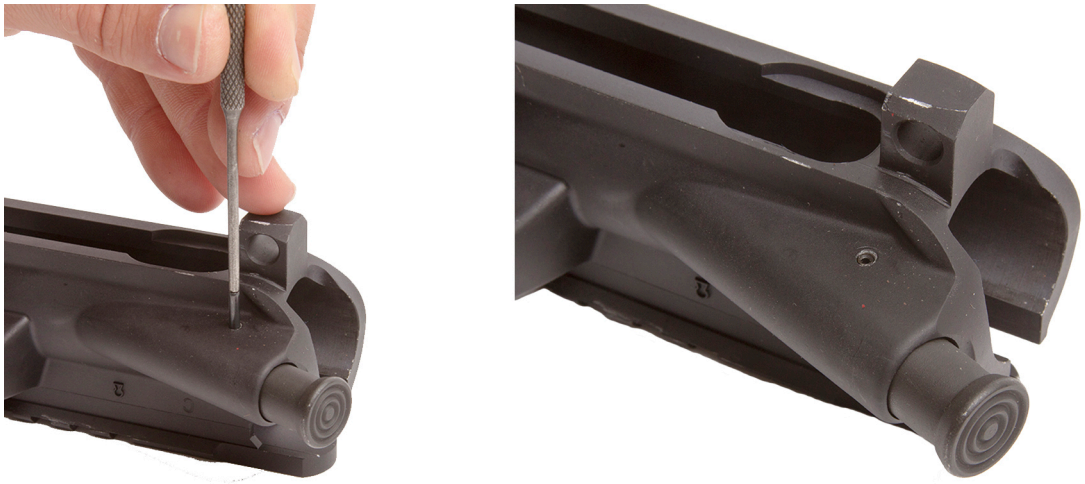


Figure 16. Driving Spring Pin Flush.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

3. Install receiver cartridge onto action rod.

NOTE

Step 4 can be completed using an armorer's block or action rod as a fixture.

4. Assemble ejection port cover.

NOTE

With barrel removed, ejector port cover headless grooved pin may be installed from front with C-clip installed. For installation of ejector port cover with barrel installed, proceed to install headless grooved pin from rear without C-clip.

a. Position ejection port cover and cover spring on upper receiver with short leg of cover spring to rear on inside of ejection port cover.

b. Install headless grooved pin, groove end leading from back to front, halfway through spring (Figure 17).



Figure 17. Installing Headless Grooved Pin.

c. Hold cover spring short leg in this position, turning long leg (Figure 18, Item 1) of spring 1/2 turn clockwise (CW), from front of weapon, creating tension in spring. Long leg of spring will be forward on inside of ejection port cover. Once this procedures is complete, upper receiver cartridge should resemble Figure 19.

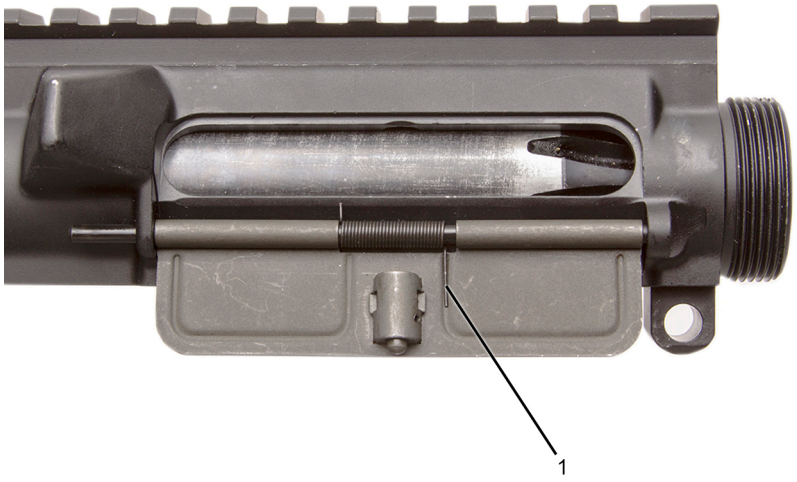


Figure 18. Long Leg of Cover Spring.

d. Hold spring in place and continue to push headless grooved cover pin until ejection port cover is secured to receiver (Figure 19).



Figure 19. Pushing Grooved Headless Cover Pin.

e. Using needlenose pliers, secure headless groove pin with C-clip (Figure 20).



Figure 20. Securing Headless Groove Pin.

END OF TASK

INSTALLATION OF URG-I BARREL AND GAS BLOCK ASSEMBLY

1. Apply molybdenum disulfide grease MIL-G-21194 to cartridge receiver threads (Figure 21).



Figure 21. Applying Grease to Receiver Cartridge.

NOTE

Force may be required to insert barrel.

2. Installation of URG-I barrel assembly on upper receiver assembly.

   a. Align barrel locating pin with slot in upper receiver cartridge.

b. Fully insert barrel with shoulder of barrel extension seated against upper receiver cartridge (Figure 22).



Figure 22. Aligning Barrel and Gas Block Assembly with Upper Receiver Cartridge.

3. Slide barrel nut onto upper receiver assembly threads and hand tighten (Figure 23).



Figure 23. Installing Barrel Nut.

4. Install URG-I onto action rod.

CAUTION

Failure to use barrel nut wrench in correct manner can result in damage to tool or equipment.

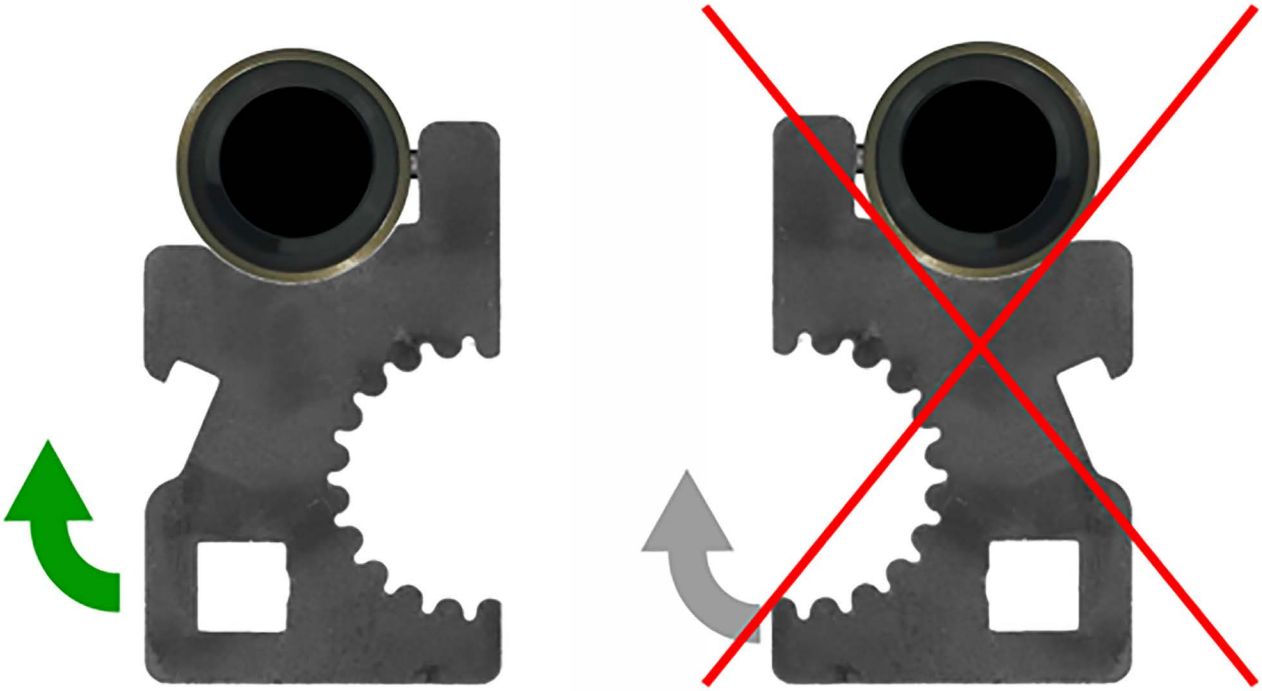


Figure 24. Utilizing Barrel Nut Wrench.

5. Using URG-I barrel nut wrench and 1/2-inch drive foot-pound (ft•lb) torque wrench, torque barrel nut to 50 ft•lb (Figure 25).



Figure 25. Torquing Barrel Nut.

6. Install gas tube back into gas block.

   a. Ensure gas tube port is facing toward gas port in barrel.

   b. Place gas tube and gas block assembly onto armorer's block.

   c. Using 2S roll pin holder and armorer's hammer, begin to drive gas tube spring pin into gas block (Figure 26).

   d. Using 1/8-inch straight punch and armorer's hammer, drive spring pin into gas block until flush.



Figure 26. URG-I Barrel and Gas Block Assembly.

7. Slide gas tube and gas block assembly onto barrel of upper receiver assembly, align gas tube with gas tube hole in upper receiver cartridge, slide gas block assembly until contacting shoulder of barrel (Figure 27).



Figure 27. Installing Gas Tube Assembly.

8. Remove URG-I from action rod and place on gas tube assembly fixture.

NOTE

Ensure taper pin hole in barrel and gas block are properly aligned.

9. Using 1/8-inch straight punch and armorer's hammer, drive taper pin into gas block (Figure 28).



Figure 28. Installing Taper Pin.

END OF TASK

INSTALLATION OF URG-I HANDGUARD

1. Loosen two retained rail mounting bolts and pull outward to RETRACTED position (Figure 29).



Figure 29. Retracting Retained Rail Mounting Bolts.

2. Ensure two rail alignment setscrews (Figure 30, Item 1) are retracted until they no longer protrude inside handguard flush with inside of handguard. Inspect rail alignment setscrews to ensure threads are free of any debris. Debris can be removed using nylon brush.

3. Lightly coat outer diameter of barrel nut and inner diameter of handguard with Cleaner, Lubricant and Preservative (CLP).

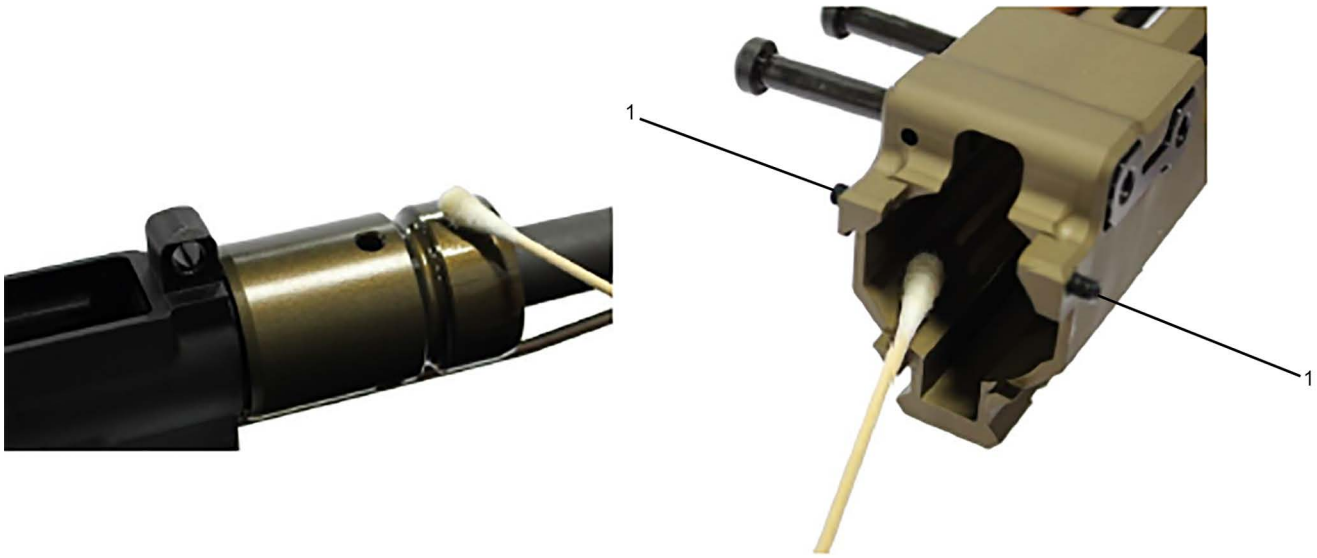


Figure 30. Coating Barrel Nut and Handguard.

4. Pull upper receiver assembly slightly forward until action rod is free from barrel extension. Rotate URG to the 6 o'clock position and make sure action rod is contacting barrel extension.

5. Align handguard with receiver and slide handguard over barrel until handguard contacts barrel nut (Figure 31).



Figure 31. Aligning Handguard.

6. Slowly slide handguard over barrel nut while keeping handguard concentric with barrel to prevent binding, stopping short of engaging upper receiver cartridge (Figure 32).



Figure 32. Engaging Handguard over Barrel Nut.

7. Align rail alignment tabs (Figure 33, Item 1) on handguard to flats below the 12 o'clock rail on upper receiver cartridge. Continue to slide handguard over barrel nut until handguard is flush with upper receiver cartridge.

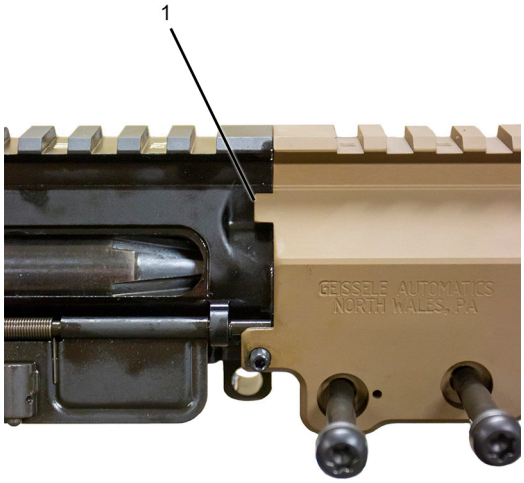


Figure 33. Rail Alignment Tabs.

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in damage to hangduard.

8. Insert retained rail mounting bolts until engaged with tandem press nut on reverse side. Slight movement of handguard may be necessary in order to line up holes with grooves in barrel nut (Figure 34).



Figure 34. Inserting Retained Rail Mounting Bolt.

9. Remove action rod and upper receiver from vise.

10. Place rail alignment block in vise.

11. Place URG into rail alignment block with handguard and upper receiver cartridge centered in alignment block. Tighten vise until URG is secure (Figure 35).

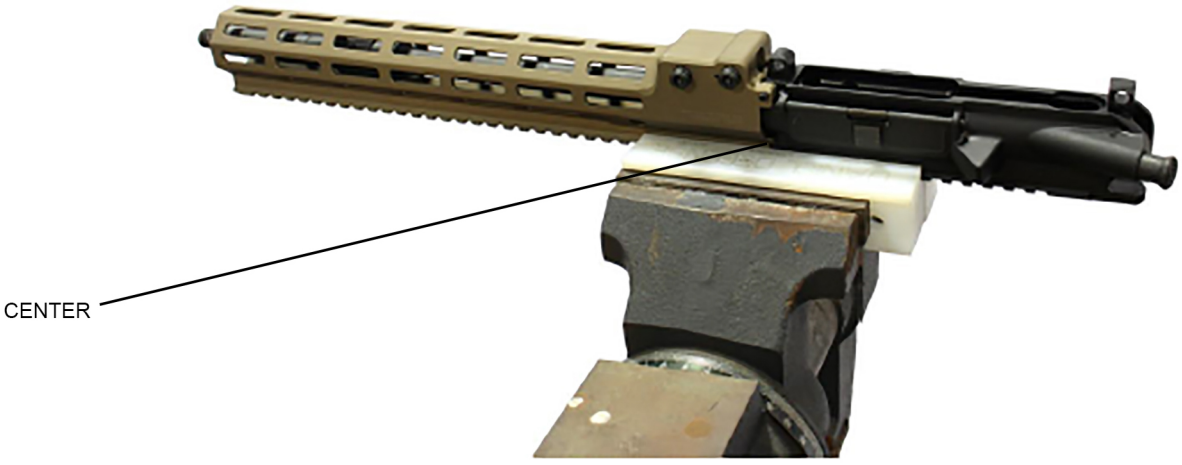


Figure 35. Placing URG into Rail Assembly Block.

CAUTION

Over tightening of hardware may result in equipment damage.

12. Apply one drop of Loctite® 243 to cotton swab and apply to threads of each alignment screw. Using 5/64-inch hex wrench, alternate tightening both rail alignment setscrews until screws contact upper receiver. Tighten each alignment screw 1/4 turn (Figure 36).

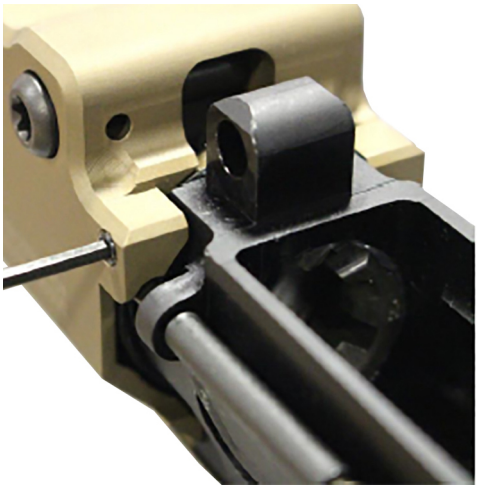


Figure 36. Tightening Rail Alignment Setscrews.

13. Using T30 Torx bit and inch-pound (in-lb) torque wrench, tighten two rail mounting bolts to 84 in-lb (Figure 37).

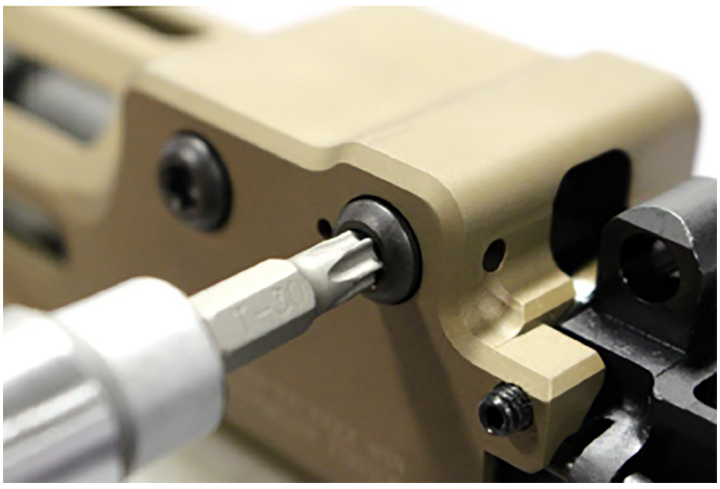


Figure 37. Tightening Rail Mounting Bolts.

14. Remove URG and rail alignment block from vice. Visually inspect that 12 o'clock rails on handguard and upper receiver cartridge are aligned.

15. If rails do not align, disassemble rail system and reinstall.

END OF TASK

INSTALL FMBS-C FLASH HIDER

CAUTION

Shoulder of action rod must contact the vise jaws. Failure to observe this caution could result in equipment damage.

1. Place action rod in vise with shoulder touching side of vise jaws.

2. Tighten vise until action rod is secure.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

3. Place URG onto action rod with rail of URG in 12 o'clock position.

4. Using clean cloth and acetone, clean barrel and FMBS-C flash hider threads.

5. Install spacer on barrel with beveled side facing barrel shoulder.

NOTE

Removal and installation of FMBS-C flash hider may be performed several times to add or remove shims to ensure proper alignment.

6. Install FMBS-C flash hider on barrel hand-tight (Figure 38).



Figure 38. Installing FMBS-C Flash Hider.

7. Check position of adapter index tab on flash hider (Figure 39, Item 1).

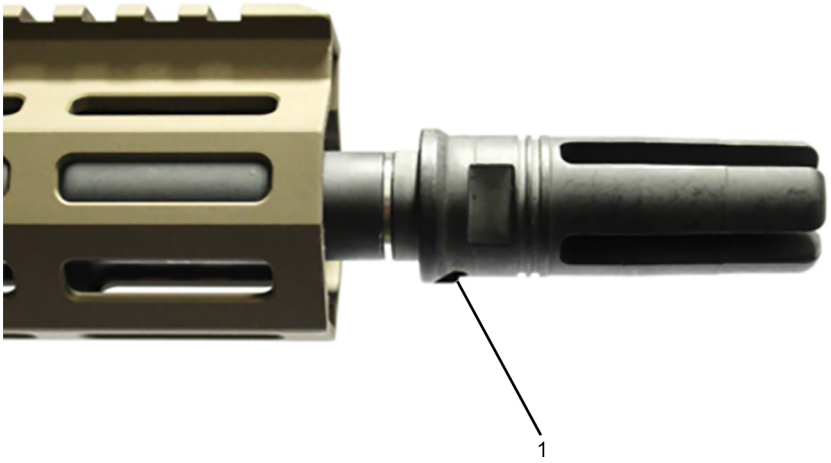


Figure 39. Adapter Index Tab.

NOTE

Index tab is properly aligned at 6 o'clock position after torque values have been applied.

When index tab is between lines, select previous CCW line shim color(s). When index tab is between 6 o'clock position and starting torque location, shims are not required.

8. Using timing wheel selection chart, select shim(s) for flash hider alignment from shim set thickness chart (Figure 40).

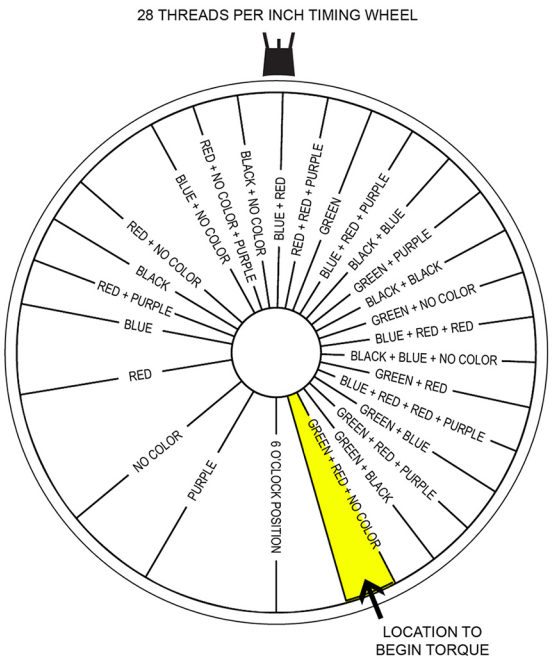


Figure 40. Timing Wheel Selection Chart.

9. Remove FMBS-C flash hider from barrel.

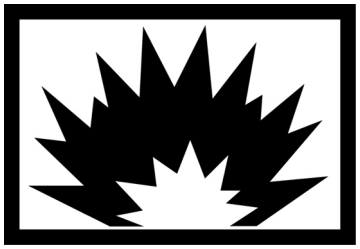
10. Install selected shim(s) on barrel.

11. Install FMBS-C flash hider on barrel and turn until hand-tight.

12. Repeat step 8 through step 11 until FMBS-C flash hider index tab is positioned at location to begin torque (Figure 40).

13. Remove FMBS-C flash hider from barrel.

WARNING

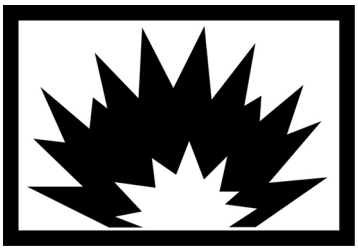


Explosion hazard. Rocksett shall be applied only to barrel and FMBS-C flash hider threads. Rocksett entering weapon bore could cause a bore obstruction and increase barrel pressure. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment damage.

14. Apply two drops of Rocksett to barrel threads.

15. Install FMBS-C flash hider on barrel and turn until hand-tight.

WARNING



Explosion hazard. Torquing FMBS-C flash hider beyond 30 ft•lb could cause bore constriction to occur. Manufacturer recommended pressures could be exceeded causing bore to explode. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

16. Using combination wrench (M4A1) and 1/2-inch drive ft•lb torque wrench, torque FMBS-C flash hider to 20-30 ft•lb (Figure 41.)

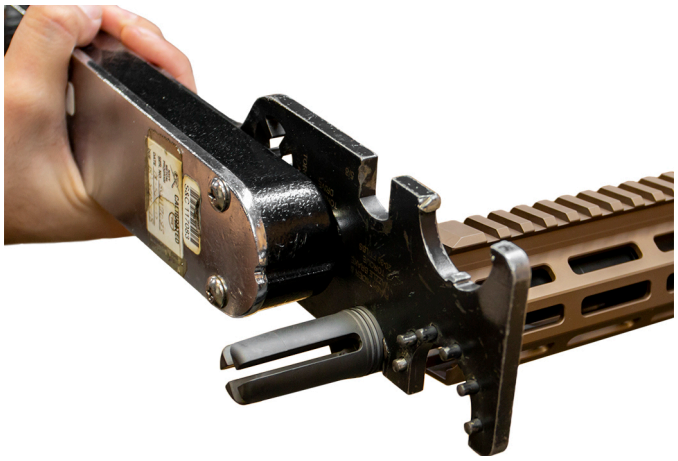


Figure 41. Torquing FMBS-C Flash Hider.

17. Verify adapter index tab on flash hider is positioned in 6 o'clock position.

18. Keep URG in warm/dry environment for 24 hours to cure Rocksett.

19. Using ambidextrous charging handle, assemble from fieldstrip URG-I IAW WP 0021.

20. Perform headspace and bore straightness gauging IAW WP 0023.

21. Perform Safety/Function Check IAW WP 0022.

22. After first firing M4A1 with kit installed, use T30 bit to re-tighten rail mounting bolts to 84 in-lb. It can take a few cycles for press nut to fully seat in handguard.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

LOWER RECEIVER AND BUTTSTOCK ASSEMBLY MAINTENANCE

INITIAL SETUP:

Tools
- 1/16-inch Drive Pin Punch (WP 0062, Item 10)
- 1/8-inch Drive Pin Punch (WP 0062, Item 10)
- 3/32-inch Drive Pin Punch, (WP 0062, Item 10)
- Scribe (WP 0062, Item 19)
- 5/64-inch Hex Wrench (WP 0062, Item 7)
- Torque Wrench (WP 0062, Item 24)
- 5/16-inch Flat-Tip Screwdriver (WP 0062, Item 17)
- Brass/Nylon Hammer (WP 0062, Item 3)
- Ball Peen Hammer (WP 0062, Item 2)
- Vise (WP 0062, Item 21)
- Center Punch (WP 0062, Item 10)

Special Tools
- Pivot Pin Installation Tool (WP 0032, Item 1)
- Pivot Pin Removal Tool (WP 0032, Item 2)
- Buttstock Wrench (WP 0057, Item 8)
- Receiver Block (WP 0057, Item 12)

Materials Required
- Molybdenum Disulfide Grease (WP 0061, Item 20)
- CLP (WP 0061, Item 9)
- Cloth (WP 0061, Item 15)

Mandatory Replacement Parts
- Lock Washer (WP 0063, Item 5)

Personnel Required
- Qualified Armorer (1)

Equipment Condition
- Weapon fieldstripped (WP 0012)

DISASSEMBLY

1. Install lower receiver block into lower receiver and secure in vise (Figure 1).



Figure 1. Receiver Block in Vise.

2. Disassemble pistol grip.

   a. Using 5/16-inch flat-tip screwdriver, remove machine screw and lock washer from pistol grip. Discard lock washer (Figure 2).



Figure 2. Removing Pistol Grip.

   b. Remove pistol grip, safety detent spring, and safety detent from lower receiver (Figure 3).

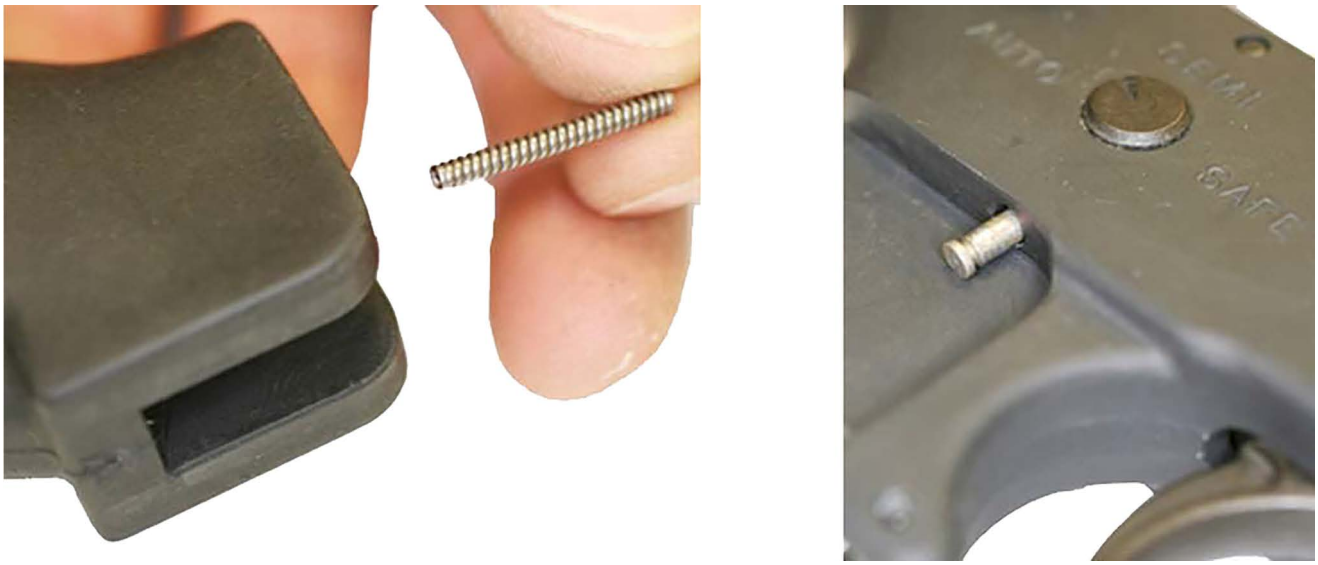


Figure 3. Removing Pistol Grip.

3. Disassemble buttstock assembly.

   a. Extend buttstock assembly by pressing on lock release lever (Figure 4).



Figure 4. Extending Buttstock Assembly.

   b. Grasp lock release lever, pull downward, and remove buttstock from lower receiver extension (Figure 5).



Figure 5. Buttstock Assembly and Lower Extension.

CAUTION

Parts are under spring tension. Hold buffer retainer shoulder pin and buffer retaining shoulder pin spring and lower receiver rear sling attachment in position with index finger while loosening extension locking nut. Failure to hold parts in place could result in loss of parts. Failure to observe this caution could result in equipment damage and lost parts.

c. While holding receiver rear sling attachment against receiver, use buttstock wrench to loosen extension locking nut (Figure 6).



Figure 6. Loosening Extension Locking Nut.

d. Allow receiver rear sling attachment to disengage from lower receiver and capture take down pin spring (Figure 7).

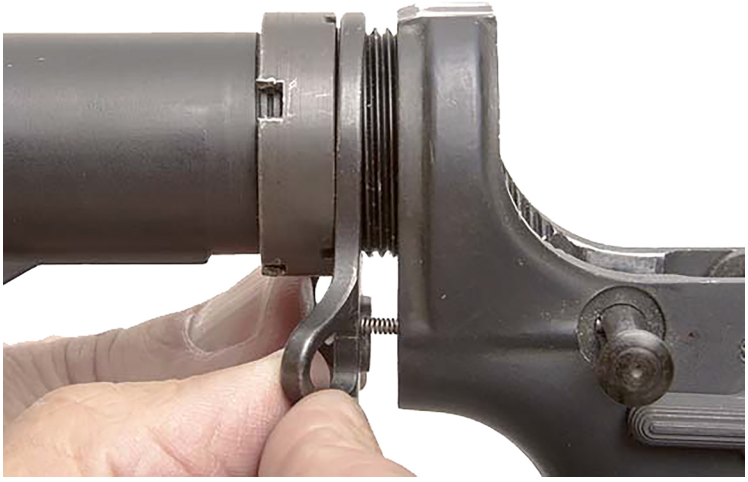
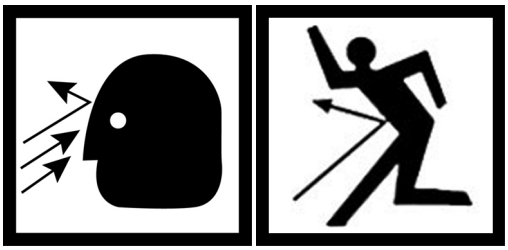


Figure 7. Capturing Take Down Pin.

WARNING



Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

CAUTION

Maintain control of buffer retainer should pin and buffer retainer shoulder pin spring to prevent loss. Failure to observe this caution could result in equipment damage and loss of parts.

e. Hold buffer retainer shoulder pin and buffer retainer should pin spring in position with finger or scribe. Turn counterclockwise (CCW) and remove lower receiver extension from lower receiver (Figure 8).



Figure 8. Lower Receiver.

f. Slide rear sling attachment (Figure 9, Item 1) off lower receiver extension. Turn extension locking nut (Figure 9, Item 2) CCW and remove from lower receiver extension (Figure 9).



Figure 9. Removing Extension Locking Nut from Lower Receiver Extension.

g. Remove buffer retainer shoulder pin (Figure 10, Item 2) and buffer retainer shoulder pin spring (Figure 10, Item 1).

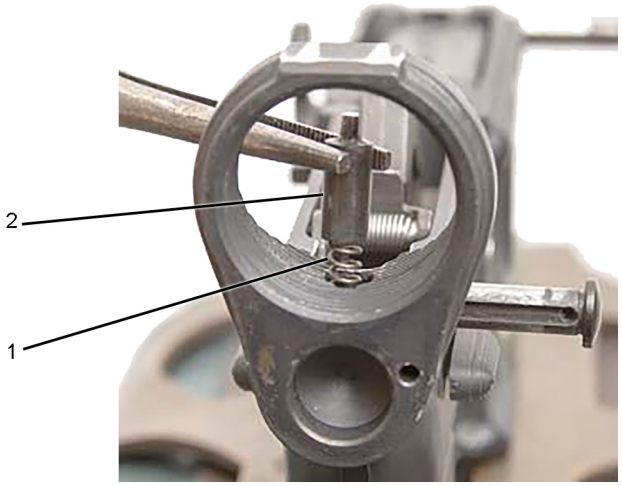


Figure 10. Removing Buffer Retainer Shoulder Pin and Pin Spring.

h. Remove from vise and remove takedown pin detent by tilting lower receiver downward and tap until detent falls out. Replace lower receiver in vise. Remove rear takedown pin (Figure 11).



Figure 11. Removing Takedown Pin Detent and Takedown Pin.

4. Disassemble pivot pin.

NOTE

For pivot pin with a hole remove using step a for pins without hole use step c.

a. Using 1/16-inch drive pin punch, compress pivot pin detent in spring access hole on front of pivot pin and rotate 1/4 turn (Figure 12).



Figure 12. Removing Front Pivot Pin, Detent, and Spring from Lower Receiver.

b. Remove front pivot pin, detent, and spring from lower receiver.

NOTE

The scribe and 1/8-inch drive pin punch used for removing and installing front pivot pin needs to be modified using a grinding tool. Grind a 45º bevel on the tip of both tools.

c. To remove pivot pin without hole, wedge pivot pin removal tool between detent and pivot pin (Figure 13).



Figure 13. Removing Pivot Pin and Detent.

d. Compress detent and rotate pivot pin 1/4 turn. Pull pivot pin from receiver.

5. Disassemble bolt catch.

CAUTION

Bolt catch housing tabs on lower receiver are easily damaged. Failure to observe this caution could result in equipment damage.

a. Using 3/32-inch drive pin punch and ball peen hammer, drive from back to front and remove bolt catch retaining pin (Figure 14).



Figure 14. Removing Bolt Catch Retaining Pin.

b. Remove bolt catch, bolt catch spring, and bolt catch plunger from receiver (Figure 15).



Figure 15. Removing Bolt Catch, Bolt Catch Spring, and Bolt Catch Plunger.

c. Remove bolt catch plunger from bolt catch spring (Figure 16).



Figure 16. Removing Bolt Catch Plunger.

6. Disassemble magazine catch.

a. Using finger or drive pin punch, press in on magazine catch button and hold (Figure 17).



Figure 17. Magazine Catch Button.

b. Turn magazine catch and remove (Figure 18).



Figure 18. Removing Magazine Catch.

c. Remove magazine catch button and magazine catch spring (Figure 19).



Figure 19. Removing Magazine Catch Button and Magazine Catch Spring.

CAUTION

Damage to M4A1 lower receiver could result if trigger guard wings are not supported while removing rear trigger guard spring pin.

7. Disassemble trigger guard.

a. Compress detent on right front of trigger guard and swing trigger guard downward.

b. Using 1/8-inch drive pin punch and ball been hammer, remove spring pin (Figure 20).



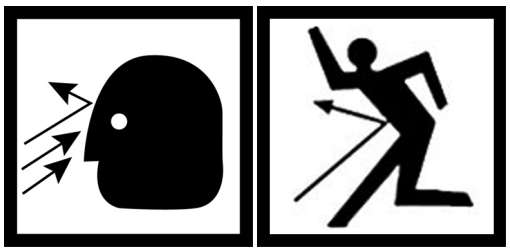
Figure 20. Removing Spring Pin

c. Remove trigger guard (Figure 21).



Figure 21. Removing Trigger Guard.

WARNING



Flying particle and projectile hazard. Some lower receiver parts are under spring tension. Maintain control of springs and detents when removing from lower receiver and during disassembly. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

CAUTION

Disassembly of lower receiver shall only be performed when weapon has been exposed to salt water, severe weather, or extreme environmental conditions. Frequent removal of pins could shorten service life of lower receiver. Failure to observe this caution could result in equipment damage.

NOTE

Repair or replacement of auto sear and fire control selector shall only be performed by personnel who are authorized by component.

8. Remove automatic sear and fire control selector assembly.

a. Place selector lever on AUTO.

b. Using 3/32-inch drive pin punch, remove sear pin (Figure 22).



Figure 22. Removing Sear Pin.

c. Remove automatic sear (Figure 23).



Figure 23. Removing Automatic Sear.

d. Using 5/64-inch hex wrench, remove socket head capscrew from main lever (Figure 24).



Figure 24. Removing Socket Head Capscrew.

e. Remove ancillary lever.

f. Remove main lever (Figure 25).



Figure 25. Removing Main Lever.

9. Removal and disassemble hammer assembly.

   a. Maintain control of hammer, squeeze trigger and ease hammer forward.

   b. Using 1/8-inch drive pin punch, remove hammer pin (Figure 26).



Figure 26. Removing Hammer Pin.

   c. Remove hammer assembly (Figure 27).



Figure 27. Removing Hammer Assembly.

d. Remove hammer spring from hammer (Figure 28).



Figure 28. Removing Hammer Spring.

10. Remove and disassemble trigger assembly.

a. Using 1/8-inch drive pin punch, drive out trigger pin and keep punch in place (Figure 29).



Figure 29. Removing Trigger Pin.

b. Maintain control of disconnector and trigger, remove drive pin punch and trigger assembly from lower receiver (Figure 30).



Figure 30. Removing Trigger Assembly.

c. Remove disconnector from trigger (Figure 31).



Figure 31. Removing Disconnector.

d. Remove trigger spring from trigger (Figure 32).



Figure 32. Removing Trigger Spring.

CAUTION

Disconnector spring shall only be removed when damaged or broken. Failure to observe this caution could damage spring.

e. Remove disconnector spring from trigger (Figure 33).



Figure 33. Removing Disconnector Spring.

END OF TASK

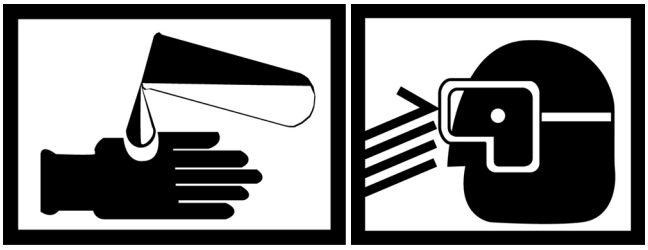
INSPECTION AND CLEANING

1. Inspect buffer for cracks or damage. Ensure H2 is stamped on head of buffer.
2. Inspect buffer spring for kinks.
3. Inspect buttstock for cracks.
4. Inspect rifle grip (Figure 34) for cracks or damage. Ensure machine screw and lock washer are not damage.



Figure 34. Inspecting Rifle Grips.

WARNING



Wear safety glasses and protective gloves. Avoid repeated/prolonged skin contact with hazardous materials. Wash affected areas with soap and water upon completion of task or prior to eating and drinking. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury.

NOTE

Fire control selector assembly shall be replaced when main lever or ancillary lever are damaged or worn.

5. Clean, inspect, and lubricate fire control selector assembly.

a. Using cloth and Cleaner, Lubricant and Preservative (CLP), remove carbon or debris from main lever and ancillary lever.

b. Check main lever and ancillary lever for cracks or bends.

c. Check main lever camming surfaces for excessive wear.

d. Check main lever trigger and disconnector contact areas for excessive wear, nicks, or burrs.

e. Check main lever detent for nicks or burrs.

f. Lightly lubricate main lever camming surfaces and contact points.

g. Inspect fire control selector assembly fro cracks, bends, or breaks.

6. Inspect trigger for cracks or breaks.

7. Inspect magazine catch for cracks, bends, or breaks.

8. Inspect auto sear for cracks, bends, or breaks.

9. Inspect hammer for breaks, cracks, and bent springs.

END OF TASK

ASSEMBLY

1. Assemble trigger guard.

a. Align trigger guard with lower receiver.

b. Using 1/8-inch drive pin punch and soft face hammer, install spring pin (Figure 35).

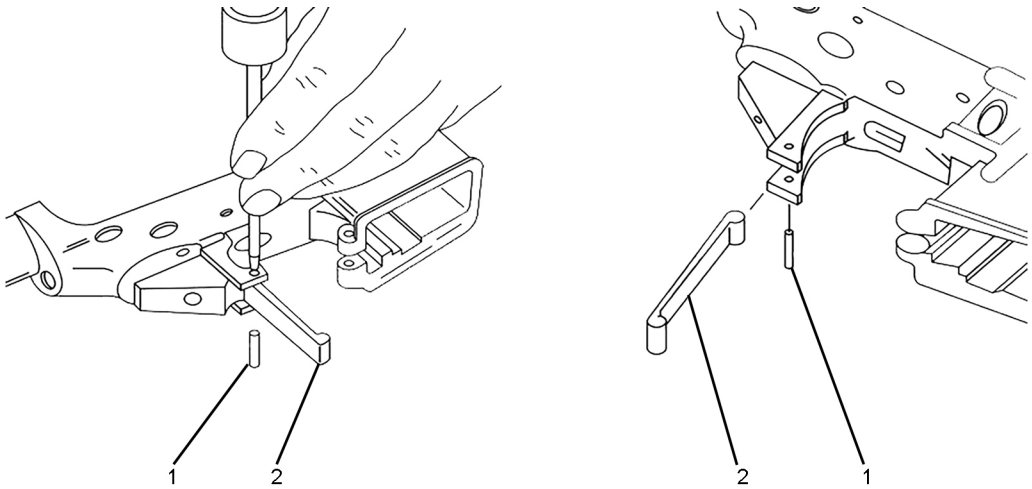
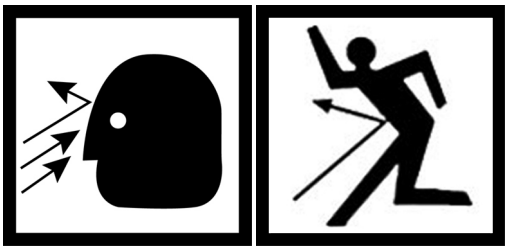


Figure 35. Trigger Guard.

WARNING



Flying particle and projectile hazard. During and after assembly, some parts will be under spring tension. Maintain control of parts, springs, and detents. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

NOTE

If installing Super Select Fire (SSF) trigger, refer to WP 0020.

After installation, trigger pin, hammer pin, and automatic sear pin should be flush with outside of receiver.

The SSF trigger is authorized by certain components only follow this procedure if the SSF is authorized by your component.

2. Assemble and install trigger assembly.

   a. Insert large end of disconnector spring (Figure 36) into trigger and ensure it is fully seated.



Figure 36. Installing Disconnector Spring.

b. Install trigger spring (Figure 37) onto trigger with square portion of spring under short end of trigger.



Figure 37. Installing Trigger Spring.

c. Place disconnector (Figure 38) into top of trigger.



Figure 38. Installing Disconnector.

d. Maintaining control of trigger assembly (Figure 39), align in lower receiver.



Figure 39. Installing Trigger Assembly.

e. Using 1/8-inch drive pin punch, install trigger pin (Figure 40).



Figure 40. Installing Trigger Pin.

3. Assemble and install hammer assembly.

   a. Place hammer spring (Figure 41) on hammer with square portion of spring to rear of hammer.



Figure 41. Hammer Spring.

   b. Place hammer spring (Figure 42) on top of trigger pin with hammer spring ends pointing rearward.



Figure 42. Hammer Spring Ends.

c. Align hammer assembly with lower receiver using 1/8-inch drive pin punch.

d. Install hammer pin (Figure 43) and tap into place until flush.



Figure 43. Installing Hammer Pin.

NOTE

For fire control selector assembly installation, proceed to step 4.

e. Cock hammer.

f. Insert selector lever (Figure 44) into left side of lower receiver.



Figure 44. Installing Selector Lever.

g. Place selector lever on AUTO.

h. Place sear spring (Figure 45) in groove on left side of automatic sear.



Figure 45. Installing Sear Spring.

NOTE

Ensure long leg of sear spring is forward and long leg of auto sear is to rear of selector lever.

i. Align automatic sear (Figure 46) with selector lever and lower receiver.



Figure 46. Installing Automatic Sear.

NOTE

Auto sear pin may be installed from either side of lower receiver.

j. Install sear pin (Figure 47) by hand until resistance is felt from auto sear spring leg. Twist auto sear pin as pressure is applied to push auto sear pin past spring leg.



Figure 47. Installing Sear Pin.

4. Install fire control selector assembly and automatic sear.

a. Cock hammer.

b. Insert main lever (Figure 48) into left side of lower receiver.



Figure 48. Installing Main Lever.

NOTE

Ensure both right and left side levers are in AUTO.

c. Align ancillary lever (Figure 49) on right side of lower receiver.



Figure 49. Aligning Ancillary Lever.

CAUTION

Over tightening socket head capscrew may strip threads. When threads are stripped, new fire control selector assembly shall be installed. Failure to observe this caution could damage fire control selector assembly.

d. Insert socket head capscrew (Figure 50) through ancillary lever and into main lever.

e. Using 5/64-inch hex wrench, tighten screw until snug.



Figure 50. Inserting Socket Head Capscrew.

f. Place main lever on AUTO.

g. Position sear spring leg in groove of automatic sear leg.

NOTE

Sear spring leg should rest in front left side groove of selector lever cam. Sear leg should be positioned behind selector lever cam.

h. Align automatic sear (Figure 51) with selector lever and lower receiver.



Figure 51. Installing Automatic Sear.

i. Using 1/16-inch drive pin punch, install sear pin (Figure 52).



Figure 52. Installing Sear Pin.

5. Assemble bolt catch.

a. Place bolt catch spring (Figure 53) on bolt catch plunger and install into receiver.



Figure 53. Installing Bolt Catch Spring.

b. Place bolt catch in bolt catch (Figure 54) slot in receiver.



Figure 54. Installing Bolt Catch.

c. Depress bolt catch and insert 1/16-inch drive pin punch to hold in place.

d. Using 3/32-inch drive pin punch and ball peen hammer, from back to front, drive bolt catch retaining pin into receiver (Figure 55).

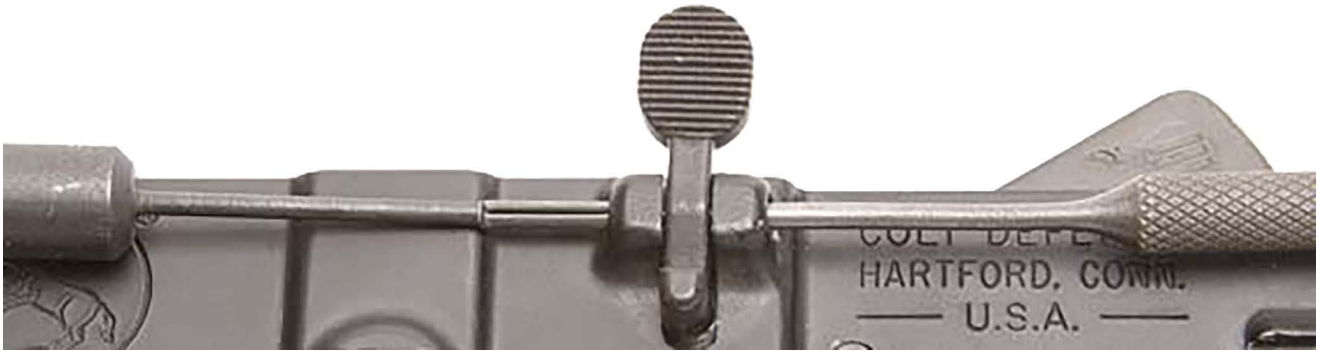


Figure 55. Installing Bolt Catch Retaining Pin.

6. Assemble magazine catch.

a. Insert magazine catch (Figure 56) into slot on left side of receiver and hold.



Figure 56. Installing Magazine Catch.

b. Place magazine catch spring (Figure 57) over shaft of magazine catch.



Figure 57. Installing Magazine Catch Spring.

c. Using finger, screw magazine release button onto magazine catch (2 to 3 turns to hold).

d. Using finger or punch, depress magazine release button (Figure 58) and hold. Rotate magazine catch clockwise (CW) until end of magazine catch shaft is flush with magazine release button.



Figure 58. Depressing Magazine Release Button.

7. Assemble pivot pin.

   a. Insert pivot pin spring and detent (Figure 59) into front hole on right side of receiver.



Figure 59. Installing Helical Spring and Pivot Pin Detent.

   b. Insert pivot pin installation tool (Figure 60) from left to right with 45° angle facing receiver to compress spring and detent.

   c. Rotate tool 180° and place pivot pin against tool. Maintain pressure while sliding pivot pin into hole.

   d. Once pivot pin captures detent, remove tool and rotate pivot pin until detent snaps into pivot pin groove.

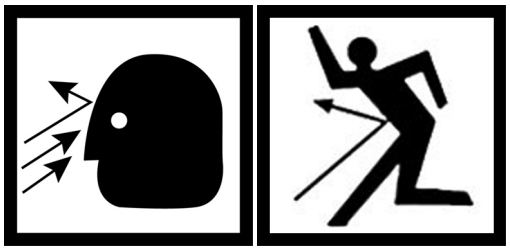


Figure 60. Installing Pivot Pin.

8. Assemble lower receiver extension.

   a. Lubricate threads of lower receiver and lower receiver extension with molybdenum disulfide grease before assembly.

WARNING



Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

   b. Pre-position buffer retainer should pin spring and buffer retainer should pin into retaining hole of lower receiver (Figure 61).

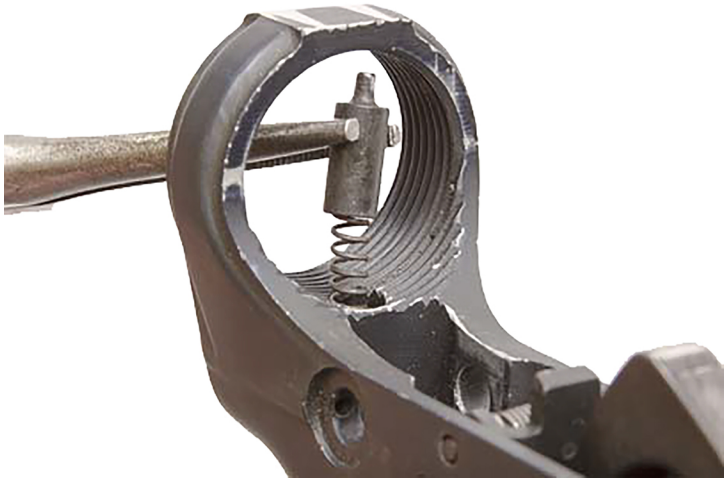


Figure 61. Buffer Retainer Should Pin Spring and Buffer Retainer Shoulder Pin.

NOTE

Rounded end of pivot pin and rear takedown pin detent (old style) must be in groove of pivot pin and rear takedown pin when assembly is complete.

c. Pre-position takedown pin, takedown pin detent, and spring into receiver (Figure 62).



Figure 62. Pre-Position Takedown Pin, Detent, and Spring.

d. Insert detent spring (Figure 63) into lower receiver.



Figure 63. Detent Spring in Receiver.

CAUTION

Parts are under spring tension. Hold buffer retaining shoulder pin, buffer retaining pin spring and rear sling attachment in position with index finger while tightening extension locking nut. Failure to observe this caution could result in equipment damage and loss of parts.

e. Tighten locking nut (Figure 64, Item 1) onto lower receiver extension with notches on locking nut facing rearward. Align rear sling attachment (Figure 64, Item 2) onto lower receiver extension with lug (Figure 64, Item 3) of receiver rear sling attachment facing forward.

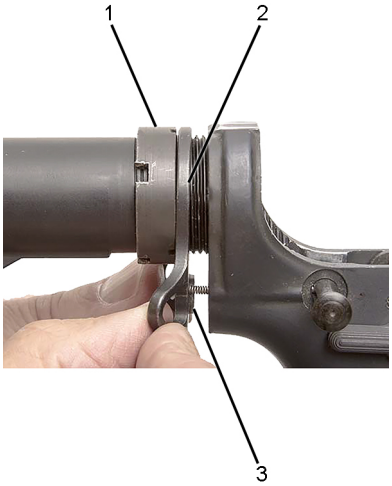


Figure 64. Lower Receiver Extension.

f. Push down on buffer retainer should pin and buffer retainer should pin spring. Tighten lower receiver extension until it retains buffer retainer shoulder pin in position (Figure 65).



Figure 65. Pushing Down on Buffer Retainer and Spring.

g. Align lug of rear sling attachment into rear of lower receiver. Ensure takedown pin spring does not get kinked when rear sling attachment is pressed flush with receiver (Figure 66).



Figure 66. Aligning Lug of Receiver End Plate.

h. Hand tighten locking nut until contact to receiver rear sling attachment is made.

i. Using buttstock wrench, tighten locking nut (Figure 67) until snug.



Figure 67. Tightening Locking Nut.

j. Using buttstock wrench and torque wrench, torque locking nut to 40± foot-pound (ft•lb).

k. Using ball peen hammer and center punch, stake receiver rear sling attachment in two places across notches in locking nut (Figure 68).



Figure 68. Staking Receiver End Plate in Two Places.

9. Assemble pistol grip.

a. Insert safety detent (Figure 69) (point end first) into hole of receiver.



Figure 69. Installing Safety Detent.

b. Insert safety detent spring into hole in pistol grip (Figure 70).



Figure 70. Installing Safety Detent Spring.

CAUTION

Ensure safety detent spring does not get kinked during installation of pistol grip. Failure to observe this caution could result in damage to safety detent spring or equipment damage and loss of parts.

c. Install pistol grip onto receiver with lock washer (rifle grip) and machine screw (rifle grip).

d. Using 5/16-inch flat-tip screwdriver, secure to receiver (Figure 71).



Figure 71. Securing Pistol Grip to Receiver.

e. Grasp lock release lever pull downward and insert buttstock onto lower receiver extension (Figure 72).



Figure 72. Buttstock Assembly and Lower Extension.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

SUPER SELECT FIRE (SSF) TRIGGER MAINTENANCE

INITIAL SETUP:

Tools
Armorer's Hammer (WP 0062, Item 3)

Materials Required
Molybdenum Disulfide Grease (WP 0061, Item 18)
CLP/Oil (WP 0061, Item 9)

Personnel Required
Qualified Armorer (1)

Reference
WP 0019
WP 0021

Equipment Condition
Weapon fieldstripped (WP 0012)
Original trigger removed (WP 0019)

ASSEMBLY

CAUTION

No maintenance procedures are to be performed on SSF trigger. Installation and removal only. Failure to observe this caution could result in equipment damage.

NOTE

Removal and installation of original factory trigger procedures are found in WP 0019. Original factory trigger must be retained and reinstalled before weapon is turned into supply or returned for depot-level maintenance.

Clean receiver prior to installation of new SSF trigger.

1. Place one drop of oil on both sides of disconnector (Figure 1, Item 1) above hammer pin (Figure 1, Item 2).



Figure 1. Disconnector and Hammer Pin.

CAUTION

New SSF trigger assembly is held together with pilot pin. Do not push pilot pin out without using supplied trigger pin. SSF trigger assembly components will separate. Failure to observe this caution could result in weapon damage.

NOTE

Use supplied pilot pin to keep disconnector aligned when installing trigger.

Use of soft surface hammer may be required for trigger pin installation.

2. With spring legs facing forward, place SSF trigger assembly (Figure 2, Item 1) into receiver (Figure 2, Item 2), aligning pilot pin with trigger pin holes in receiver.

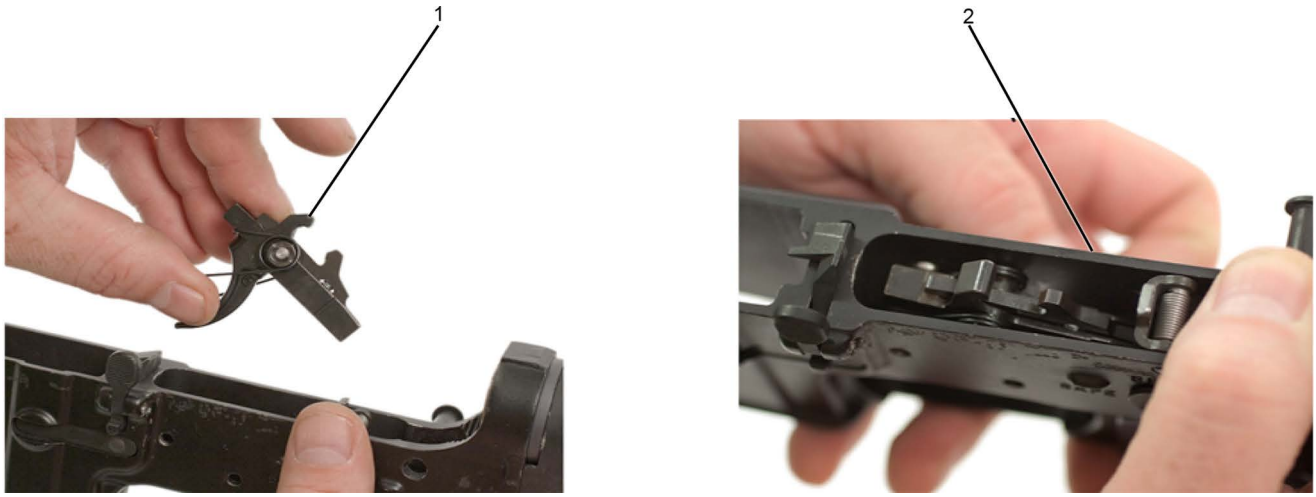


Figure 2. Installing Trigger Assembly.

3. Holding SSF trigger assembly in place, insert trigger pin (Figure 3, Item 1) into receiver and push through (Figure 3, Item 2) until flush, replacing pilot pin with actual trigger pin. Trigger pin (Figure 3, Item 3) should be flush with both sides of receiver.



Figure 3. Installing Trigger Pin.

4. Place one drop of oil in bore of hammer pivot (Figure 4).



Figure 4. Oiling Hammer Pivot Bore.

NOTE

Use of soft surface hammer may be required to install hammer pin.

Position hammer spring prior to installation.

5. Insert hammer assembly (Figure 5, Item 1) into receiver (Figure 5, Item 2), ensuring hammer spring legs are on top of trigger pin (Figure 5, Item 3) and facing rear.

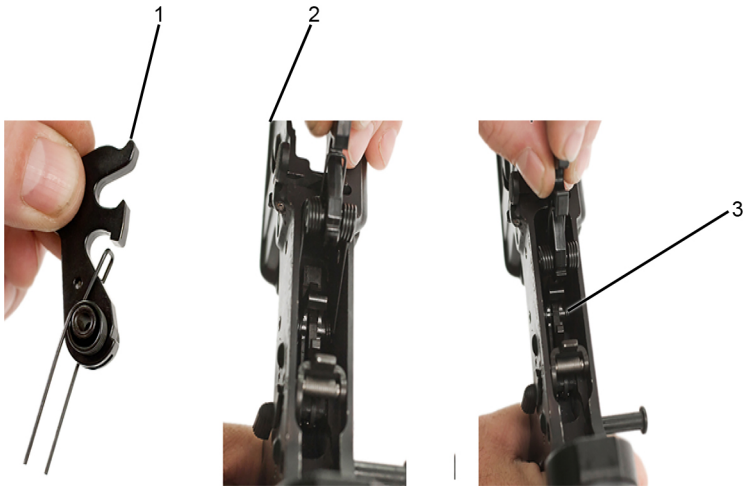


Figure 5. Installing Hammer Assembly.

6. Holding hammer assembly in position, insert hammer pin (Figure 6, Item 1) into hammer pin hole in receiver.



Figure 6. Installing Hammer Pin.

7. Using armorer's hammer, drive hammer pin (Figure 7, Item 1) through until flush, replacing pilot pin with actual hammer pin. Hammer pin should be flush with both sides of receiver.



Figure 7. Driving Hammer Pin Through Receiver.

8. Using a punch, place small amount of molybdenum disulfide grease on hammer (Figure 8, Item 1), trigger sear (Figure 8, Item 2), and disconnector face (Figure 8, Item 3).



Figure 8. Greasing Trigger Assembly.

9. Check safety operation.

   a. Reassemble weapon from fieldstrip In Accordance With (IAW) WP 0021.

   b. Place selector on SAFE position.

c. Pull charging handle to rear and release.

d. Pull trigger; hammer should not fall.

10. Check trigger reset.

a. Place selector on SEMI position.

b. Squeeze trigger and hold rearward.

c. Pull charging handle to rear and release; hammer should not fall.

d. Release trigger; listen for click indicating trigger reset.

e. Place selector on AUTO position.

f. Pull trigger and hold rearward.

g. Pull charging handle to rear and release; listen for hammer drop with bolt.

WARNING



Unintentional discharge hazard. SSF trigger functions as a two stage trigger on SEMI position only. On AUTO position, SSF trigger pull is single stage; there will be no distinct stop before weapon discharges. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, or equipment damage.

11. Check for presence of second stage.

a. Place selector on SEMI position.

b. Pull trigger until a distinct stop is felt (this is the second stage). Applying additional pressure to trigger will allow weapon to discharge.

c. Check trigger pull.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

ASSEMBLE FROM FIELDSTRIP

INITIAL SETUP:

Personnel Required
Qualified Armorer (1)

Reference
WP 0022

Tools
Needlenose Pliers (WP 0062, Item 8)

Equipment Condition
Weapon fieldstripped (WP 0012)

ASSEMBLE FROM FIELDSTRIP

1. Before assembling from fieldstrip, weapon should be in fieldstrip condition (Figure 1 and Figure 2).



Figure 1. Rail Interface System (RIS) II Upper Receiver Group (URG) Fieldstripped.



Figure 2. Upper Receiver Group Improved (URG-I) Fieldstripped.

2. Insert buffer into buffer spring (Figure 3).



Figure 3. Inserting Buffer into Buffer Spring.

3. Insert buffer assembly into buffer tube.

4. Insert end of spring first and override buffer retaining pin with head of buffer (Figure 4).



Figure 4. Installing Buffer and Buffer Spring.

5. Insert bolt into key and bolt carrier assembly (Figure 5).

   a. Ensure gaps in gas rings are at least 90º apart.

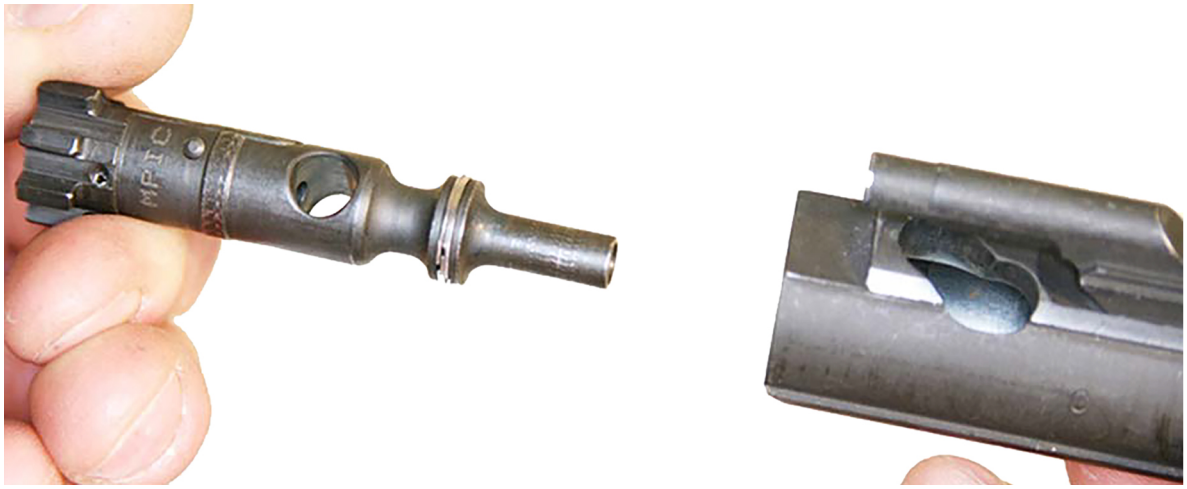


Figure 5. Ensuring Gaps in Gas Rings.

   b. Align cam pin hole in bolt with cam pin hole in key and carrier assembly. Insert cam pin and rotate cam pin 1/4 turn (Figure 6).



Figure 6. Removing Cam Pin from Bolt Carrier.

c. While keeping cam pin in orientation described above, insert firing pin into rear of key and carrier assembly. Ensure firing pin fully seats into rear of bolt (Figure 7).



Figure 7. Inserting Firing Pin.

d. Ensure firing pin is fully inserted before installing firing pin retaining pin into recess in side of bolt carrier group using needlenose pliers (Figure 8).



Figure 8. Installing Firing Pin Retaining Pin.

6. Install charging handle into URG. Do not fully insert charging handle, allow for approximately 3 inches of charging handle remain extended (Figure 9).



Figure 9. Installing Charging Handle.

7. Insert bolt carrier group into URG.

   a. Ensure bolt is in fully EXTENDED position.

   b. Ensure gas key is resting in channel of charging handle (Figure 10).



Figure 10. Gas Key Resting in Channel of Charging Handle.

   c. Close dust cover and apply pressure to hold dust cover closed.

8. Hold Lower Receiver Group (LRG) vertically with buttstock down and install URG.

9. Ensure takedown pin holes are properly aligned and push takedown pin inward from right hand side.

END OF TASK

ASSEMBLE FROM FIELDSTRIP LAW FOLDING STOCK

1. After completing step 1 through step 9, depress latch on LAW folding stock and collapse stock into STORED position (Figure 11).



Figure 11. Collapsing Stock into STORED Position.

2. Rear of bolt carrier group should be visible, install bolt carrier extension into bolt carrier group.

3. Ensure front shoulder of bolt carrier extension is flush with rear of bolt carrier group.

4. Unfold stock and ensure stock is fully locked into place in FIRING position (Figure 12).



Figure 12. Stock in Fully Locked and in FIRING Position.

5. Perform function safety check In Accordance With (IAW) WP 0022.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE

SAFETY/FUNCTION CHECK

INITIAL SETUP:

Tools
Cleaning Rod Section (WP 0062, Item 12)

Equipment Condition
Complete weapon (WP 0021)

Personnel Required
Qualified Armorer (1)

SAFETY/FUNCTION CHECK

WARNING



Unintentional discharge hazard. Prior to safety/function check, clear weapon. Do not squeeze trigger until weapon has been cleared. Inspect chamber to ensure it is empty and no ammunition is in position to be loaded. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

NOTE

When weapon fails a safety/function check, weapon must be repaired before using.

1. Point weapon is in a safe direction, attempt to place selector lever on SAFE. If weapon is not cocked, lever cannot be placed on SAFE.
2. If magazine is present, remove magazine by depressing magazine catch button and pulling magazine downward.
3. To lock bolt to rear, pull charging handle rearward and hold. Press bottom of bolt catch and allow bolt to move forward until it engages bolt catch. Return charging handle to full FORWARD position and place selector lever on SAFE. Check receiver and chamber to ensure these areas contain no ammunition.
4. With selector lever places on SAFE, allow bolt to go forward by pressing upper portion of bolt catch.
5. Squeeze trigger; hammer should not fall.
6. Place selector lever on SEMI.
7. Squeeze trigger and hold to rear; hammer should fall. Do not release trigger.
8. Holding trigger to rear, cycle bolt and slowly release trigger; an audible click should be heard. Squeeze trigger hammer should fall.

9. Pull charging handle to rear, charging weapon. Place selector lever on AUTO. Squeeze trigger, hammer should fall.

10. Using charging handle, cycle bolt three times while holding trigger to rear; hammer must follow bolt home each cycle.

11. Release trigger; click should not be heard.

12. Using charging handle, cycle bolt and place selector lever on SAFER.

13. Insert magazine with three dummy rounds into weapon.

14. Pull down on magazine to ensure magazine catch engages.

15. Ensure magazine is fully seated.

16. Pull charging handle to rear and release.

17. Repeat step 16 until dummy rounds are cycled through weapon. Bolt carrier should lock to rear after last round is ejected.

18. Remove magazine and ensure chamber is empty.

19. Press top tang of bolt catch releasing bolt.

20. Press selector lever on SAFE.

END OF WORK PACKAGE

FIELD MAINTENANCE

GAUGING

INITIAL SETUP:

Test Equipment
Trigger Pull Fixtures (WP 0062, Item 9)
Borescope (WP 0062, Item 13)

Special Tools
Firing Pin Protrusion Gauge (WP 0057, Item 5)
Firing Pin Hole No-Go Plug Gauge (WP 0057, Item 2)
Barrel Erosion Gauge (WP 0057, Item 3)
Headspace Gauge (WP 0057, Item 4)
Bore Straightness Gauge (WP 0057, Item 16)

Personnel Required
Qualified Armorer (1)

Reference
WP 0013
WP 0015
WP 0016
WP 0017
WP 0018
WP 0019
WP 0022
WP 0020
WP 0021

Equipment Condition
Weapon fieldstripped (WP 0012)

NOTE

The below gauging procedures apply to both the Upper Receiver Group (URG) Rail Interface System (RIS) II and the Upper Receiver Group Improved (URG-I) variants.

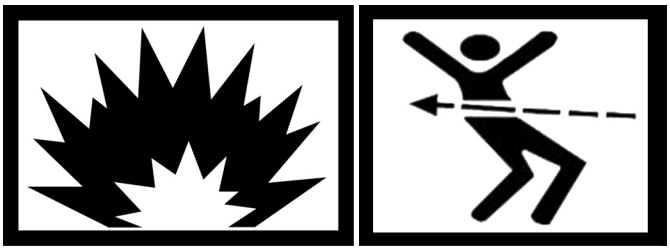
GAUGING REQUIREMENTS

Gauging inspections shall take place In Accordance With (IAW) maintenance requirement cards, as needed and annually. Gauging should be completed as part of troubleshooting when investigating weapon malfunctions or when critical parts are replaced or repaired (i.e., replacement of bolt).

GENERAL

Safety dictates critical tolerance instances be measured via gauges in order to prevent catastrophic failure of Carbine, 5.56mm, M4A1 with URG.

WARNING



Weapon firing hazard. Prior to gauging, clear weapon. Inspect chamber to ensure it is empty and no ammunition is in position to be loaded. Do not squeeze trigger until weapon is cleared. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

Weapon firing hazard. Failure to comply with gauging requirements could result in weapon firing out of battery or failing to fire when needed. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

HEADSPACE GAUGE

NOTE

Do not install firing pin at this time.

1. Assemble charging handle, bolt assembly, key and bolt carrier assembly into URG. Insert headspace gauge (Figure 1) into chamber (Figure 2).

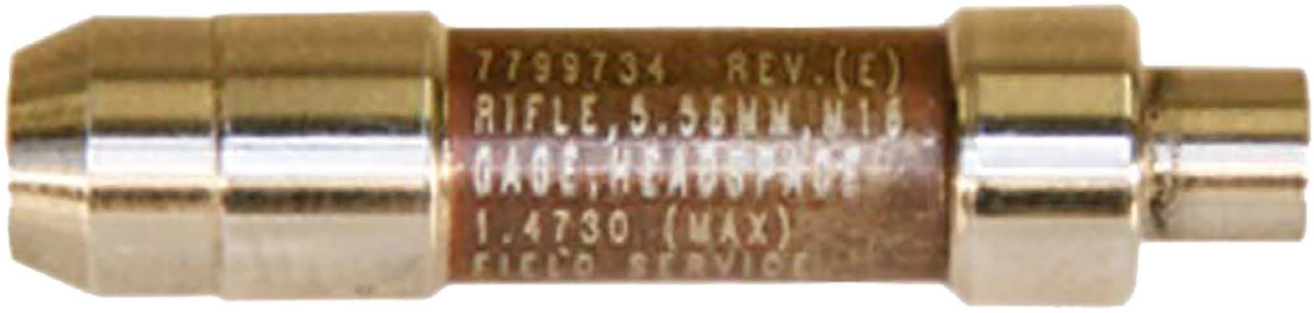


Figure 1. Headspace Gauge (Field Service).



Figure 2. Inserting Headspace Gauge (Field Service).

2. Check headspace by pressing key and bolt carrier assembly and charging handle assembly forward using light finger pressure (Figure 3).



Figure 3. Checking Headspace.

3. Bolt should not rotate to LOCKED. Key and bolt carrier assembly must protrude from rear of URG for proper headspace (Figure 4).



Figure 4. Correct Headspace.

4. If bolt locks into upper receiver, replace bolt and recheck. If headspace is not corrected, replace carbine (Figure 5).



Figure 5. Incorrect Headspace.

END OF TASK

BARREL EROSION GAUGE

NOTE

When gauging barrel erosion, ensure to use proper URG barrel erosion gauge.

When gauging barrel erosion, ensure to use proper mark for each URG variant.



Figure 6. Barrel Erosion Gauge.

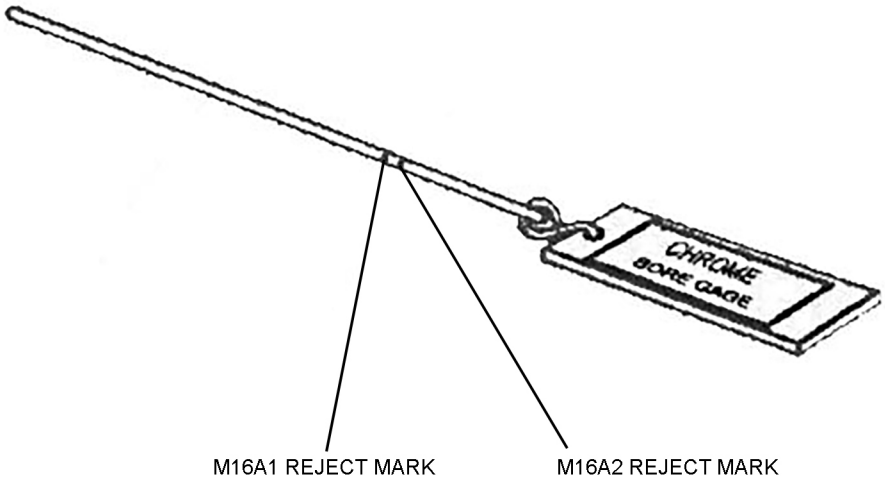


Figure 7. M16A1/M16A2 Reject Mark.

1. With bolt assembly and firing pin removed, install charging handle, key and bolt carrier assembly into upper receiver. Hold carbine vertical with receiver up.

2. Insert barrel erosion gauge into rear of URG. Apply light finger pressure (Figure 8).

   a. **For 10.3 inch URG RIS II:** If M16A1 reject mark passes beyond rear surface of key and bolt carrier assembly, barrel is unserviceable. Replace barrel IAW WP 0015 if authorized by component. For all other personnel, replace defective URG.

   b. **For 14.5 inch URG RIS II:** If M16A1 reject mark passes beyond rear surface of key and bolt carrier assembly. Barrel is unserviceable. Replace barrel IAW WP 0016 if authorized by component. For all other personnel, replace defective URG.

   c. **For 11.5 inch URG-I:** If X reject mark passes beyond rear surface of key and bolt carrier assembly, barrel is unserviceable. Replace barrel IAW WP 0017 if authorized by component. For all other personnel, replace defective URG.

   d. **For 14.5 inch URG-I:** If X reject mark passes beyond rear surface of key and bolt carrier assembly, barrel is unserviceable. Replace barrel IAW WP 0018 if authorized by component. For all other personnel, replace defective URG.



Figure 8. M16A1 Reject Mark.

END OF TASK

BARREL STRAIGHTNESS

NOTE

Prior to gauging barrel straightness, ensure bore and chamber areas are clean and free to obstructions.

Gauging is required with and without suppressor installed, when applicable.



Figure 9. Bore Straightness.

Holding upper receiver vertically, insert bore straightness gauge into muzzle end of barrel. Ensure gauge does not drop onto hard surface; use folded rag or palm of hand to catch gauge. Gauge should fall freely without assistant (Figure 10).



Figure 10. Gauge Should Fall Freely Without Assistance.

FIRING PIN HOLE PLUG GAUGE

1. Place firing pin hole plug gauge (Figure 11, Item 1) to firing pin hole (Figure 11, Item 2) on bolt face and rotate 360°.

2. If plug gauge penetrates firing pin hole at any position on circumference, bolt shall be rejected and replaced. Upon replacement of bolt, check headspace. Refer to Headspace Gauge on page 0023-2.

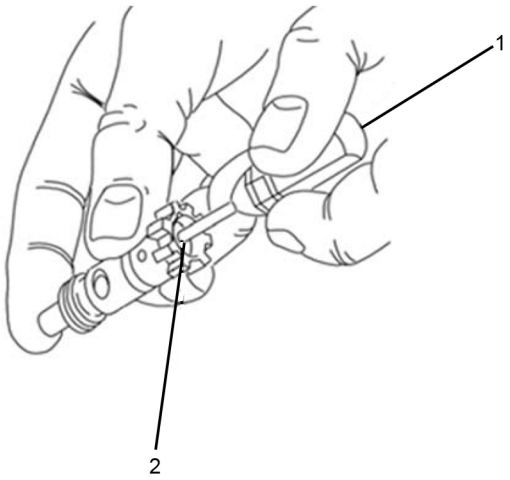


Figure 11. Firing Pin Hole Plug Gauge, No-GO (Field Service).

Firing Pin Protrusion Test

WARNING



Weapon firing hazard. Failure to comply with gauging requirements could result in weapon firing out of battery or failing to fire when needed. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or death.

NOTE

Firing pin should contact minimum gauging and clear maximum gauge.

Some gauging requires weapon to be fieldstripped. Weapon shall be cleaned prior to gauging.

Do not install firing pin at this time.

1. Insert firing pin (Figure 12, Item 3) through bolt (Figure 12, Item 2) and hold against bolt. Position firing pin protrusion gauge (Figure 12, Item 1) to check for proper firing pin protrusion (minimum 0.028 inch [0.07 centimeter {cm}] and maximum 0.036 inch [0.09 cm]).

2. With gauge perpendicular to bolt face and making continuous contact with bolt face, slide minimum (0.028) notch over firing pin and feel for contact between minimum (0.028) notch of gauge and firing pin. Contact need not be substantial, but must be present. If no contact is noted, firing pin protrusion is too short.

3. If contact is not present, ensure both bolt and firing pin are clean and retry. If after cleaning contact is still not noted, replace firing pin and test again. It may be necessary to replace both bolt and firing pin. If bolt is replaced, gauge headspace.

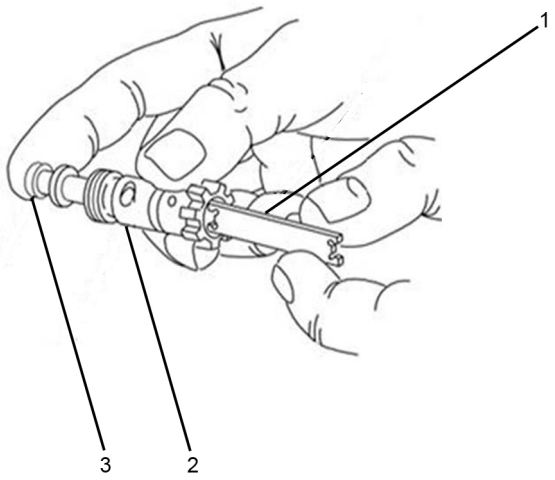


Figure 12. Firing Pin Protrusion Test.

4. Follow same procedure with maximum (0.036) side of gauge. When using maximum (0.036) side of gauge, contact must not be felt. If contact is noted, firing pin protrusion is too long.

5. If contact is made between maximum (0.036) notch and firing pin, replace firing pin and test again. It may be necessary to replace both bolt and firing pin. If bolt is replaced, gauge headspace.

END OF TASK

TRIGGER PULL

NOTE

Trigger pull of Carbine, 5.56mm, M4A1 will have minimum weight of 5.5 pound (lbs) and maximum weight of 8.5 lbs. The trigger pull weight for the Super Select Fire (SSF) is 4.25 lbs minimum and 4.75 lbs maximum. The fully automatic pull weight is 6.0 lbs.

1. Charge weapon.

2. Place selector lever on SEMI, and hold weapon in VERTICAL position.

3. Add weights to trigger pull measuring fixture until minimum load of 5.25 lb is reached.

4. Place end of trigger pull measuring fixture over trigger.
5. Slowly raise weapon until fixture and weights are suspended from table; hammer must not fall.
6. Add weights to trigger pull measuring fixture until maximum load of 8.5 lb is reached.
7. Slowly raise weapon until fixture and weights are suspended above table; hammer must fall.
8. If trigger pull test fails, replace trigger IAW WP 0019 and WP 0020 Repeat trigger pull test.

END OF TASK

SUSPENSION TEST

1. Assemble bolt and bolt carrier group IAW WP 0021.
2. Pull bolt into RETRACTED position (CLOSED position).
3. Place bolt and bolt carrier group bolt face down onto work surface.
    a. If bolt remains in RETRACTED position, it passes suspension test. The suspension test is complete.
    b. If bolt collapses back into bolt carrier, it fails suspension test.
4. If bolt fails suspension test, replace bolt rings IAW WP 0013 or WP 0021.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

BORESCOPE MAINTENANCE

INITIAL SETUP:

Personnel Required	Equipment Condition
Qualified Armorer (1)	Weapon fieldstripped (WP 0012)

TECHNICAL DATA

Borescope is a precision optical instrument used to see inside of rifle barrel or suppressor and conduct inspections otherwise impractical or impossible. Borescope is capable of straight ahead views (0°) or side views (90°) through use of accompanying mirror tube.

Glass optical fibers carry light from attached battery operated light source to tip of scope. Image is relayed through inner tube to eyepiece. This provides inspector with magnified acute visual details of inner portion of barrel (lands and grooves) and of chamber and throat these visual details are used to determine barrel wear, flaws, and prior maintenance practices. To a certain extent, remaining life of barrel can be determined.

BACKGROUND

Barrels contain lands and grooves providing bullet twist to stabilize flight of bullet and sustain trajectory. Depending on bullet weight, length, tail design, and other variables, different levels of accuracy measured in minutes of angle are achieved but rely heavily on condition of barrel. Barrels with a substantial number of rounds fired through them or those poorly maintained will have decreased accuracy due to wearing of lands and grooves, buildup of bullet jacket material fouling, or pitting and rust. This wearing or scarring of barrel bore will be readily identifiable when viewed through borescope.

BORESCOPE MAINTENANCE

Each borescope comes with a User Guide. Follow manufacturer’s recommendations for borescope maintenance.

INSPECTING

NOTE

Weapon shall be cleaned prior to borescoping.

1. To inspect chamber and throat of barrel, use straight-ahead viewing tube. Activate light source and place eye over eyecup.

2. Inspect chamber/throat area for gouges, burrs, rust, and pitting. If substantial defects (effect function or accuracy) are noted, contact Naval Surface Warfare Center (NSWC) Crane for further guidance.

3. To inspect bore, attach side viewing tube and insert into barrel starting from chamber end. Activate light source and place eye over eyecup or if attached to video monitor, watch monitor. Feed borescope through both chamber end and muzzle end of barrel to get complete view of bore.

4. Rotate knurled knob to gain a 360° view and move tube full length of barrel.

5. While viewing bore, attempt to identify flaws in barrel such as:

- Decreased or marred surface area of grooves
- Rust or pitting
- Copper fouling fused to lands or grooves
- Carbon or lead buildup on lands or in grooves
- Chipping/flaking of lands
- Excessive alligator skin type appearance of lands and grooves.

NOTE

The following pages contain pictures of barrel bores in various conditions and states of wear with explanations for each.

Note smooth, polished appearance of barrel bore.

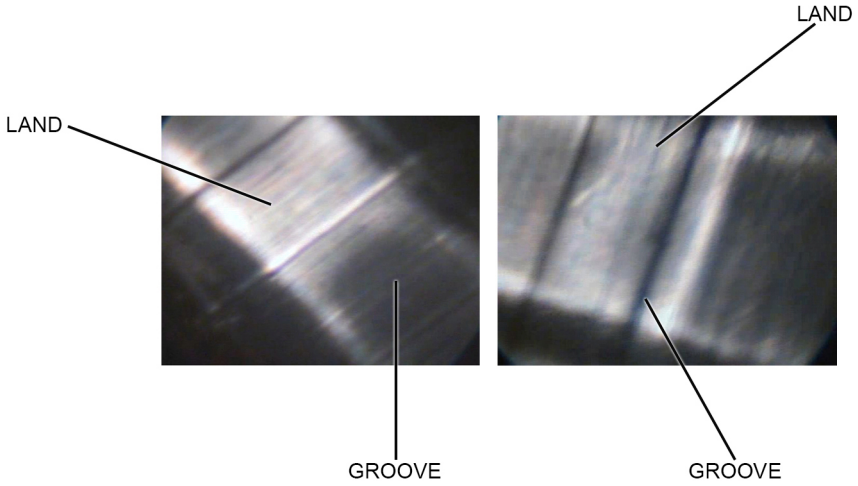


Figure 1. New Barrels.

Rust or copper buildup in bore is product of poor weapon maintenance (Figure 2). This will lead to further deterioration of barrel, which in turn will severely deplete accuracy. If this issue is not addressed immediately, it will render weapon useless.

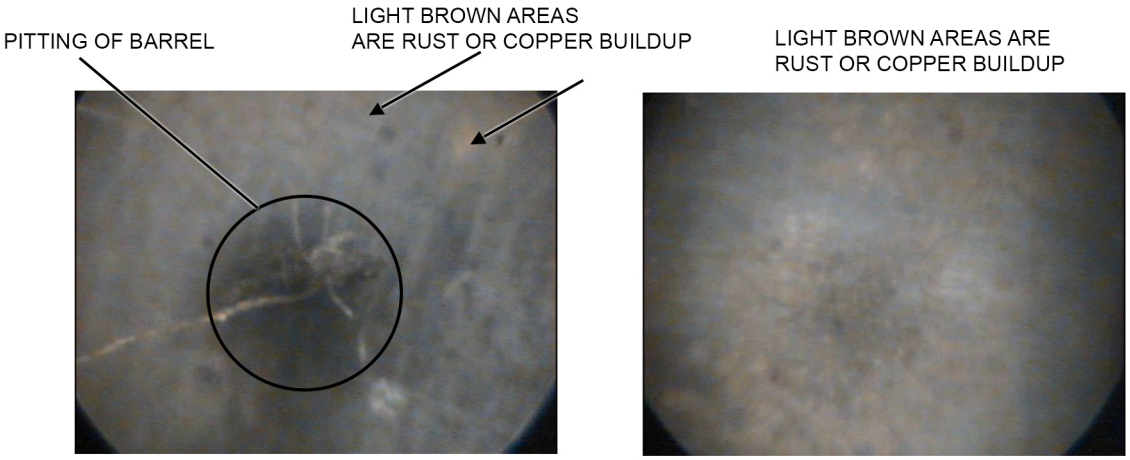


Figure 2. Moderate Use.

Heat checking is normal wear on a barrel (Figure 3); however, this process can be slowed if weapon maintenance is performed. If weapon maintenance is poor, heat checking can be accelerated cutting barrel life shorter than normal.

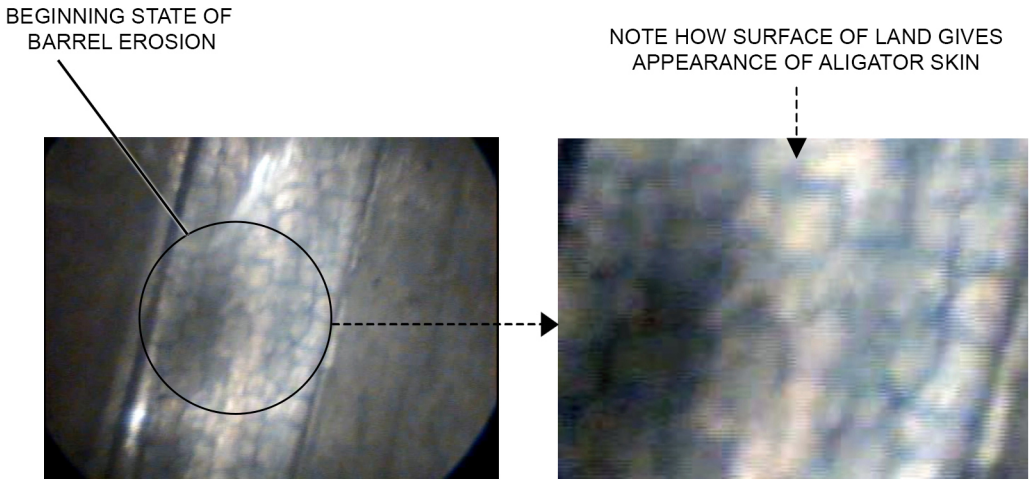


Figure 3. Barrel Erosion.

This condition is normal for barrels with extreme use, poorly maintained, or shot repeatedly without cleaning (Figure 4). Barrels in this condition shall be replaced.

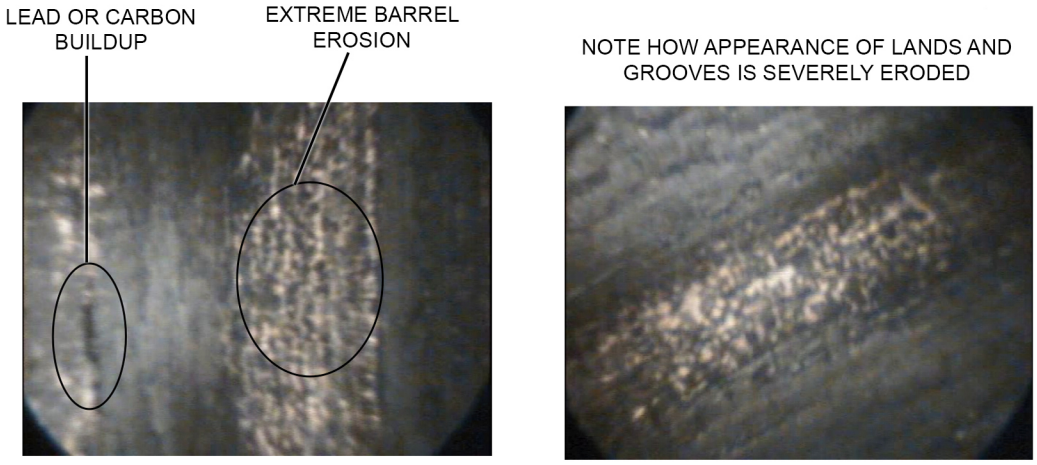


Figure 4. Unserviceable Barrel.

NOTE

Upon inspection of gas port with borescope gas port erosion channels exceeding twice gas port diameter should be a cause rejection of the barrel. Replace barrel if authorized by the component.

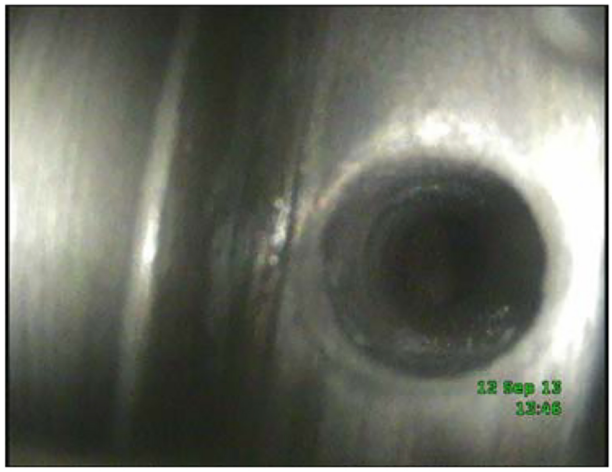


Figure 5. Gas Port - New Barrel.



Figure 6. Gas Port with Normal Wear.

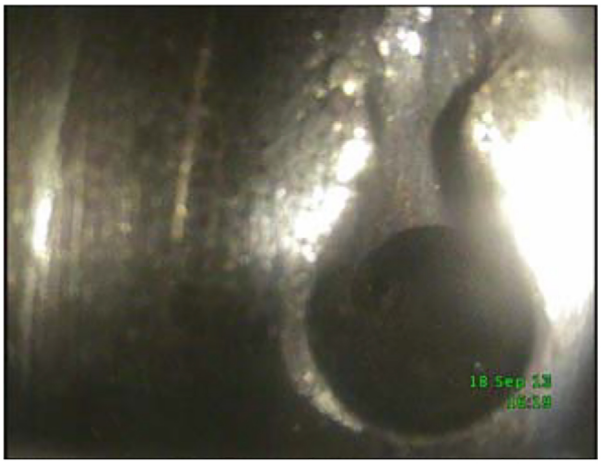


Figure 7. Gas Port with Wear Unacceptable for Combat Use (Training Use Only).

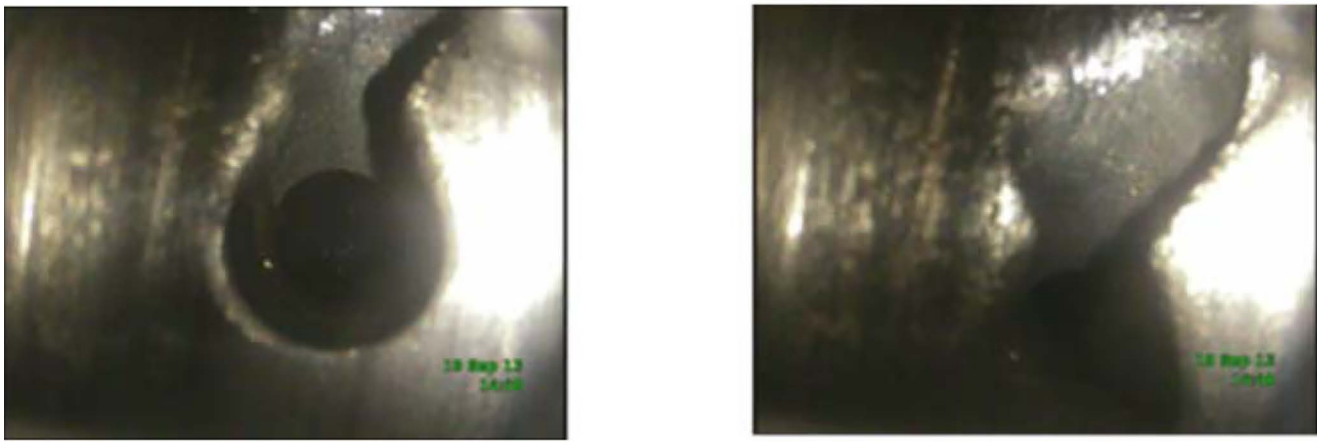


Figure 8. Gas Port Excessive Wear - Replace Barrel.

SUMMARY

Life expectancy of Carbine, 5.56mm URG barrel is approximately 6,000 rounds and the life expectancy of carbine 5.56mm with Cold Hammer Forged (CHF) Upper Receiver Group Improved (URG-I) barrel is 20,000 rounds. Barrel life may be shortened or extended depending on how diligent operator is with weapon maintenance. Weapon maintenance is key to properly functioning and accurate weapon.

END OF WORK PACKAGE

FIELD MAINTENANCE

10.5 AND 13.5 UPPER RECEIVER GROUP IMPROVED (URG-I) MODULAR HANDGUARD MAINTENANCE

INITIAL SETUP:

Tools
5/64-inch Hex Wrench (WP 0062, Item 7)
T30 Torx Bit (WP 0062, Item 15)
1/2-inch Drive ft•lb Torque Wrench (WP 0062, Item 24)
Vise (WP 0062, Item 21)
Scribe (WP 0062, Item 19)
5/64-inch Punch (WP 0062, Item 10)

Special Tools
Action Rod (WP 0057, Item 14)
Rail Alignment Block (WP 0057, Item 17)

Materials Required
CLP (WP 0061, Item 9)
Cotton Swab (WP 0061, Item 30)

Personnel Required
Qualified Armorer (1)

Equipment Condition
Weapon fieldstripped (WP 0012)

URG-I DISASSEMBLY

NOTE

This Work Package (WP) assumes that the hardware needs replacement and does not provide replacement criteria.

CAUTION

The shoulder of action rod has to be against vice jaws. Failure to observe this caution could result in equipment damage.

1. Place action rod in vise with shoulder touching side of vise jaws (Figure 1).
2. Tighten vise until action rod is secure.

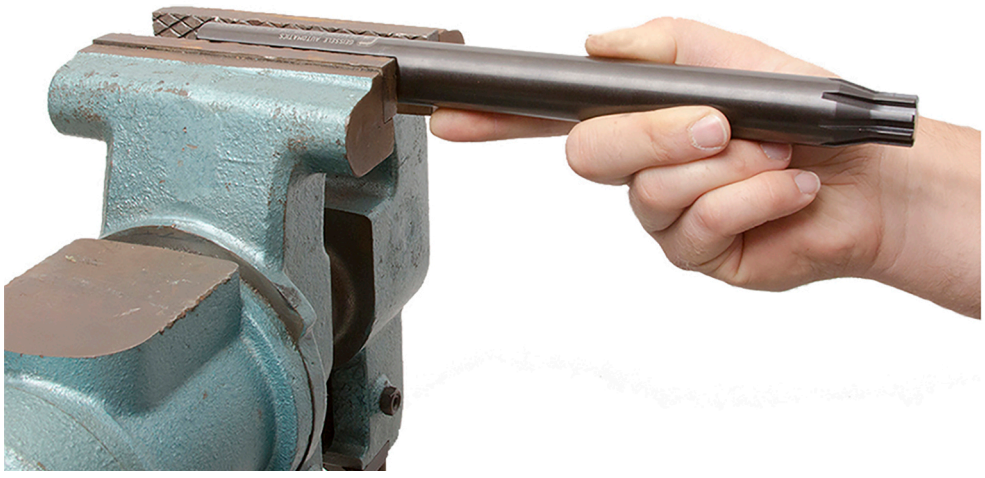


Figure 1. Placing Action Rod in Vise.

CAUTION

If barrel extension is not fully seated onto action rod, damage to equipment may occur.

3. Install upper receiver assembly on action rod in 12 o'clock position.

END OF TASK

HARDWARE REMOVAL

1. Using 5/64-inch hex wrench, remove and dispose of two rail alignment setscrews (Figure 2, Item 1).

2. Using T30 Torx bit and bit driver, loosen two retaining rail mounting bolts and pull outward to above 1/2 of full RETRACTED position.

NOTE

After completion of step 2, notice interface between upper receiver and handguard.

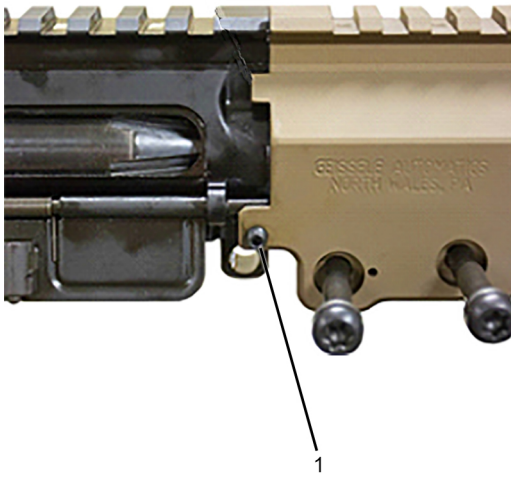


Figure 2. Removing Retaining Rail Mounting Bolts.

3. Remove handguard from Upper Receiver Group (URG) (Figure 3, Item 1).



Figure 3. Removing Handguard from URG.

4. Place handguard down horizontally on work surface. With 3 o'clock side of rail facing upwards (Figure 4).



Figure 4. Placing Handguard on Work Surface.

5. Remove rail mounting bolt detents and spring.

   a. Insert 5/64-inch punch into detent access hole. Some downward force will be required (Figure 5).



Figure 5. Inserting Punch into Detent Access Hole.

   b. Once punch has been inserted, rear rail mounting bolt can be removed (Figure 6).



Figure 6. Removing Rear Rail Mounting Bolt.

   c. Once 5/64-inch punch is removed, spring and detents will fall free out of rear of the handguard.

d. The forward rail mounting bolt can be removed freely, remove forward rail mounting bolt (Figure 7).



Figure 7. Removing Forward Rail Mounting Bolt.

6. Separate rail mounting bolts, washers, and tandem press nut from handguard. Dispose of rail mounting bolt retaining detents and spring In Accordance With (IAW) local procedures (Figure 8).



Figure 8. Separating Rail Mounting Bolts, Washers, and Tandem Press Nut from Handguard.

7. Remove tandem press nut using scribe (Figure 9).



Figure 9. Removing Tandem Press Nut.

END OF TASK

HARDWARE INSTALLATION

1. Place handguard down horizontally on work surface (Figure 10). With 3 o'clock side of rail facing upwards.



Figure 10. Placing Handguard on Work Surface.

2. Install washer, front rail mounting bolt, and rail mounting bolt detents and spring.

   a. Ensure flat end of front rail mounting bolt detent is facing muzzle end of rail, followed by spring, and rear rail mounting bolt detent facing opposite direction.

   b. Ensure detent retainer is inserted into spring on both ends (Figure 11).

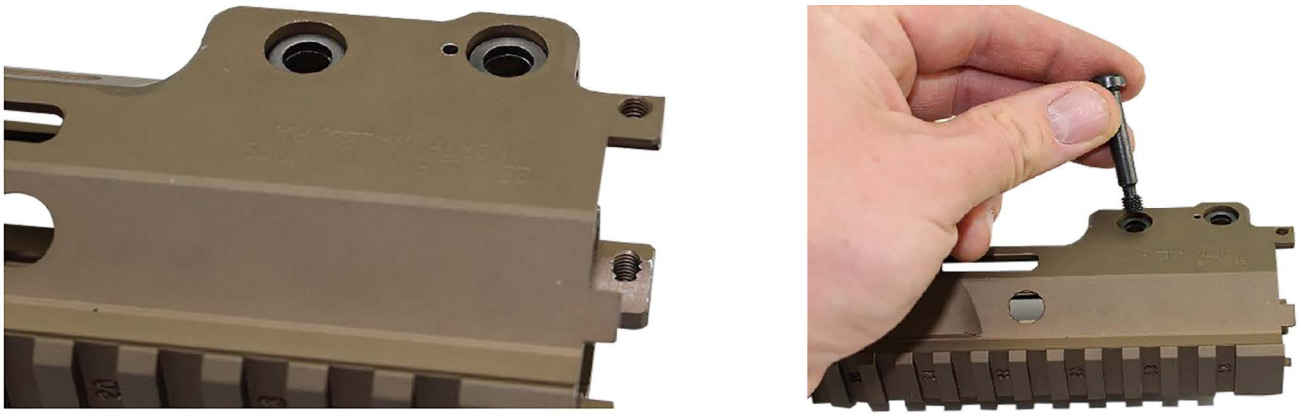


Figure 11. Installing Washer, Front Rail Mounting Bolt, and Rail Mounting Bolt Detent and Spring.

NOTE

Some downward force will be required.

3. Insert 5/64-inch punch into rear of handguard, compress spring and detents and insert another 5/64-inch punch into detent access hole (Figure 12).



Figure 12. Compressing Spring and Detents.

4. Once detent is secures by second punch, remove first (rear) 5/64-inch punch.

5. Install washer and rear rail mounting bolt (Figure 13). The bolt should drop freely into slot.

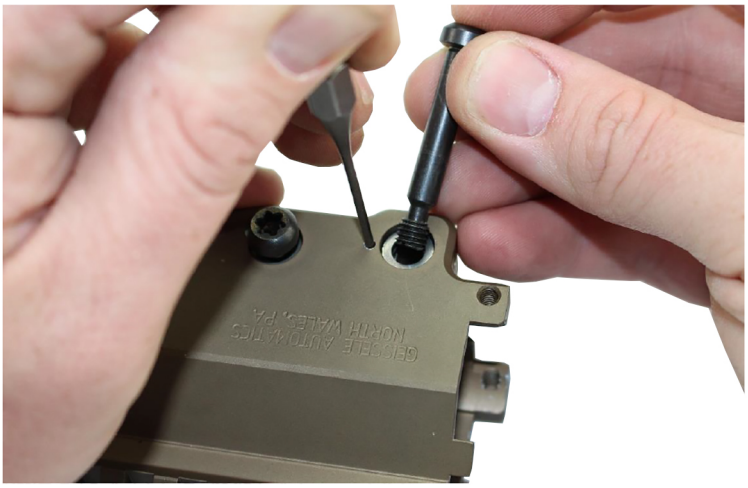


Figure 13. Installing Washer and Rear Rail Mounting Bolt.

6. Remove second 5/64-inch punch. An audible click should be heard.

7. Ensure rail mounting bolts can fully retract.

8. Install tandem press nut by pushing rail mounting bolts inward.

END OF TASK

INSTALL URG-I HANDGUARD

1. Install tandem press nut into pocket on handguard (Figure 14).



Figure 14. Installing Tandem Press Nut.

2. Loosen two retained rail mounting bolts and pull outward to RETRACTED position (Figure 15).



Figure 15. Loosening Two Retained Rail Mounting Bolts.

3. Ensure two rail alignment setscrews (Figure 16, Item 1) are retracted until they no longer protrude inside handguard flush with inside of handguard. Inspect rail alignment setscrews to ensure threads are free of any debris. Debris can be removed using nylon brush.

4. Lightly coat outer diameter of barrel nut and inner diameter of handguard with Cleaner, Lubricant and Preservative (CLP) (Figure 16).

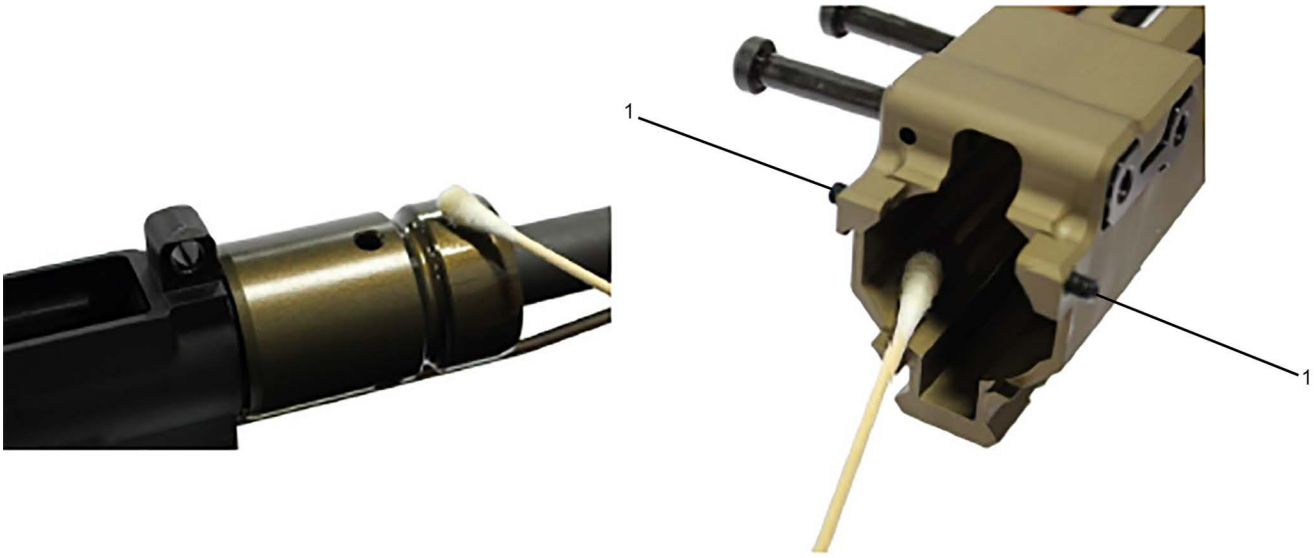


Figure 16. Coating Outer Diameter of Barrel Nut and Inner Diameter of Handguard.

5. Pull upper receiver assembly slightly forward until action rod is free from barrel extension. Rotate upper receiver assembly 180º and slide back onto action rod.

6. Align handguard with receiver and slide handguard over barrel until handguard contacts barrel nut (Figure 17).



Figure 17. Aligning Handguard with Receiver.

7. Slowly slide handguard over barrel nut while keeping handguard concentric with barrel to prevent binding, stopping short of engaging upper receiver cartridge (Figure 18).



Figure 18. Sliding Handguard Over Barrel Nut.

8. Align rail alignment tabs (Figure 19, Item 1) on handguard to flats below 12 o'clock rail on upper receiver cartridge. Continue to slide handguard over barrel nut until handguard is flush with upper receiver cartridge.

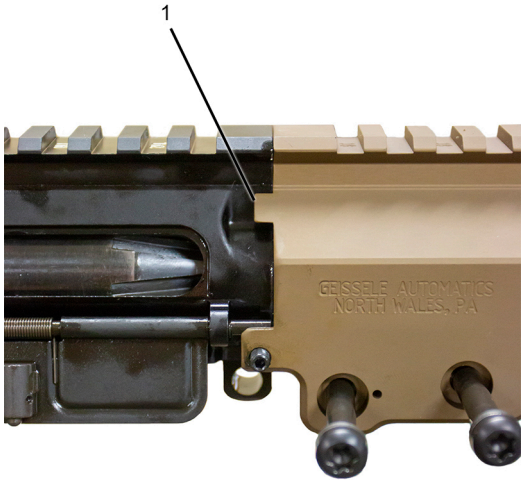


Figure 19. Aligning Rail Alignment Tabs.

CAUTION

Tightening rail mounting bolts when handguard is not installed on barrel nut may result in damage to handguard.

9. Insert retained rail mounting bolts until engaged with tandem press nut on reverse side. Slight movement of handguard may be necessary in order to line up holes with grooves in barrel nut (Figure 20).



Figure 20. Inserting Retained Rail Mounting Bolts.

10. Remove action rod and upper receiver from vise.

11. Place rail alignment block in vise.

12. Place URG into rail alignment block with handguard and upper receiver cartridge centered in alignment block. Tighten vise until URG is secure (Figure 21).

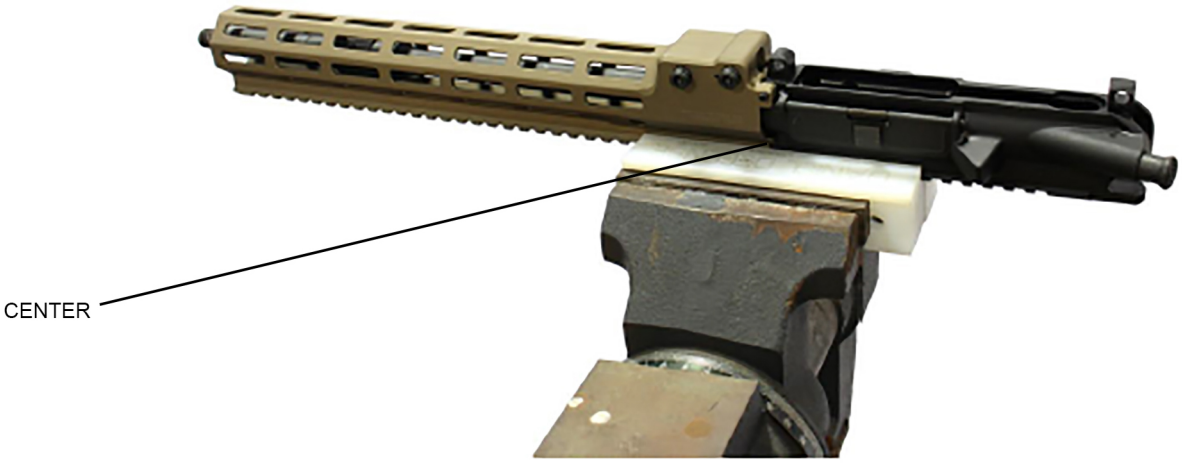


Figure 21. Placing URG into Rail Alignment Block.

CAUTION

Over tightening of hardware may result in equipment damage.

13. Using T30 Torx bit and inch-pound (in-lb) torque wrench, tighten two rail mounting bolts to 84 in-lb (Figure 22).

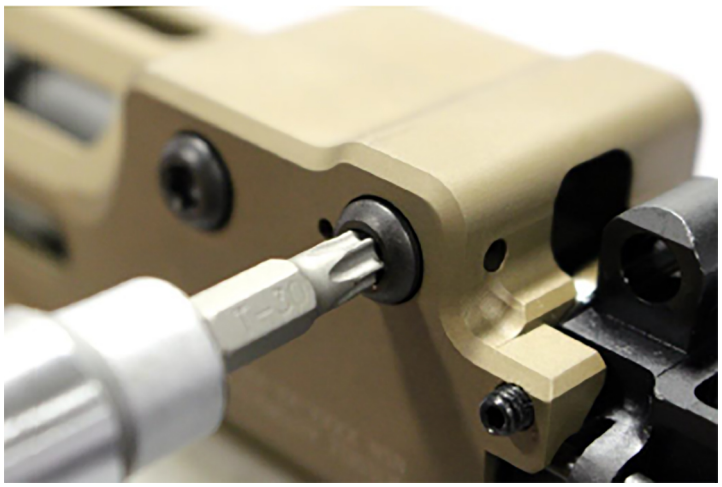


Figure 22. Tightening Rail Mounting Bolts.

14. Using 5/64-inch hex bit and torque wrench alternate tightening of both rail alignment setscrews until they contact upper receiver. Tighten to 15 in-lb (Figure 23).

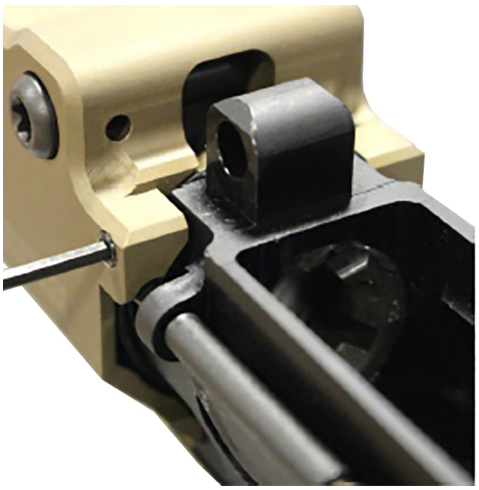


Figure 23. Tightening Rail Alignment Setscrews.

15. Remove URG and rail alignment block from vise. Visually inspect that 12 o'clock rails on handguard and upper receiver cartridge are aligned.

16. If rails do not align, disassemble rail system and reinstall.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

FIELD REJECT ASSESSMENT CHECKLIST

INITIAL SETUP:

Special Tools
Field Reject Headspace Gauge (WP 0057, Item 4)
Barrel Straightness Gauge (WP 0057, Item 16)
Firing Pin Hole Gauge (WP 0057, Item 2)
Firing Pin Protrusion Gauge (WP 0057, Item 5)
Trigger Pull Measuring Fixture (WP 0057, Item 11)

Materials
Wiping Rag (WP 0061, Item 27)

Personnel Required
Qualified Armorer (1)

References
WP 0022
WP 0023

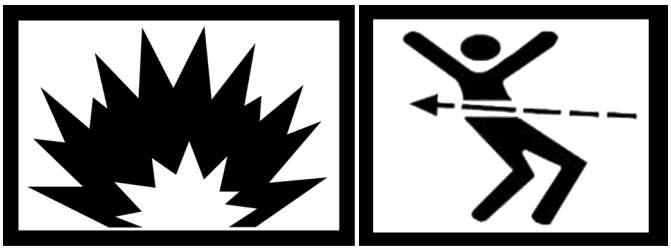
Equipment Condition
Weapon clear (WP 0010)
Weapon safe (WP 0022)

FIELD REJECT ASSESSMENT CHECKLIST



Figure 1. Carbine, 5.56*mm*, M4A1 with Upper Receiver Group (*URG*).

WARNING



Unintentional discharge and explosion hazard. Before starting inspection and gauging procedures, clear weapon. Do not pull trigger until weapon has been cleared. Inspect chamber to ensure it is empty and ammunition is not loaded. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury, death, damage or destruction of material or equipment.

Table 1. Field Reject Assessment Checklist.

INSPECTION	REQUIRED ACTION
1. Check weapon for obvious damage or defects that would prohibit its continued operation. a. Bends and breaks. b. Lack of spring action where there should be. c. Looseness of parts where there should not be. d. Lack of free movement where there should be. e. Missing parts.	1. Complete detailed inspection of damaged assembly or subassembly and replace as needed.
2. Check weapon for worn and shiny surfaces.	2. If surface finish is beyond capability of unit maintenance, reject weapon and complete necessary turn-in documentation (red tag).
3. Check barrel erosion using barrel erosion gauge. a. With bolt assembly and firing pin removed, install charging handle and key and bolt carrier assembly into upper receiver. Hold carbine vertical with receiver up. b. Insert barrel erosion gauge into rear of upper receiver assembly. Apply light finger pressure. If reject mark passes beyond rear surface of key and bolt carrier assembly, barrel is unserviceable.	3. If reject line of gauge is flush with back of receiver and bolt carrier, replace barrel assembly.

Table 1. Field Reject Assessment Checklist.-Continued.

INSPECTION	REQUIRED ACTION
4. Check headspace using headspace gauge. a. Assemble charging handle, bolt assembly, and key and bolt carrier assembly into upper receiver. Insert headspace gauge (field reject) into chamber. b. Check headspace by pressing key and bolt carrier assembly and charging handle assembly forward using light finger pressure. c. Bolt should not rotate to LOCKED position. Key and bolt carrier assembly must protrude from rear of upper receiver assembly for proper headspace. d. If bolt locks into upper receiver, replace bolt and recheck. If headspace is not correct, replace barrel.	4. If the event weapon is beyond field repair capability, reject weapon and return to Depot for refurbishment or demil.
5. Check barrel straightness using straightness gauge. a. Separate lower receiver from upper receiver. b. Remove bolt carrier assembly and charging handle from upper receiver. c. Holding upper receiver vertically, insert barrel straightness gauge into muzzle end of barrel. Ensure gauge does not drop onto hard surface; using folded rag or palm of hand to catch gauge. Gauge should fall freely without assistance.	5. If barrel straightness gauge does not pass through entire barrel with no binding, clean barrel using clean rag and recheck. If gauge still does not pass through, replace barrel if authorized or return to NSWC Crane.
6. Check firing pin hole plug gauge using plain plug gauge. a. Place firing pin hole gauge to firing pin hole on bolt face. b. If plug gauge penetrates firing pin hole at any position on circumference, bolt should be rejected and replaced.	6. Replace bolt as necessary.

Table 1. Field Reject Assessment Checklist.-Continued.

INSPECTION	REQUIRED ACTION
NOTE Firing pin should contact minimum gauging and clear maximum gauge. Some gauging requires weapon to be fieldstripped. Weapon shall be cleaned prior to gauging. Do not install firing pin at this time. 7. Check firing pin protrusion using firing pin protrusion gauge. a. Go Gauge. (1) Insert firing pin through bolt and hold against bolt. Position firing pin protrusion gauge to check for proper firing pin protrusion (minimum 0.028 inch [0.07 cm^1] and maximum 0.036 inch [0.09 cm]). (2) With gauge vertical to bolt face and making continuous contact with bolt face, slide Go notch over firing pin and feel for contact between GO notch of gauge and firing pin. Contact need not be substantial, but must be present. If no contact is noted, firing pin protrusion is too short. (3) If contact is not present, ensure both bolt and firing pin are clean. If after cleaning, contact is still not noted, replace firing pin and test again. It may be necessary to replace both bolt and firing pin. If bolt is replaced, gauge headspace. b. NO GO Gauge. (1) Follow same procedure with NO GO side of gauge. While moving NO GO side of gauge, contact must not be felt. If contact is made between NO GO notch and firing pin, protrusion is too long. (2) If contact is made between NO GO notch and firing pin, replace firing pin and test again. It may be necessary to replace bolt and firing pin. If bolt is replaced, gauge headspace.	7. Replace parts as necessary (firing pin and/or bolt).

Table 1. Field Reject Assessment Checklist.-Continued.

INSPECTION	REQUIRED ACTION
NOTE Refer to required action step 8 for SSF[2] trigger weights. Trigger pull for M4A1 carbine will have minimum weight of 5.5 lb[3] and maximum weight of 8.5 lb.	
8. Check trigger pull. a. Charge weapon. b. Place selector lever on SEMI position and hold weapon in VERTICAL position. c. Add weights to trigger pull measuring fixture over trigger. d. Slowly raise weapon until fixture and weights are suspended from table; hammer must not fall. e. Add weights to trigger pull measuring fixture until minimum load of 5.5 lb is reached. f. Slowly raise weapon until fixture and weights are suspended from table; hammer may fall. g. Add weights to trigger pull measuring fixture until maximum load of 8.5 lb is reached. Slowly raise weapon until fixture and weights are suspended above table; hammer must fall.	8. If trigger pull weight is less than 5.5 lb and more than 8.5 lb, replace trigger mechanism parts as needed to gain compliance. For a SSF trigger, minimum weight is 4.25 lb and maximum weight is 4.75 lb. The full auto weight is 6.0 lb.
9. Perform safety/function check IAW[4] WP 0022.	9. In the event a weapon is beyond field repair capability, reject weapon and return to Depot for refurbishment or demil.

1. Abbreviation cm stands for centimeter.
2. Acronym SSF stands for Super Select Fire.
3. Abbreviation lb stands for pound.
4. Acronym IAW stands for In Accordance With.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

PREPARATION FOR STORAGE

INITIAL SETUP:

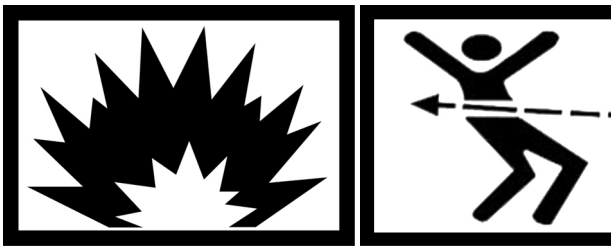
Personnel Required
Operator or Qualified Armorer (1)

References
WP 0010
WP 0022
TM 9-1005-319-10

Equipment Condition
Complete weapon (WP 0021)

PREPARATION FOR STORAGE

WARNING



Weapon with live ammunition can explode or accidentally discharge. Ensure weapon is clear before storing. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in severe personnel injury or death.

Weapon with live ammunition can explode or accidentally discharge. Do not store weapon with live ammunition in either chamber or magazine. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in severe personnel injury or death.

1. Ensure weapon is unloaded and cleared In Accordance With (IAW) WP 0010.
2. Clean and lubricate weapon IAW TM 9-1005-319-10.
3. Perform safety/function check IAW WP 0022.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

PREPARATION FOR SHIPMENT

INITIAL SETUP:

Materials
Designated Shipping Material and/or Containers

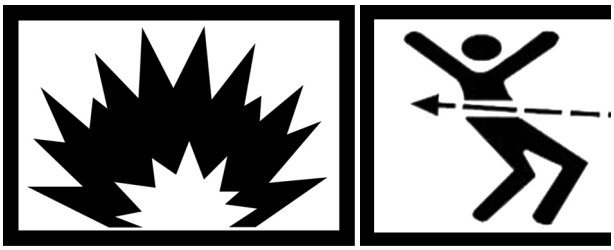
Personnel Required
Operator or Qualified Armorer (1)

References
WP 0010
WP 0022
MIL-STD-129R
NAVSEAINST 4790 Series
TM 9-1005-319-10

Equipment Condition
Complete weapon (WP 0021)

PREPARATION FOR SHIPMENT

WARNING



Weapon with live ammunition can explode or accidentally discharge. Do not ship weapon with live ammunition in either chamber or magazine. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in severe personnel injury or death.

1. Ensure weapon is unloaded and cleared In Accordance With (IAW) WP 0010.
2. Document completed maintenance IAW local directives and NAVSEAINST 4790 Series.
3. Clean weapon IAW TM 9-1005-319-10.
4. Perform safety/function check IAW WP 0022.
5. Place weapon/system including all Basic Issue Item (BII) in shipping container.
6. Mark shipping container IAW MIL-STD-129R.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

TRANSPORT

INITIAL SETUP:

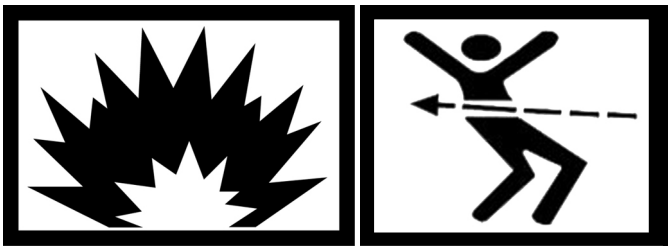
Personnel Required
Operator or Qualified Armorer (1)

References
WP 0010
WP 0022
TM 9-1005-319-10

Equipment Condition
Complete weapon (WP 0021)

TRANSPORT

WARNING



Weapon with live ammunition can explode or accidentally discharge. Ensure weapon is clear before transporting. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in severe personnel injury or death.

Weapon with live ammunition can explode or accidentally discharge. Do not transport weapon with live ammunition in either chamber or magazine. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in severe personnel injury or death.

1. Ensure weapon is unloaded and cleared In Accordance With (IAW) WP 0010.
2. Clean and lubricate weapon IAW TM 9-1005-319-10.
3. Perform safety/function check IAW WP 0022.

END OF WORK PACKAGE

CHAPTER 5

ANCILLARY EQUIPMENT

FIELD MAINTENANCE

AUXILIARY EQUIPMENT

OVERVIEW

This Work Package (WP) contains information regarding ancillary equipment for Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG).



Figure 1. Auxiliary Equipment.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(D) NAVY	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
								GROUP 02 FIG. 1 AUXILIARY EQUIPMENT.	
1	PAFFD	PAFFD	PAOOD	PAOOD	1005-01-599-6997	0BJZ8	SOCOM556-RC-DE	SILENCER, GUN (M4 SUPPRESSOR)	1
2	PAFZZ	PAFZZ	PAOZZ	PAOZZ	1005-01-608-7572	0BJZ8	SF-BSD-556	FIRING ATTACHMENT, BLANK AMMUNITION (BLANK FIRING ATTACHMENT FOR 10.3-INCH RIS II URG)	1
3	PAFZZ	PAFZZ	PAOZZ	PAOZZ	1005-01-660-6656	0BJZ8	SF-BSD-556-M4	FIRING ATTACHMENT, BLANK AMMUNITION (BLANK FIRING ATTACHMENT FOR 14.5-INCH RIS II URG)	1
								END OF FIGURE	

Note: The 10.3 or 14.5 Blank Firing Attachments (BFAs) are NOT recommended for use on the Upper Receiver Group Improved (URG-I) platform.

END OF WORK PACKAGE

FIELD MAINTENANCE

ILLUSTRATED LIST OF MANUFACTURED ITEMS INTRODUCTION

ILLUSTRATED LIST OF MANUFACTURED ITEMS INTRODUCTION

Scope

This Work Package (WP) includes complete instructions for making items authorized to be manufactured or fabricated for the Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG).

How to Use the Index of Manufactured Items

A Part Number (PN) index is alphanumeric order is provided for cross-referencing the PN of the item to be manufactured to the information which covers fabrication criteria.

Explanation of the Illustrations of Manufactured Items

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

Table 1. Illustrated List of Manufactured Items.

ITEM NUMBER	PN	NSN	NOMENCLATURE
1	080-000-651WB	N/A	Pivot Pin Installation Tool
2	13016N06	5120-00-198-5398	Pivot Pin Removal Tool

END OF WORK PACKAGE

FIELD MAINTENANCE

ILLUSTRATED LIST OF MANUFACTURED ITEMS

INITIAL SETUP:

Tools
1/4-inch Roll Pin Punch (WP 0062, Item 10)
1/16-inch Socket Head Screw Key (WP 0062, Item 7)

Personnel Required
Qualified Armorer (1)

References
WP 0019

Equipment Condition
Complete weapon (WP 0021)

PIVOT PIN INSTALLATION TOOL

Grind tip of 1/4-inch roll pin punch to 45º and round tip to remove sharp edges.



Figure 1. Pivot Pin Installation Tool.

END OF TASK

PIVOT PIN REMOVAL TOOL

Fabricate from 1/16-inch socket head screw key.

NOTE

All dimensions shown are in inches with the metric conversion to centimeters in parenthesis.

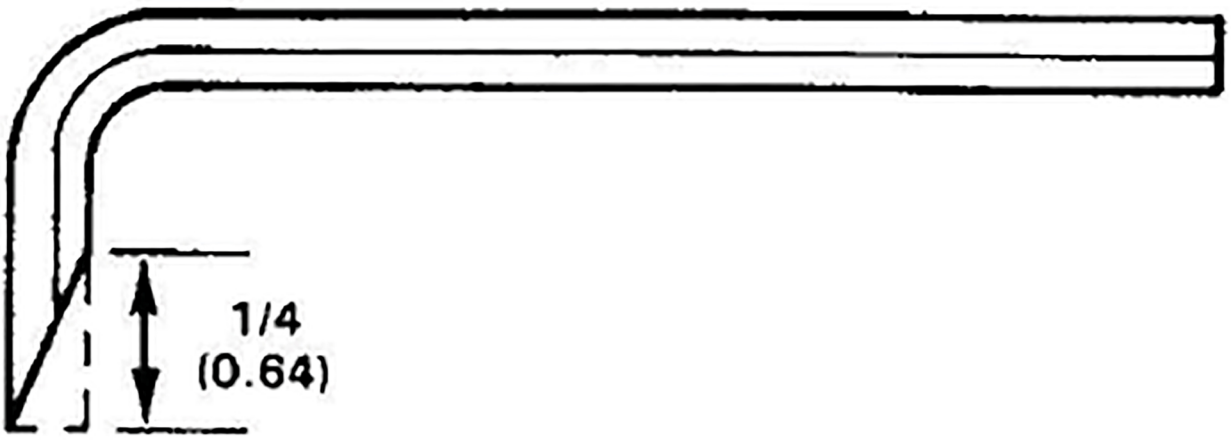


Figure 2. Pivot Pin Removal Tool.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

LAW FOLDING STOCK MAINTENANCE

INITIAL SETUP:

Tools
1/16-inch Drive Pin Punch (WP 0062, Item 10)
1/8-inch Drive Pin Punch (WP 0062, Item 10)
3/32-inch Drive Pin Punch (WP 0062, Item 10)
Scribe (WP 0062, Item 19)
5/16-inch Hex Wrench (WP 0062, Item 6)
1/2-inch Drive ft•lb Torque Wrench (WP 0062, Item 24)
Vise (WP 0062, Item 21)
9/64-inch Hex Key (WP 0062, Item 6)
3/32-inch Hex Key (WP 0062, Item 6)

Special Tools
Lower Receiver Block (WP 0057, Item 12)
Buttstock Wrench (WP 0057, Item 8)
Flange Tool (WP 0057, Item 19)

Materials
Molybdenum Disulfide Grease (WP 0061, Item 20)
LAW Folding Stock Kit (WP 0051)

Personnel Required
Qualified Armorer (1)

References
WP 0019

Equipment Condition
Weapon fieldstripped (WP 0012)

LAW FOLDING STOCK INSTALLATION

1. Install lower receiver block into lower receiver and secure in vise (Figure 1).



Figure 1. Receiver Block in Vise.

2. Disassemble buttstock assembly.

a. Extend buttstock assembly by pressing on lock release lever (Figure 2).



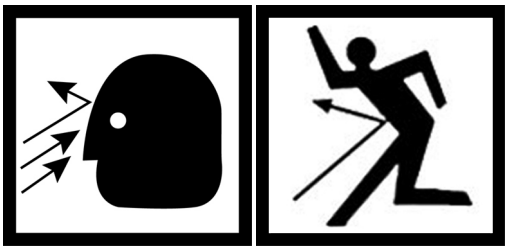
Figure 2. Extending Buttstock Assembly.

b. Grasp lock release lever, pull downward, and remove buttstock from lower receiver extension (Figure 3).



Figure 3. Buttstock Assembly and Lower Extension.

WARNING



Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

c. While holding receiver rear sling attachment against receiver, use buttstock wrench to loosen extension locking nut (Figure 4).



Figure 4. Loosening Extension Locking Nut.

d. Allow receiver rear sling attachment to disengage from lower receiver and capture take down pin spring (Figure 5).

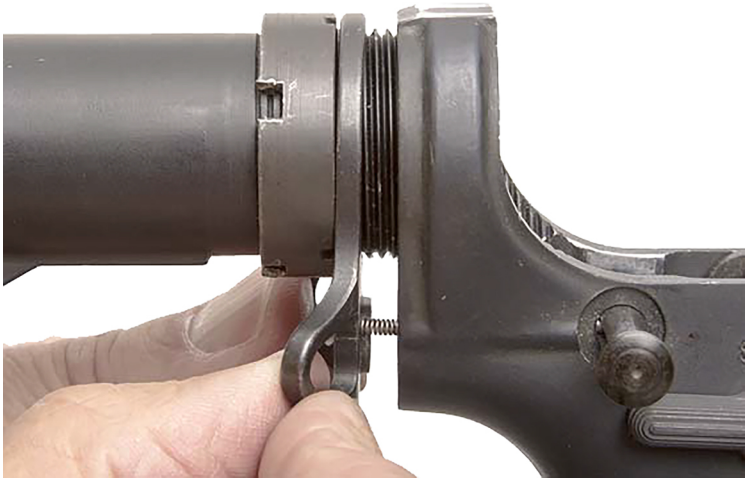
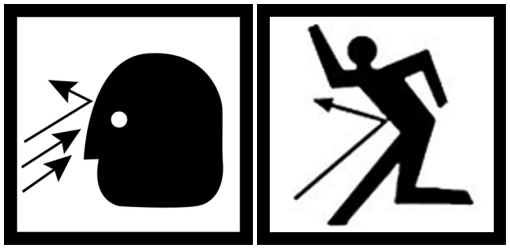


Figure 5. Capturing Take Down Pin.

WARNING



Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

CAUTION

Maintain control of buffer retainer should pin and buffer retainer shoulder pin spring to prevent loss. Failure to observe this caution could result in loss of parts or equipment damage.

e. Hold buffer retainer shoulder pin and buffer retainer should pin spring in position with finger or scribe. Turn counterclockwise (CCW) and remove lower receiver extension from lower receiver (Figure 6).



Figure 6. Lower Receiver.

f. Slide rear sling attachment (Figure 7, Item 1) off lower receiver extension. Turn extension locking nut (Figure 7, Item 2) CCW and remove from lower receiver extension.



Figure 7. Removing Extension Locking Nut from Lower Receiver Extension.

g. Remove buffer retainer shoulder pin (Figure 8, Item 2) and buffer retainer shoulder pin spring (Figure 8, Item 1).

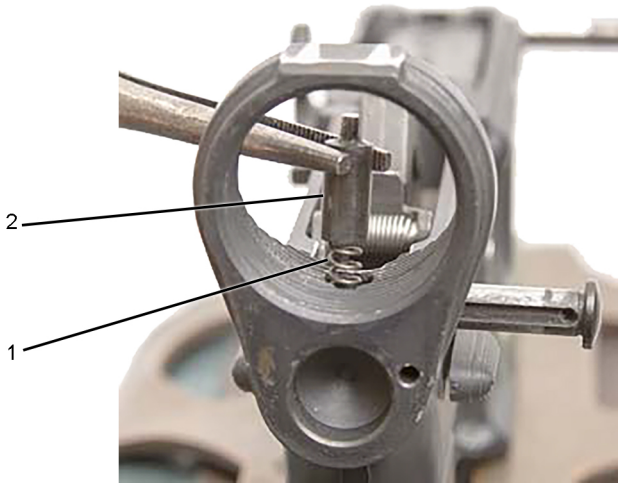


Figure 8. Removing Buffer Retainer Shoulder Pin and Pin Spring.

CAUTION

Do not over tighten fasteners on this assembly. Over tightening of fasteners can cause equipment damage.

NOTE

The hinge assembly comes pre-assembled and should not be disassembled. Other parts listed below will be removed from this assembly.

3. Prepare for LAW folding stock for installation.

a. Using 9/64-inch hex key, remove hex screw from side plate cover (Figure 9).



Figure 9. Removing Hex Screw.

b. Remove side plate cover from hinge assembly (Figure 10).



Figure 10. Removing Side Plate Cover.

c. Separate button spring and button from hinge assembly (Figure 11).



Figure 11. Separating Button Spring and Button.

4. Install LAW folding stock.

   a. Place hinge assembly onto rear of receiver over take down pin spring, aligning protrusion of hinge assembly with indentation in receiver along with rear takedown pin detent and rear takedown pin spring (Figure 12).



Figure 12. Placing Hinge Assembly.

   b. While holding hinge assembly in place, screw threaded flange into receiver. Similar to the manner that the buffer tube would be installed (Figure 13).



Figure 13. Screwing Threaded Flange into Receiver.

c. Tighten flange onto receiver using the included flange tool until it firmly holds hinge assembly onto receiver. When flange tool starts to flex, proper torque has been applied (Figure 14).



Figure 14. Tightening Flange.

d. Re-install button spring and button onto hinge assembly.

e. Install button spring with side plate cover and re-install hex screw using 9/64-inch hex key (Figure 15).



Figure 15. Installing Button Spring.

5. Install butter tube.

   a. With hinge assembly firmly installed, tighten flange screw using 3/32-inch hex key to secure treaded flange (Figure 16).



Figure 16. Tightening Flange Screw.

   b. Install buffer retaining spring and buffer retaining pin into stock side of hinge (Figure 17).



Figure 17. Installing Buffer Retaining Spring and Buffer Retaining Pin.

c. Begin to install buffer tube and receiver extension end plate (Figure 18).



Figure 18. Installing Buffer Tube and Receiver Extension End Plate.

d. Depress buffer retaining pin and spring and override while tightening buffer tube into place on stock side of hinge (Figure 19).

NOTE

Buffer tube will hold buffer retaining pin in place.

(1) At the same time, depress and align receiver extension end plate into corresponding groove on hinge assembly.

(2) Tighten castellated nut until hand tight.

(3) Using buttstock wrench and torque wrench, torque locking nut to 40 foot-pound (ft•lb) (Figure 19).

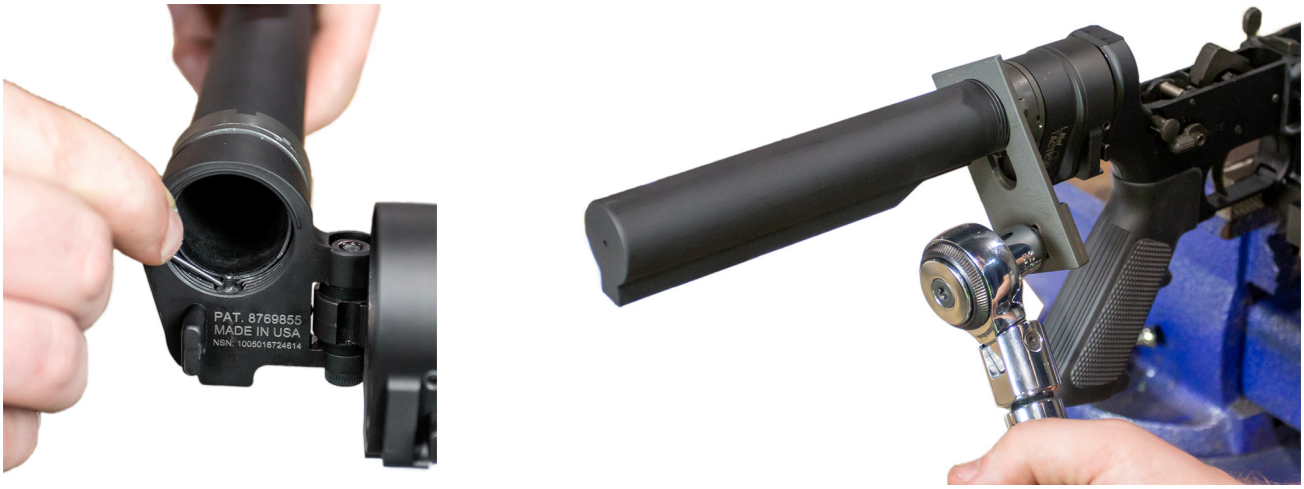


Figure 19. Tightening Buffer Tube.

6. Install buffer and action spring.

a. Push button on hinge assembly and fold stock into STORED position (Figure 20).



Figure 20. Folding Stock into STORED Position.

b. Install action spring and buffer by applying pressure to and overriding buffer retaining pin (Figure 21).



Figure 21. Installing Action Spring and Buffer.

c. Install adjustable stock onto completed LAW folder assembly.

7. Install Upper Receiver Group (URG) onto lower receiver group (Figure 22).



Figure 22. Installing URG onto Lower Receiver Group.

8. Install bolt carrier extension into bolt carrier group via open port in rear lower receiver group until should of bolt carrier extension is in front of blade in LAW folder assembly.

9. Press button which enables folding of stock in order to allow for shoulder of bolt carrier extension to make contact with bolt carrier (Figure 23).



Figure 23. Enabling Folding of Stock.

10. Unfold stock to FIRING position.

END OF TASK

LAW FOLDING STOCK REMOVAL

1. Install lower receiver block into lower receiver and secure in vise (Figure 24).



Figure 24. Receiver Block in Vise.

2. Disassemble buttstock assembly.

   a. Extend buttstock assembly by pressing on lock release lever (Figure 25).



Figure 25. Extending Buttstock Assembly.

b. Grasp lock release lever, pull downward, and remove buttstock from lower receiver extension (Figure 26).



Figure 26. Buttstock Assembly and Lower Extension.

c. While holding receiver rear sling attachment against receiver, use buttstock wrench to loosen extension locking nut. Do not rotate buffer tube until buffer retaining pin in under pressure (Figure 27).



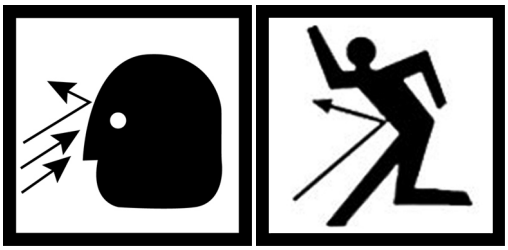
Figure 27. Loosening Extension Locking Nut.

d. Allow receiver rear ling attachment to disengage from lower receiver (Figure 28).



Figure 28. Disengaging Rear Sling Attachment.

WARNING



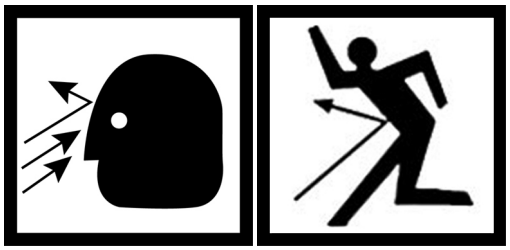
Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

e. Apply pressure to buffer tube retaining pin, and begin to turn buffer tube extension CCW until buffer tube retaining pin and spring (Figure 29) are no longer captive. Remove and dispose of spring In Accordance With (IAW) local procedures. Replace spring.



Figure 29. Buffer Tube Retaining Pin and Spring.

WARNING



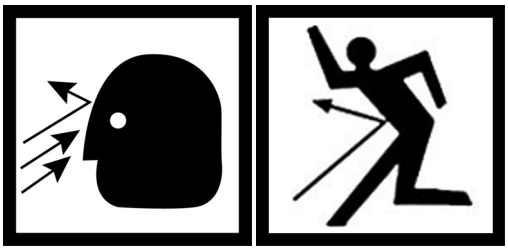
Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

3. Using T-handle tool provided by LAW tactical, begin to unscrew threaded flange. The button which enables stock to fold must be pressed during this process to fully remove threaded flange (Figure 30).



Figure 30. Unscrewing Threaded Flange.

WARNING



Flying particle and projectile hazard. Weapon components include spring-loaded parts. Use caution when removing and installing spring-loaded parts. If injury occurs, immediately seek medical attention. Failure to observe this warning could result in personnel injury or equipment damage.

4. While unscrewing flange, make sure to retain lower take down pin detent spring.

5. Install buffer tube IAW WP 0019.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

FAMILY MUZZLE BREAK SUPPRESSOR CARBINE (FMBS-C) MAINTENANCE

INITIAL SETUP:

Personnel Required
Qualified Armorer (1)

Equipment Condition
Weapon cleared (WP 00010)

SUPPRESSORS, BLANK FIRING ADAPTERS (BFAS), AND BLANK SAFETY DEVISES (BSDS) INSTALLATION

NOTE

Before installation of Surefire 5.56 Special Operations Command (SOCOM) suppressor, make sure the correct muzzle device is installed. If the Surefire flash hider is not affixed to the weapon, these suppressors can not be installed. This procedures covers the Surefire SOCOM 5.56 suppressor, the Surefire BFA, and the Surefire BSD.



Figure 1. Surefire Flash Hider.

1. Open locking mechanism by depressing latch and rotating ring until fully open (Figure 2).



Figure 2. Opening Locking Mechanism.

2. Slide FMBS-C device over flash hider (Figure 3).



Figure 3. Sliding FMBS-C Device Over Flash Hider.

3. Ensure the FMBS-C device indexing slot is aligned and seats into flash hider tab (Figure 4).



Figure 4. Rotating FMBS-C Device.

4. Tighten locking ring until rotation stops (Figure 5).



Figure 5. Tightening Locking Ring.

5. Attempt to rotate FMBS-C device; only slight rotational movement under tension should be felt.

END OF TASK

MAINTENANCE

NOTE

There are currently no maintenance procedures recommended by Naval Surface Warfare Center (NSWC) Crane.

END OF TASK

INSPECTION

CAUTION

Refrain from inserting anything into the locking mechanism of a FMBS-C device. It can increase the likelihood of a baffle strike.

1. Inspect locking rings to ensure there is nothing obstructing locking mechanism.

2. Inspect baffles to ensure there are no visible baffle strikes.

END OF TASK

REMOVAL

NOTE

This process is for the Rail Interface System (RIS) Upper Receiver Group (URG) variant as long as the correct flash hider is installed. Before installation of Surefire 5.56 SOCOM suppressor, make sure the correct muzzle device is installed. If the Surefire flash hider is not affixed to the weapon, these suppressors can not be installed.

The Surefire BSD and BFA devices are currently not authorized for use on the Upper Receiver Group Improved (URG-I) weapon system.



Figure 6. Surefire Flash Hider.

1. Depress latch and hold in UNLOCK position (Figure 7).



Figure 7. Depressing Latch.

2. Holding locking ring latch in UNLOCKED position, rotate locking ring 1/2 turn counterclockwise (CCW) (Figure 8).



Figure 8. Rotating Locking Ring.

3. Firmly grasp FMBS-C device body and pull away from host weapon (Figure 9).



Figure 9. Pulling FMBS-C Device Body from Host Weapon.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

POLYMER-MAGAZINE (P-MAG) MAINTENANCE

INITIAL SETUP:

Tools
1/8-inch Punch (WP 0062, Item 10)

Personnel Required
Qualified Armorer (1)

Materials Required
Approved Cleaning Tank

Equipment Condition
Weapon cleared (WP 00010)

NOTE

See the below image for a breakdown of parts and terminology.

P-MAGs are available through supply system under the following National Stock Numbers (NSNs):

- NSN 1005-01-615-5169 (Black)
- NSN 1005-01-659-7086 (Coyote Tan)



Figure 1. Breakdown of Parts and Terminology.

DISASSEMBLY

NOTE

Do not use Cleaner, Lubricant and Preservative (CLP) as a cleaner for magazines.

1. Depress button at base of magazine using 1/8-inch punch (Figure 2).



Figure 2. Depressing Button at Base of Magazine.

2. Push floor plate rearward to remove from bottom of magazine. (Figure 3).



Figure 3. Removing Floor Plate from Magazine.

3. Remove spring assembly from magazine housing (Figure 4).



Figure 4. Removing Spring Assembly from Magazine Housing.

4. Remove follower and base plate from spring (Figure 5).

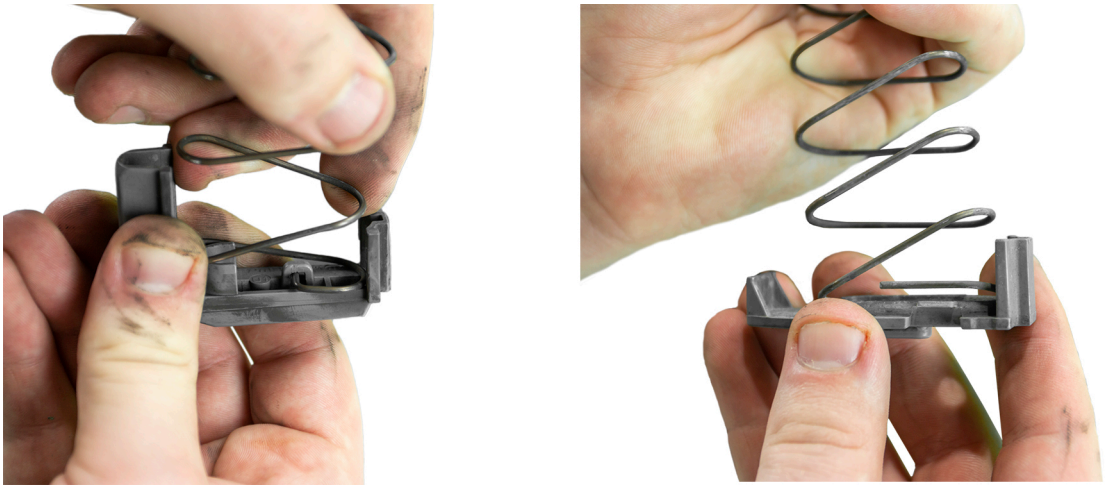


Figure 5. Removing Follower and Base Plate from Spring.

END OF TASK

CLEANING

Clean magazine components with approved cleaning tank or warm water and nylon brush.

END OF TASK

ASSEMBLY

1. Install follower and base plate onto spring (Figure 6).

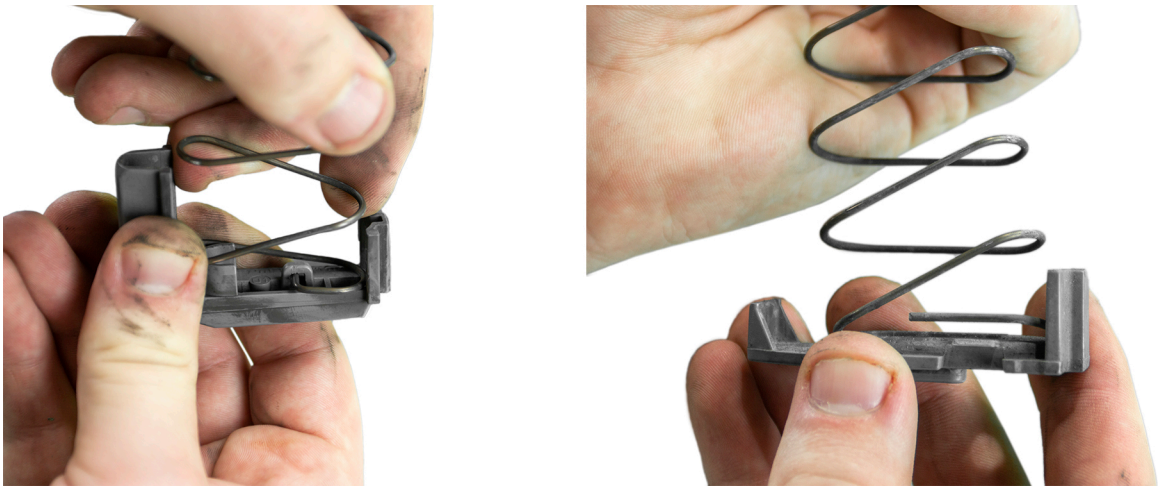


Figure 6. Installing Follower and Base Plate onto Spring.

2. Install spring assembly into magazine housing (Figure 7).



Figure 7. Installing Spring Assembly into Magazine Housing.

3. Install floor plate into magazine (Figure 8).



Figure 8. Installing Floor Plate into Magazine.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

MODULAR LOCK (M-LOK) ACCESSORIES

INITIAL SETUP:

Tools
1/8-inch Hex Wrench (WP 0062, Item 6)
5/16-inch Open End Wrench (WP 0062, Item 22)
5/32-inch Hex Bit (WP 0062, Item 7)

Equipment Condition
Weapon cleared (WP 0010)
Weapon fieldstripped (WP 0012)

Personnel Required
Qualified Armorer (1)

INSTALLATION OF M-LOK ACCESSORIES

NOTE

It is important to limit the number of times M-LOK accessories are removed/reinstalled after the initial installation. These accessories are not designed to act as a quick change/disconnect accessory. All lasers, optics, and sights must be re-zeroed upon installation.

Ensure nut is started onto bolt with at least one full bolt thread showing on nut. Using 1/8-inch hex key (rail) and 5/16-inch open end wrench, tighten bolt to appropriate depth. If one thread is not showing, there is a chance that M-LOK nut will not cam in M-LOK slot properly, which may damage handguard during installation (Figure 1). A 5/32-inch is used for sling attachment.



Figure 1. Installing Accessories to Handguard.

TORQUE SPECIFICATIONS

CAUTION

The nylon compound may slightly affect the torque reading if using an inch pound (in-lb) torque wrench. It is important to break in new fasteners before installing them onto the weapon system in order to prevent equipment damage Begin to tighten the fasteners and loosen them before installation.

NOTE

Torque specifications for M-LOK accessories vary depending on what material the accessory is made of.

The installation torque values are maximum recommended values.

Metal to Metal

For attaching metal accessories to metal hand guards: 35 in-lb.

Polymer to Metal

For attaching polymer accessories to metal hand guards: 15 in-lb.

REFERENCE IMAGES



Figure 2. T-Nut Preparation.



Figure 3. Sling Mount.

END OF WORK PACKAGE

CHAPTER 6

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FIELD

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) 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 Field maintenance of the Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG). It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance, & Recoverability (SMR) codes.

GENERAL

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

Repair Parts List Work Packages (WPs)

WPs containing lists of spare and repair parts authorized for use in the performance of maintenance at the levels determined by the SMR code. These WPs 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. Items listed are shown on the associated illustrations.

Special Tools List WPs

This WP 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.

Cross-Reference Indexes WPs

There are two cross-reference indexes WPs in this RPSTL. The National Stock Number (NSN) Index WP refers you to the Figure and item number for each NSN listed in the RPSTL. The Part Number Index WP refers you to the figure and item number for each part number listed in the RPSTL.

EXPLANATION OF COLUMNS IN THE RPSTL WP

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

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 PB PC PD PE PF PG PH PR PZ	Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code. **NOTE** Items coded PC are subject to deterioration.
KD KF KB	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.
MO-Made at organizational maintenance level MF-Made at maintainer class MH-Made at below depot sustainment class ML-Made at SRA MD-Made at depot MG-Navy only	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the Part Number (PN) 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 code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.
AO-Assembled by organizational level AF-Assembled by maintainer class AH-Assembled by below depot sustainment class AL-Assembled by SRA AD-Assembled by depot AG-Navy Only	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
XA	Do not requisition an “XA” coded item. Order the Next Higher Assembly (NHA). (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the Commercial and Government Entity Code (CAGEC) and PN.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's NSN.

Table 2. Source Code Explanation.-Continued.

SOURCE CODE	APPLICATION/EXPLANATION
XD	Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and PN given, if no NSN is available.

NOTE

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

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

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

Table 3. Third Position Maintenance Code Explanation.

MAINTENANCE CODE	APPLICATION/EXPLANATION
O -	Item is removed, replaced, used at the organizational level of maintenance. **NOTE** To distinguish between the organizational maintenance capabilities on different c lasses of ships, the following codes may be used intra-Navy only. On joint programs, Navy will receive and transmit an O to indicate organizational maintenance level. 2 - Minesweeper, yardcraft, Patrol Boat 3 - Submarines 4 - Auxiliary/Amphibious Ships 5 - Major Combatant (Destroyer, Frigate) 6 - Major Combatant (Cruiser, Carrier)
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. Fourth Position Maintenance Code Explanation.

MAINTENANCE CODE	APPLICATION/EXPLANATION
O -	Item is removed, replaced, used at the organizational level of maintenance. **NOTE** To distinguish between the organizational maintenance capabilities on different classes of ships, the following codes may be used intra-Navy only. On joint programs, Navy will receive and transmit an O to indicate organizational maintenance level. 2 - Minesweeper, yardcraft, Patrol Boat 3 - Submarines 4 - Auxiliary/Amphibious Ships 5 - Major Combatant (Destroyer, Frigate) 6 - Major Combatant (Cruiser, Carrier)
F -	Maintainer is the lowest class that can do complete repair of the item.
H -	Below Depot Sustainment is the lowest class that can do complete repair of the item.
L -	Specialized repair activity is the lowest class that can do complete repair of the item.
D -	Depot is the lowest class 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.
Z -	Nonreparable. No repair is authorized.
B -	No repair is authorized. No parts or special tools are authorized for maintenance of “B” coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

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

Table 5. Recoverability Code Explanation.

RECOVERABILITY CODE	APPLICATION/EXPLANATION
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
O -	Repairable item. When economically repairable, condemn and dispose at organizational level.
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the field level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot.
L -	Reparable item. Condemnation and disposal 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 reparable 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 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. Federal item name, and when required, a minimum description to identify the item.

2. PNs 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. 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 the WP 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

National Stock Number (NSN) Index WP

NSN 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 WPs.

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.

Part Number (PN) Index WP

Part numbers in this index are listed 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 RPSTL WP.

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.

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. 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 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

Abbreviation	Explanation
URG	Upper Receiver Group
RIS	Rail Interface System
SOCOM	Special Operations Command
M-LOK	Modular Lock
URG-I	Upper Receiver Group Improved

END OF WORK PACKAGE

FIELD

M4A1 LOWER RECEIVER AND RAIL INTERFACE SYSTEM (RIS) II UPPER RECEIVER GROUP (URG) REPAIR PARTS LIST

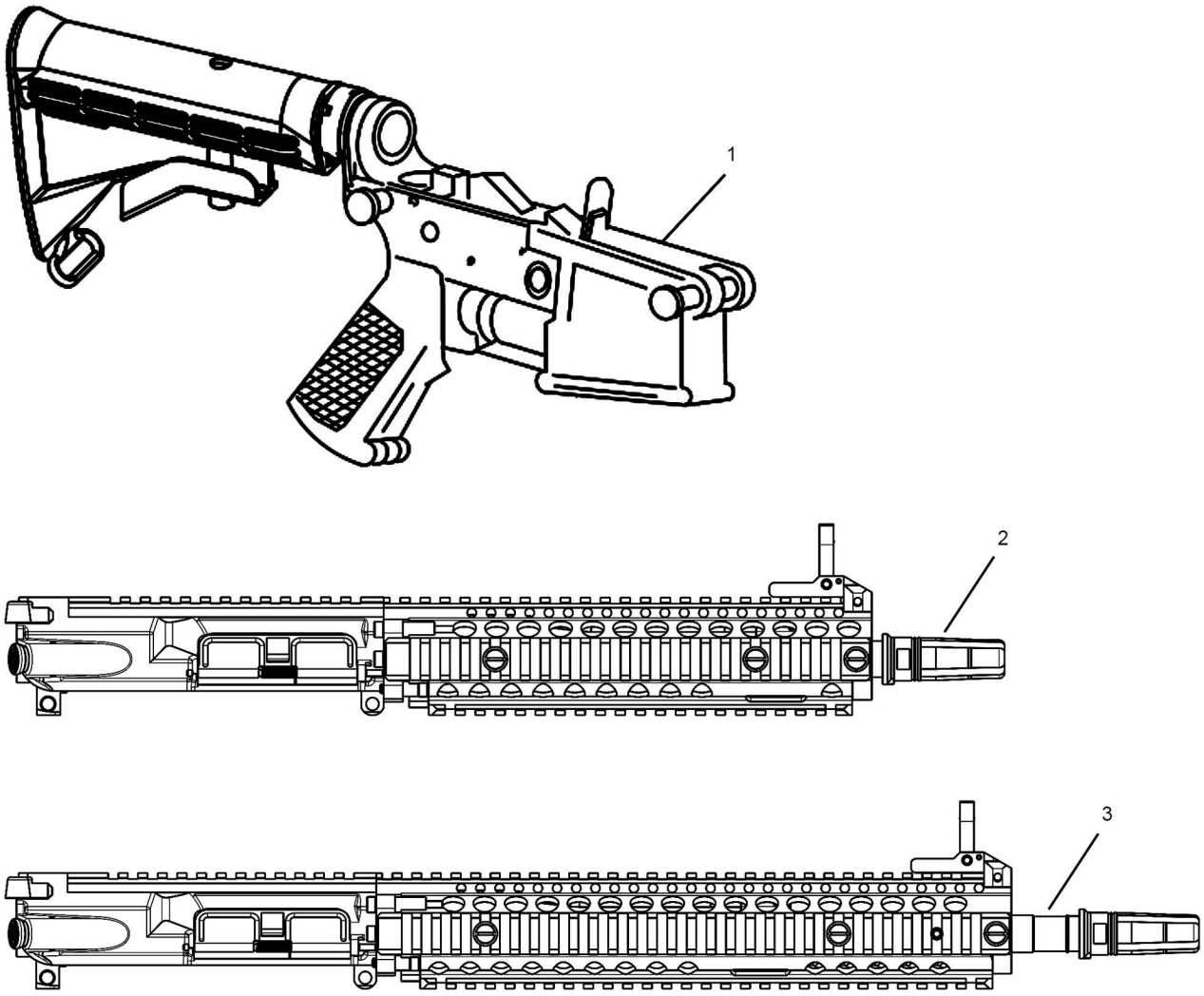


Figure 1. M4A1 Lower Receiver and RIS II URG.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401 FIG. 1 M4A1 LOWER RECEIVER AND RIS II URG.	
1	XAFFA	XAFFA	XAOOA	N/A	19200	12972690	M4A1 LOWER RECEIVER (FOR BREAKDOWN	1
2	PAFFA	PAFFA	PAOOA	1005-01-647-6884	12255	408JXN00553-7	RECEIVER, CARTRIDGE, (10.3 RIS II URG)	1
3	PAFFA	PAFFA	PAOOA	1005-01-647-7604	12255	408JXN00553-8	RECEIVER, CARTRIDGE (14.5 RIS II URG)	1
							END OF FIGURE	

FIELD

UPPER RECEIVER (10.3 UPPER RECEIVER GROUP [URG]) REPAIR PARTS LIST

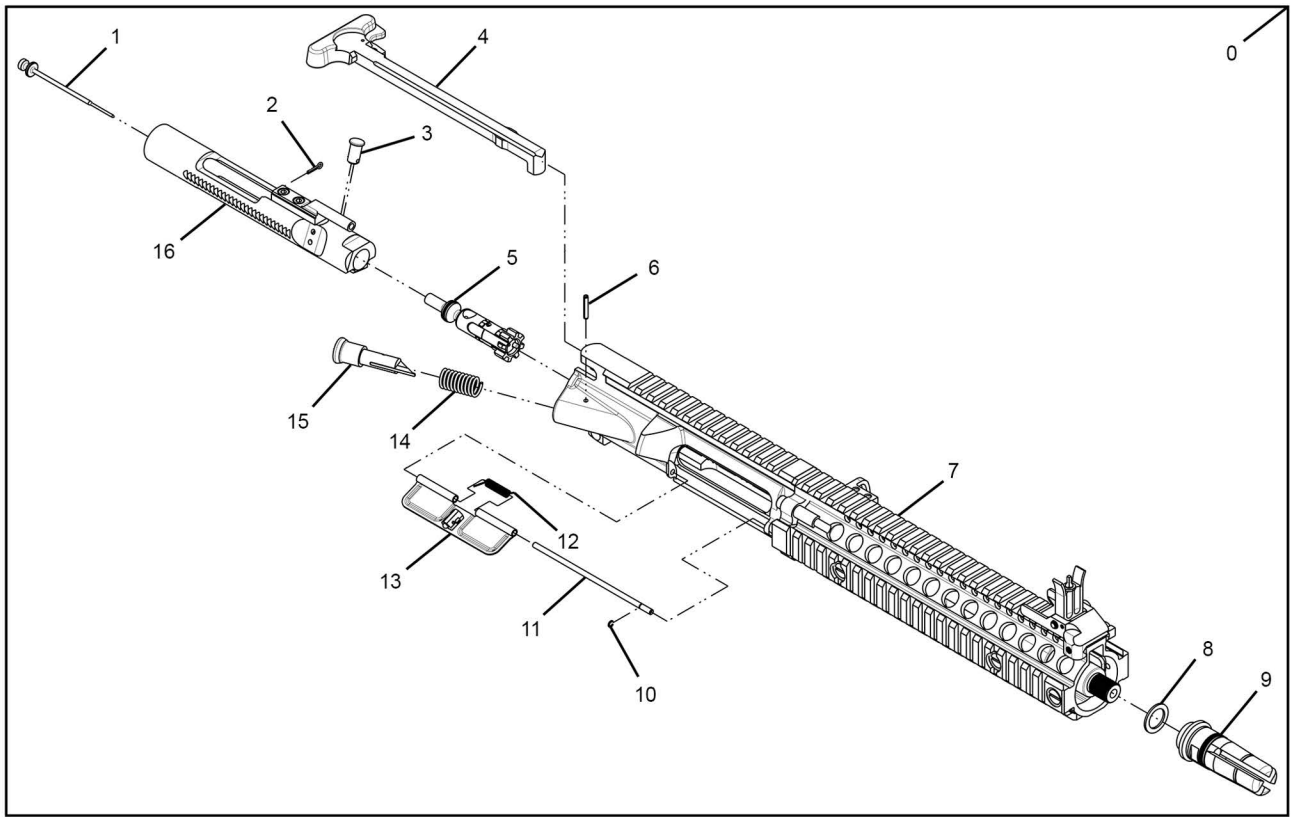


Figure 2. Upper Receiver (10.3 URG).

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 2 UPPER RECEIVER (10.3 URG).	
0	PAFFA	PAFFA	XAOOA	1005-01-647-6884	12255	408JXN00553-7	RECEIVER, CARTRIDGE, (10.3 URG) . . .	1
1	PAFZZ	PAFZZ	PAOZZ	1005-00-017-9547	19204	8448503	. PIN, FIRING	1
2	PAFZZ	PAFZZ	PAOZZ	1005-00-999-1509	19204	8448504	. PIN, FIRING PIN RETAINER	1
3	PAFZZ	PAFZZ	PAOZZ	5315-00-992-7294	19204	8448502	. PIN, GROOVED, HEADED (BOLT CAM)	1
4	PAFZZ	PAFZZ	PAOZZ	1005-00-017-9546	19204	8448517	. HANDLE ASSEMBLY, CHARGING . . .	1
5	AHFFF	AHFFF	AHOOO	1005-01-627-5406	12255	408JXN00638	. BOLT, URG RIS-II	1
6	PAFZZ	PAFZZ	PAOZZ	5315-00-840-3812	96906	MS16562-121	. PIN, SPRING (FORWARD ASSIST) . .	1
7	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-3	. 10.3 HEAVY BARREL & RAIL ASSEMBLY	1
7	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-1	. 10.3 BARREL & RAIL ASSEMBLY. . . .	1
8	PAFZZ	PAFZZ	PAOZZ	5365-01-632-3435	OBJZ8	Z-70031	. SHIM SET (SHIMS AND SPACER) . . .	1
9	PAFZZ	PAFZZ	PAOZZ	1005-01-599-7048	OBJZ8	FH556RC-1/2-28	. RETAINER, SUPPRESSOR, FLASH HIDER W/ SHIM SET AND SPACER	1
10	PAFZZ	PAFZZ	PAOZZ	5325-00-999-0864	96906	MS16632-3012	. RING, RETAINING (EJECTION PORT COVER).	1
11	PAFZZ	PAFZZ	PAOZZ	5315-00-978-1023	19204	8448533	. PIN, GROOVED, HEADLESS (EJECTION PORT COVER)	1
12	PAFZZ	PAFZZ	PAOZZ	5360-00-978-1025	19200	8448532	. SPRING, HELICAL, TORSION (EJECTION PORT COVER)	1
13	PAFZZ	PAFZZ	PAOZZ	1005-00-978-1022	19204	8448525	. COVER, EJECTION PORT ASSEMBLY	1
14	PAFZZ	PAFZZ	PAOZZ	5360-00-017-9541	19200	8448540	. SPRING, HELICAL, COMPRESSION (FORWARD ASSIST)	1
15	PAFZZ	PAFZZ	PAOZZ	1005-01-442-0160	19200	9349086	. FORWARD ASSIST ASSEMBLY	1
16	PAFFF	PAFFF	PAOOO	1005-01-441-1619	19204	8448505	CARRIER ASSEMBLY, KEY AND BOLT . .	1
							END OF FIGURE	

FIELD

10.3 HEAVY BARREL AND RAIL ASSEMBLY REPAIR PARTS LIST

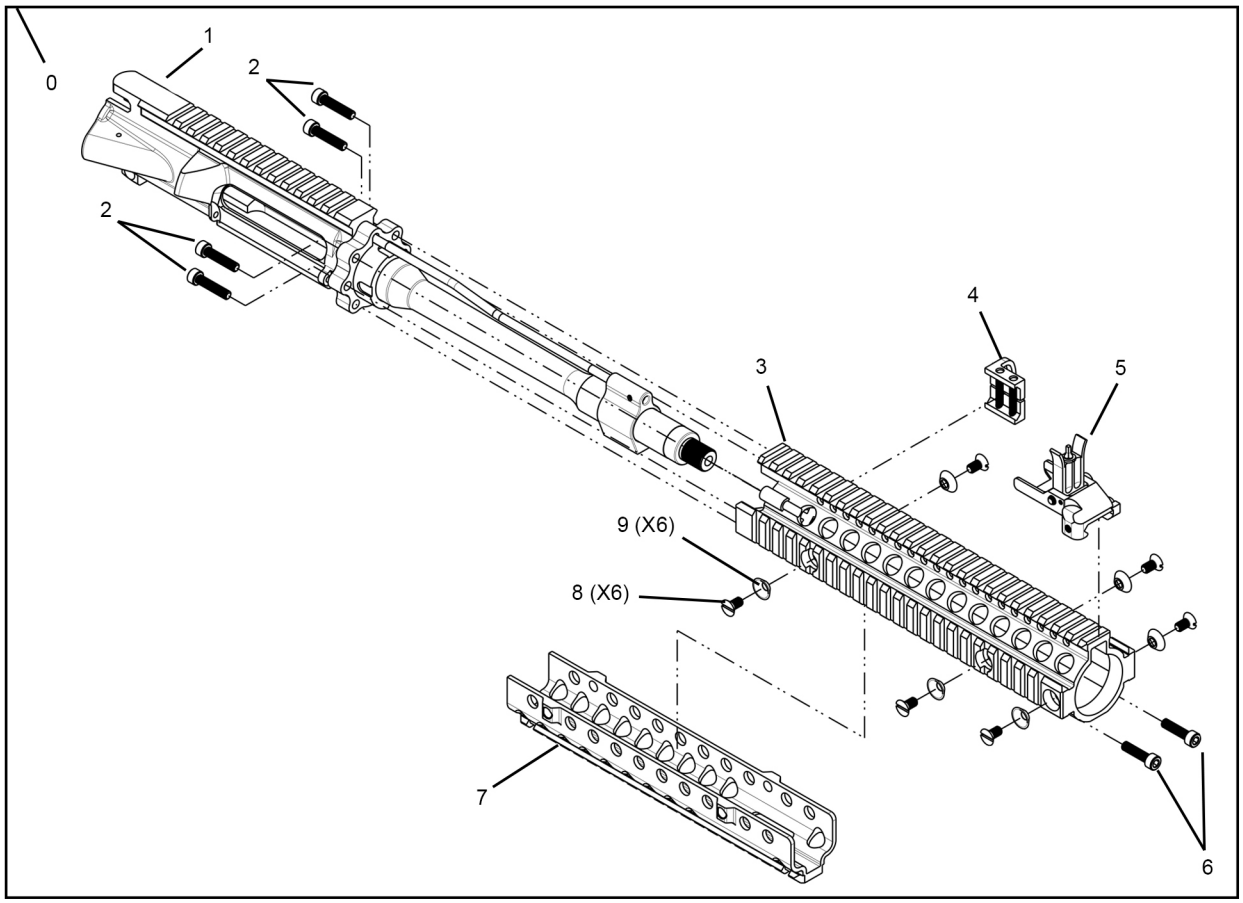


Figure 3. 10.3 Heavy Barrel and Rail Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 3 10.3 HEAVY BARREL AND RAIL ASSEMBLY.	
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-3	10.3 HEAVY BARREL & RAIL ASSEMBLY	1
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-1	10.3 BARREL & RAIL ASSEMBLY	1
1	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-3	. 10.3 HEAVY BARREL ASSEMBLY . . .	1
1	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-1	. 10.3 BARREL ASSEMBLY (LIGHT BARREL)	1
2	PAFZZ	PAFZZ	PAOZZ	5305-00-101-8600	96906	MS21295-49	. SCREW, CAP, SOCKET HEAD	4
3	XAFFA	XAFFA	XAOOA	N/A	3E3E2	01-004-0810-103	. RIS II M4A1 UPPER RAIL, FDE, ENGRAVING	1
4	PAFZZ	PAFZZ	PAOZZ	1005-01-597-2340	035T1	CQD-FEM	. BRACKET, MOUNTING (FORWARD SLING MOUNT).	1
5	PAFZZ	PAFZZ	PAOZZ	1005-01-473-1410	1S002	99051	. FRONT FLIP SIGHT LO.	1
6	PAFZZ	PAFZZ	PAOZZ	5305-00-104-2784	96906	MS21295-43	. SCREW, CAP, SOCKET HEAD	2
7	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08112-103	. RIS II M4A1 LOWER RAIL, FDE, ENGRAVING	1
8	XAFZZ	XAFZZ	XAOZZ	N/A	24930	GS21-206R10X3-8	. SCREW, CAP, SOCKET HEAD	6
9	PAFZZ	PAFZZ	PAOZZ	5310-01-118-6766	39428	90262A011	. WASHER, FINISHING	6
							END OF FIGURE	

FIELD

WEAPON MOUNTED ADAPTER RAIL 10.3 REPAIR PARTS LIST

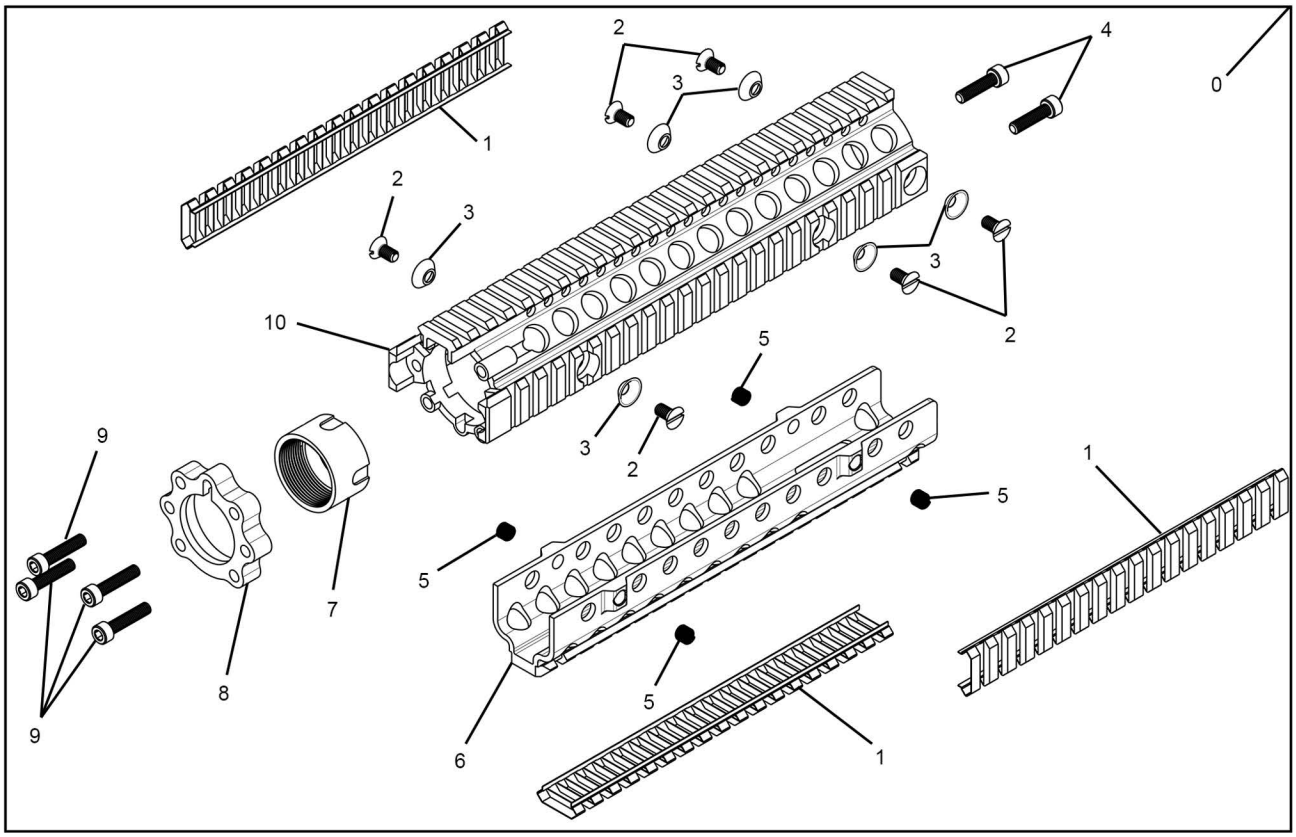


Figure 4. Weapon Mounted Adapter Rail 10.3.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 4 WEAPON MOUNTED ADAPTER RAIL 10.3.	
0	PAFFZ	PAFFZ	PAOOZ	1005-01-548-1385	3E3E2	01-004-16120	ADAPTER RAIL, WEAPON MOUNTED (10.3)	1
1	XAFZZ	XAFZZ	XAOOZ	N/A	3E3E2	21-010-00010-011	. LADDER PANEL, FDE.	3
2	XAFZZ	XAFZZ	XAOOZ	N/A	24930	GS21-206R10X3-8	. SCREW, CAP, SOCKET HEAD	6
3	PAFZZ	PAFZZ	PAOZZ	5310-01-118-6766	39428	90262A011	. WASHER, FINISHING	6
4	PAFZZ	PAFZZ	PAOZZ	5305-00-104-2784	96906	MS21295-43	. SCREW, CAP, SOCKET HEAD	2
5	PAFZZ	PAFZZ	PAOZZ	5325-00-721-7653	96906	MS212906F1-20	. INSERT, SCREW THREAD	4
6	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08112-103	. RIS II M4A1 LOWER RAIL, FDE, ENGRAVING	1
7	XAFZZ	XAFZZ	PAOZZ	N/A	3E3E2	01-002-08130-131	BOLT UP SYSTEM BARREL NUT	1
8	XAFZZ	XAFZZ	PAOZZ	N/A	3E3E2	01-004-08131-011	. RIS II BOLT-UP PLATE, PLATING, FDE	1
9	PAFZZ	PAFZZ	PAOZZ	5305-00-101-8600	96906	MS21295-49	. SCREW, CAP, SOCKET HEAD	4
10	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08100-103	. RIS II M4A1 UPPER RAIL, FDE, ENGRAVING	1
							END OF FIGURE	

FIELD

UPPER RECEIVER 14.5 RAIL INTERFACE SYSTEM (RIS) II UPPER RECEIVER GROUP (URG) REPAIR PARTS LIST

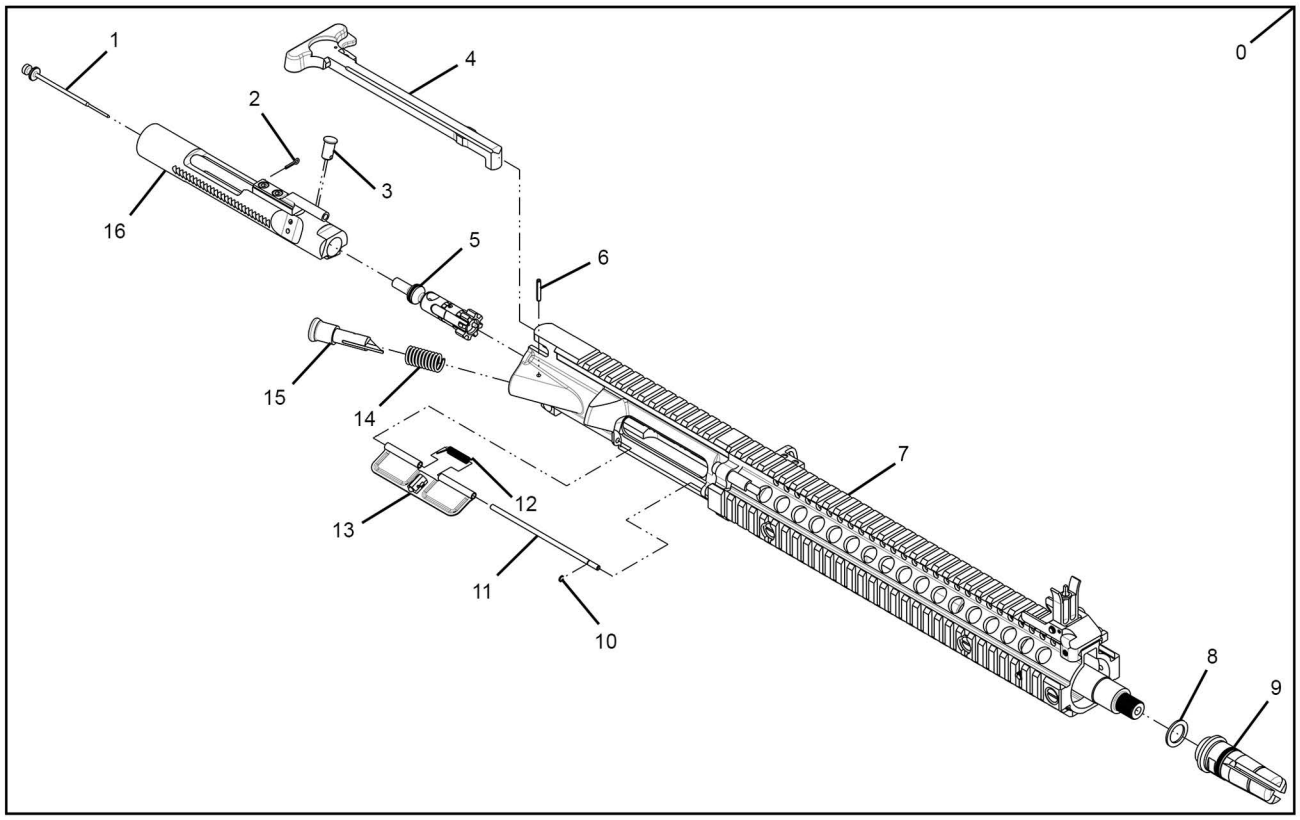


Figure 5. Upper Receiver (14.5 RIS II URG).

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 5 UPPER RECEIVER (14.5 RIS II URG).	
0	PAFFA	PAFFA	XAOOA	1005-01-647-7604	12255	408JXN00553-8	UPPER, RECEIVER (14.5 URG [SERIALIZED] SOCOM)	1
1	PAFZZ	PAFZZ	PAOZZ	1005-00-017-9547	19204	8448503	. PIN, FIRING.	1
2	PAFZZ	PAFZZ	PAOZZ	1005-00-999-1509	19204	8448504	. PIN, FIRING PIN RETAINER.	1
3	PAFZZ	PAFZZ	PAOZZ	5315-00-992-7294	19204	8448502	. PIN, GROOVED, HEADED (BOLT CAM)	1
4	PAFZZ	PAFZZ	PAOZZ	1005-00-017-9546	19204	8448517	. HANDLE ASSEMBLY, CHARGING . . .	1
5	AHFFF	AHFFF	AHOOO	1005-01-627-5406	12255	408JXN00638	. BOLT, URG RIS-II	1
6	PAFZZ	PAFZZ	PAOZZ	5315-00-840-3812	96906	MS16562-121	. PIN, SPRING (FORWARD ASSIST) . .	1
7	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-4	. 14.5 HEAVY BARREL & RAIL ASSEMBLY	1
7	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-2	. 14.5 BARREL & RAIL ASSEMBLY. . . .	1
8	PAFZZ	PAFZZ	PAOZZ	5365-01-632-3435	OBJZ8	Z-70031	. SHIM SET (SHIMS AND SPACER) . . .	1
9	PAFZZ	PAFZZ	PAOZZ	1005-01-599-7048	OBJZ8	FH556RC-1/2-28	. RETAINER, SUPPRESSOR, FLASH. .	1
10	PAFZZ	PAFZZ	PAOZZ	5325-00-999-0864	96906	MS16632-3012	. RING, RETAINING (EJECTION PORT COVER).	1
11	PAFZZ	PAFZZ	PAOZZ	5315-00-978-1023	19204	8448533	. PIN, GROOVED, HEADLESS (EJECTION PORT COVER)	1
12	PAFZZ	PAFZZ	PAOZZ	5360-00-978-1025	19200	8448532	. SPRING, HELICAL, TORSION (EJECTION PORT COVER)	1
13	PAFZZ	PAFZZ	PAOZZ	1005-00-978-1022	19204	8448525	. COVER, EJECTION PORT ASSEMBLY	1
14	PAFZZ	PAFZZ	PAOZZ	5360-00-017-9541	19200	8448540	SPRING, HELICAL, COMPRESSION (FORWARD ASSIST)	1
15	PAFZZ	PAFZZ	PAOZZ	1005-01-442-0160	19200	9349086	. FORWARD ASSIST ASSEMBLY	1
16	PAFFF	PAFFF	PAOOO	1005-01-441-1619	19204	8448505	. CARRIER ASSEMBLY, KEY AND BOLT	1
							END OF FIGURE	

FIELD

RAIL INTERFACE SYSTEM (RIS) II 14.5 HEAVY BARREL AND RAIL ASSEMBLY REPAIR PARTS LIST

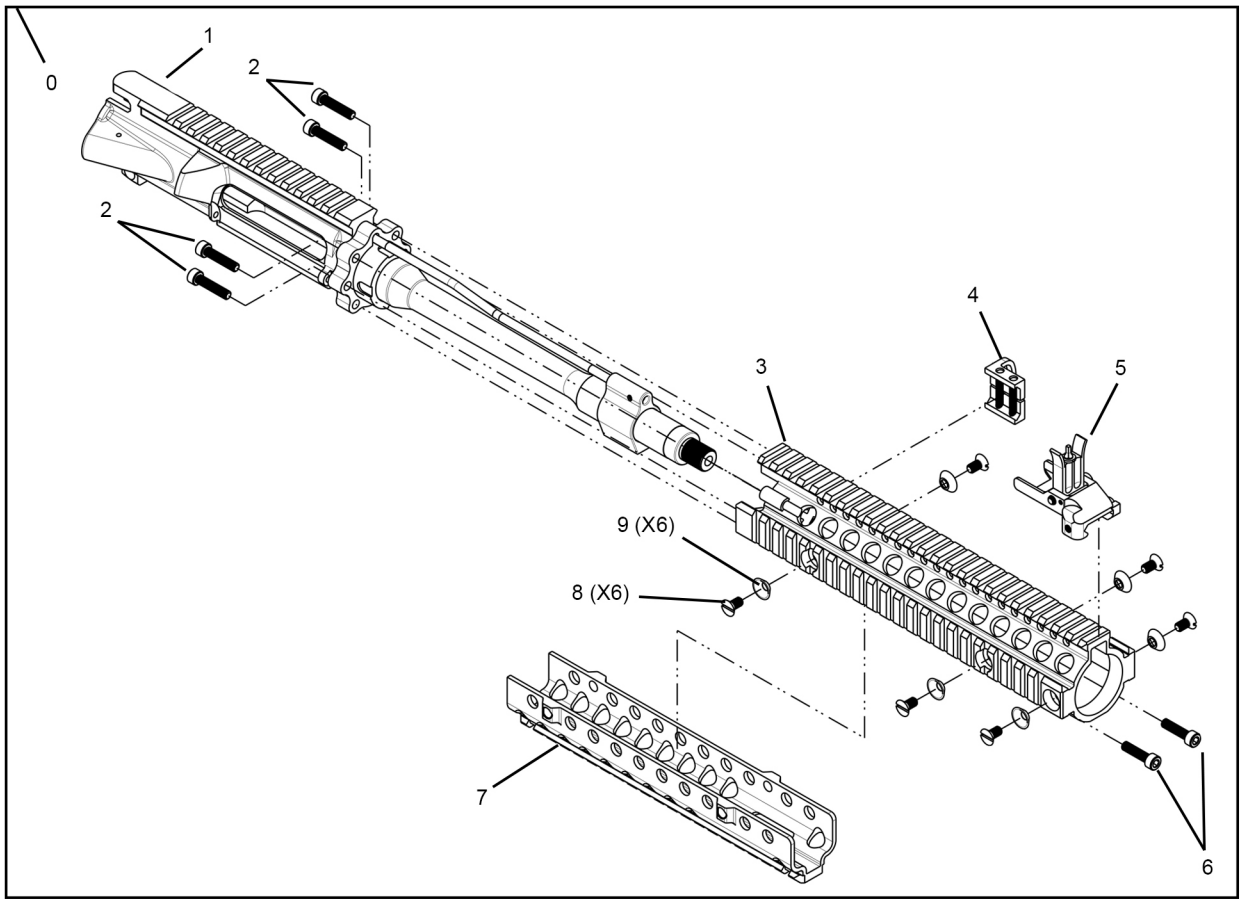


Figure 6. RIS II 14.5 Heavy Barrel and Rail Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 6 RIS II 14.5 HEAVY BARREL AND RAIL ASSEMBLY.	
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-4	14.5 HEAVY BARREL &RAIL ASSEMBLY	1
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00554-2	14.5 BARREL & RAIL ASSEMBLY	1
1	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-4	. 14.5 HEAVY BARREL ASSEMBLY . . .	1
1	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-2	. 14.5 BARREL ASSEMBLY	1
2	PAFZZ	PAFZZ	PAOZZ	5305-00-101-8600	96906	MS21295-49	. SCREW, CAP, SOCKET HEAD	4
3	XAFFA	XAFFA	XAOOA	N/A	3E3E2	01-004-0810-103	. RIS II M4A1 UPPER RAIL, FDE, ENGRAVING	1
4	PAFZZ	PAFZZ	PAOZZ	1005-01-597-2340	035T1	CQD-FEM	. BRACKET, MOUNTING	1
5	PAFZZ	PAFZZ	PAOZZ	1005-01-473-1410	1S002	99051	. FRONT FLIP SIGHT LO.	1
6	PAFZZ	PAFZZ	PAOZZ	5305-00-104-2784	96906	MS21295-43	. SCREW, CAP, SOCKET HEAD	2
7	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08112-103	. RIS II M4A1 LOWER RAIL, FDE, ENGRAVING	1
8	XAFZZ	XAFZZ	XAOZZ	5305-00-834-5576	24930	GS21-206R10X3-8	. SCREW, CAP, SOCKET HEAD	6
9	PAFZZ	PAFZZ	PAOZZ	5310-01-118-6766	39428	90262A011	. WASHER, FINISHING	6
							END OF FIGURE	

FIELD

WEAPON MOUNTED ADAPTER RAIL (RAIL INTERFACE SYSTEM [RIS] II 14.5) REPAIR PARTS LIST

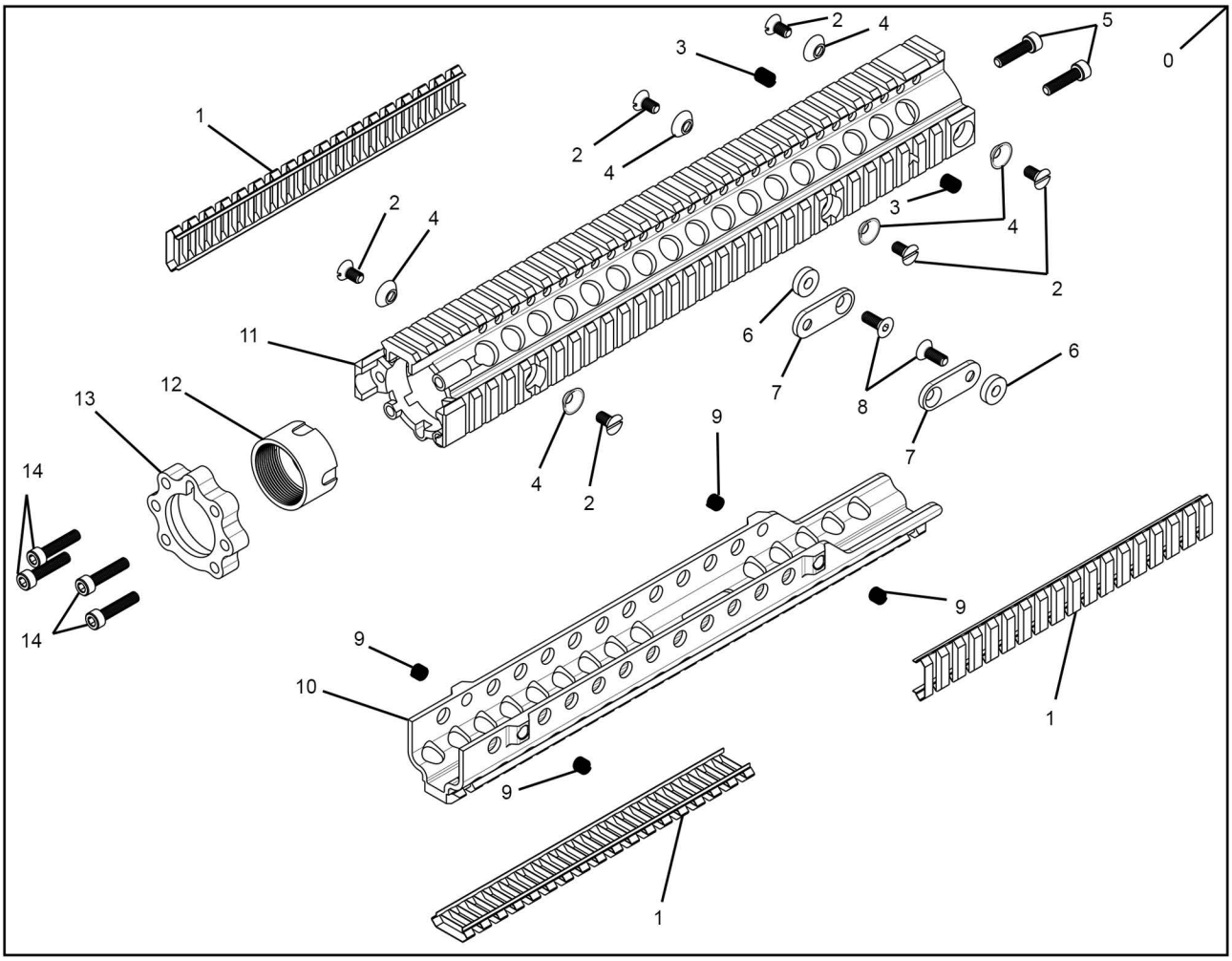


Figure 7. Weapon Mounted Adapter Rail (RIS II 14.5).

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 7 WEAPON MOUNTED ADAPTER RAIL (RIS II 14.5).	
0	PAFFZ	PAFFZ	PAOOZ	1005-01-547-2624	3E3E2	01-004-09157	ADAPTER RAIL, WEAPON MOUNTED (14.5)	1
1	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	21-010-00010-011	. LADDER PANEL, FDE.	3
2	XAFZZ	XAFZZ	XAOZZ	5305-00-834-5576	24930	GS21-206R10X3-8	. SCREW, CAP, SOCKET HEAD	6
3	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	15-030-22156	. STI, LOCKING, 1.5D, #10-32.	2
4	PAFZZ	PAFZZ	PAOZZ	5310-01-118-6766	39428	90262A011	. WASHER, FINISHING	6
5	PAFZZ	PAFZZ	PAOZZ	5305-00-104-2784	96906	MS21295-43	. SCREW, CAP, SOCKET HEAD	2
6	PAFZZ	PAFZZ	PAOZZ	5310-00-213-4960	96906	MS51859-4	. WASHER, FLAT	2
7	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08102	. RIS II HANGER	2
8	PAFZZ	PAFZZ	PAOZZ	5305-00-034-1229	10001	1611203PC101	. SCREW, CAP, SOCKET HEAD	2
9	PAFZZ	PAFZZ	PAOZZ	5325-00-721-7653	96906	MS21209F1-20	. INSERT, SCREW THREAD	4
10	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08112-103	. RIS II M4A1 LOWER RAIL, FDE, ENGRAVING	1
11	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08100-103	. RIS II M4A1 UPPER RAIL, FDE, ENGRAVING	1
12	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-002-08130-131	. BOLT UP SYSTEM BARREL NUT. . . .	1
13	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08131-011	. RIS II BOLT-UP PLATE, PLATING, FDE	1
14	PAFZZ	PAFZZ	PAOZZ	5305-00-101-8600	96906	MS21295-49	. SCREW, CAP, SOCKET HEAD	4
							END OF FIGURE	

FIELD

RAIL INTERFACE SYSTEM (RIS) II BARREL ASSEMBLY REPAIR PARTS LIST

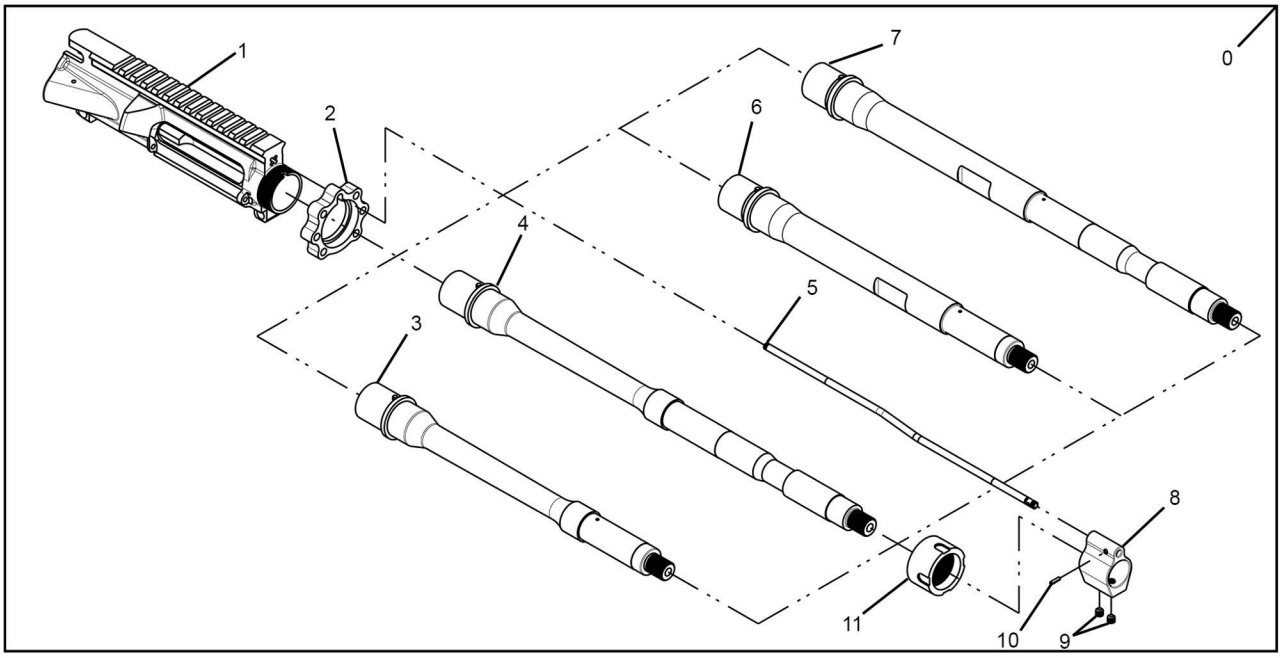


Figure 8. RIS II Barrel Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 8 RIS II BARREL ASSEMBLY.	
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-1	10.3 BARREL ASSEMBLY.	1
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-2	14.5 BARREL ASSEMBLY.	1
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-3	10.3 HEAVY BARREL ASSEMBLY	1
0	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00555-4	14.5 HEAVY BARREL ASSEMBLY	1
1	XAFFA	XAFFA	XAOOA	N/A	12255	408JXN00696	. M4 RECEIVER, MODIFIED	1
2	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-004-08131-011	. RIS II BOLT-UP PLATE, PLATING, FDE	1
3	PRFZZ	PRFZZ	PROZZ	N/A	12255	408JXN00588-1	. 10.3 BARREL (10.3 LIGHT BARREL) .	1
4	PRFZZ	PRFZZ	PROZZ	N/A	12255	408JXN00588-2	. 14.5 BARREL (14.5 LIGHT BARREL) .	1
5	PAFZZ	PAFZZ	PAOZZ	4710-01-233-8637	19200	9390016	. TUBE, BENT, METALLIC (GAS TUBE)	1
6	PAFZZ	PAFZZ	PAOZZ	1005-01-633-2345	19200	13054562	. BARREL RIFLE (10.3 M4A1 HEAVY BARREL)	1
7	PAFZZ	PAFZZ	PAOZZ	1005-01-633-2349	19200	13054561	. BARREL RIFLE (14.5 M4A1 HEAVY BARREL)	1
8	PAFZZ	PAFZZ	PAOZZ	1005-01-597-1170	3E3E2	408JXN00024	. CYLINDER, GAS, GUN (GAS BLOCK LOW PROFILE).	1
9	PAFZZ	PAFZZ	PAOZZ	5305-00-724-6794	96906	MS51964-48	. SETSCREW (GAS BLOCK SETSCREWS).	2
10	PAFZZ	PAFZZ	PAOZZ	5315-00-058-6044	80205	MS16562-106	. PIN, SPRING (GAS TUBE)	1
11	XAFZZ	XAFZZ	XAOZZ	N/A	3E3E2	01-002-08130-131	. BOLT UP SYSTEM BARREL NUT. . . .	1
							END OF FIGURE	

FIELD

UPPER RECEIVER GROUP (URG) RAIL INTERFACE SYSTEM (RIS) II BOLT REPAIR PARTS LIST

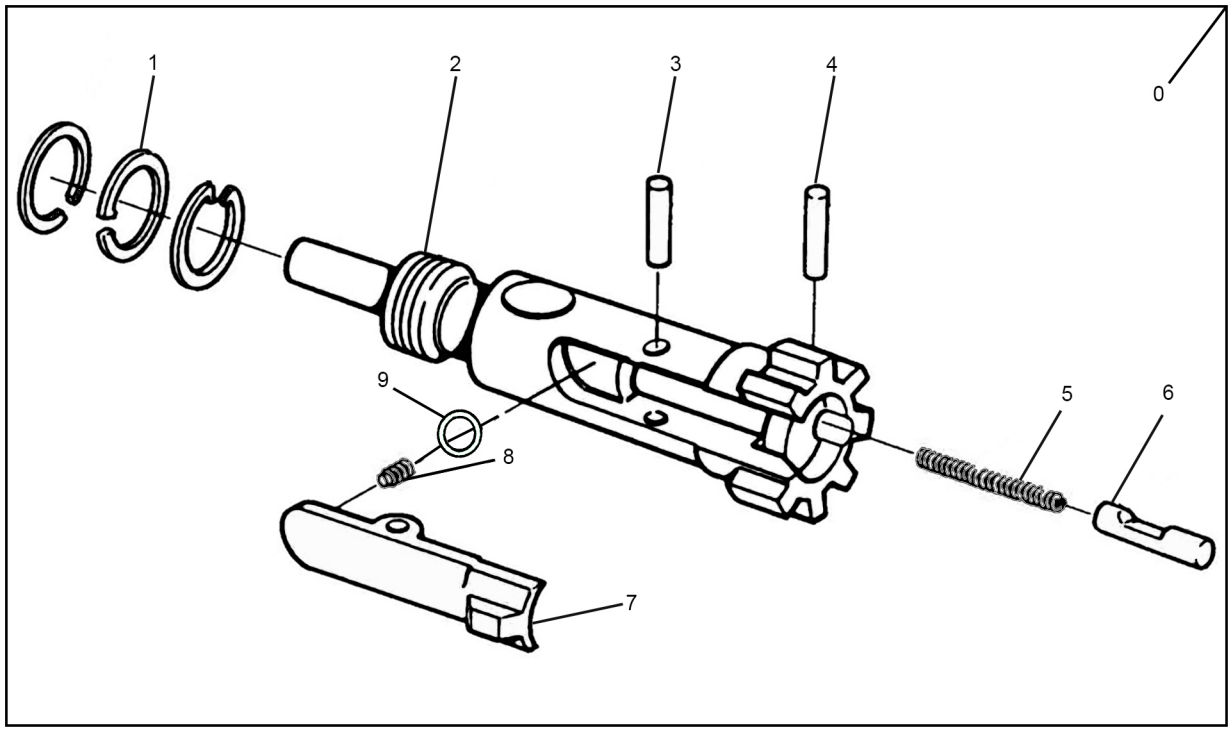


Figure 9. URG RIS II Bolt.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 9 URG RIS II BOLT.	
0	AHFFF	AHFFF	AHOOO	1005-01-627-5406	12255	408JXN00638	BOLT, URG RIS-II	1
0	PAFFF	PAFFF	PAOOO	1005-01-505-1035	13629	SP64027	BOLT, BREECH (M4A1 BOLT ASSY, W/O O-RING) (NOT SHOWN)	1
1	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7287	19204	8448511	. RING, BOLT	3
2	XAFZZ	XAFZZ	XAOZZ	1005-01-465-0080	19200	8448510	. BOLT	1
3	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7290	19204	8448513	. PIN, EXTRACTOR	1
4	PAFZZ	PAFZZ	PAOZZ	5315-00-597-5086	96906	MS16562-98	. PIN, SPRING EJECTOR	1
5	PAFZZ	PAFZZ	PAOZZ	5360-00-992-7292	19204	8448516	. SPRING, HELICAL, COMPRESSION .	1
6	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7291	19204	8448515	. EJECTOR, CARTRIDGE	1
7	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7288	19204	8448512	. EXTRACTOR, CARTRIDGE	1
8	PAFZZ	PAFZZ	PAOZZ	1005-01-505-2886	19200	13004786	. SPRING, ASSEMBLY, EXTRACTOR, SMALL ARMS WITH INSERT	1
9	PAFZZ	PAFZZ	PAOZZ	5331-01-609-9769	3W544	100632701	. O-RING	1
							END OF FIGURE	

FIELD

KEY AND BOLT CARRIER ASSEMBLY REPAIR PARTS LIST

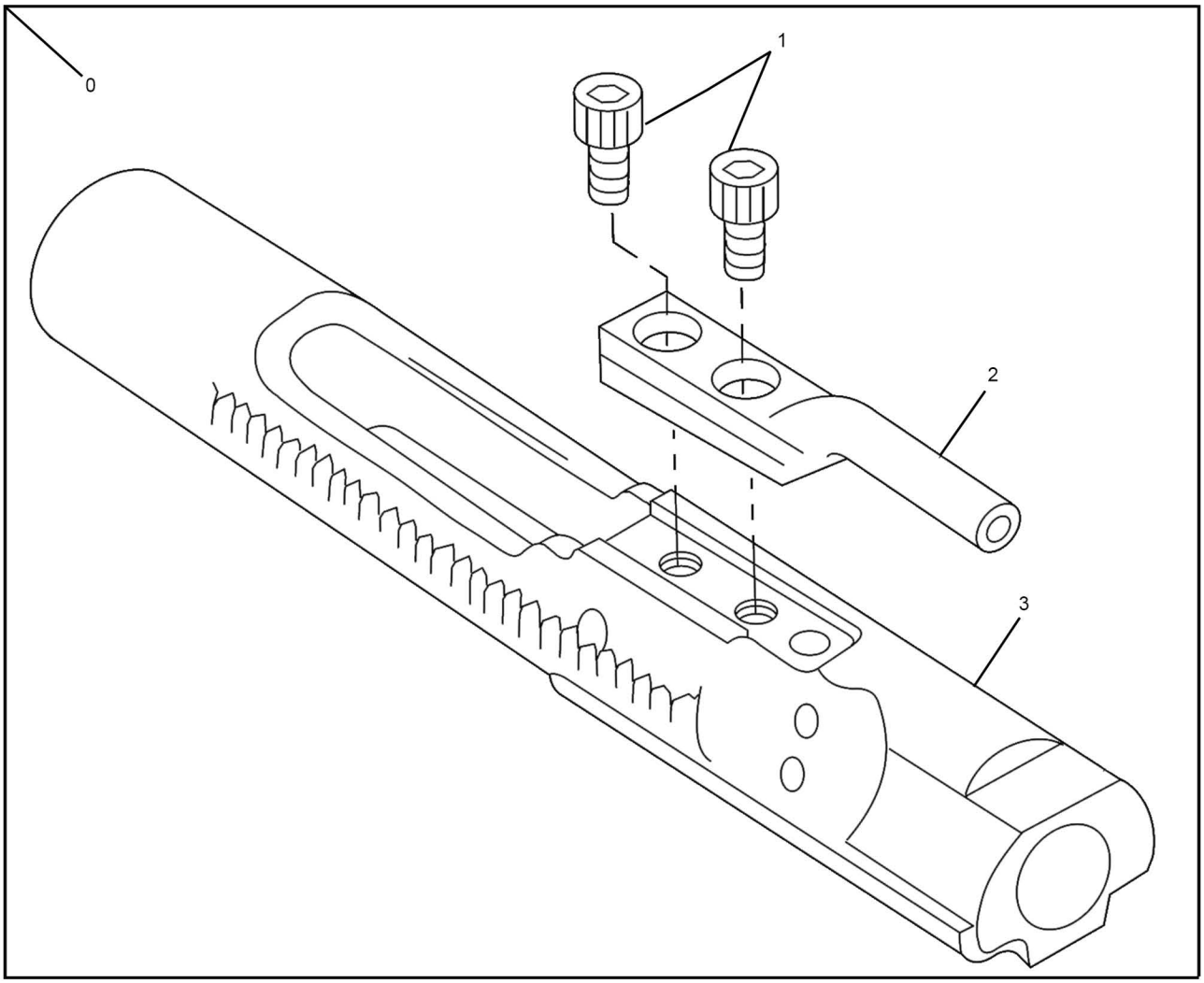


Figure 10. Key and Bolt Carrier Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 10 KEY AND BOLT CARRIER ASSEMBLY.	
0	PAFFZ	PAFFZ	PAOOZ	1005-01-441-1619	19204	8448505	CARRIER ASSEMBLY, KEY AND BOLT . .	1
1	PAFZZ	PAFZZ	PAOZZ	5305-00-992-7284	19204	8448508	. SCREW, CAP, SOCKET HEAD	4
2	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7283	19200	8448506	. KEY, BOLT CARRIER	1
3	XAFZZ	XAFZZ	XAOZZ	1005-00-738-6213	19200	8448507	. CARRIER, BOLT	1
							END OF FIGURE	

FIELD

LOWER RECEIVER AND BUTTSTOCK ASSEMBLY REPAIR PARTS LIST

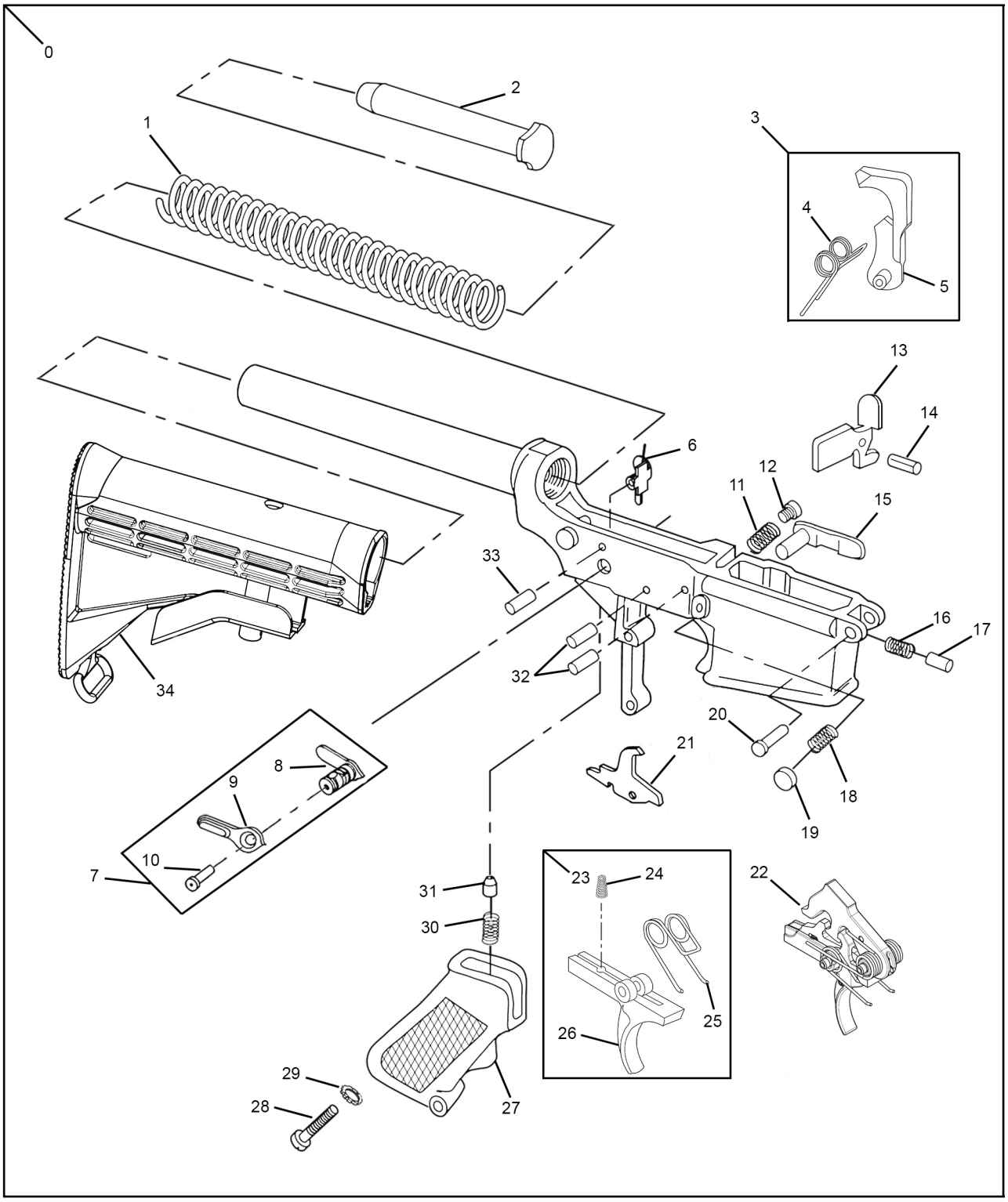


Figure 11. Lower Receiver and Buttstock Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 11 LOWER RECEIVER AND BUTTSTOCK ASSEMBLY.	
0	XAFFD	XAFFD	XAOOD	N/A	19200	12972690	LOWER RECEIVER AND BUTTSTOCK ASSEMBLY	1
1	PAFZZ	PAFZZ	PAOZZ	5360-01-233-8617	19200	9390022	. SPRING, HELICAL, COMPRESSION	1
2	PAFZZ	PAFZZ	PAOZZ	1005-01-522-0772	19200	13004468	. BUFFER ASSEMBLY, RECOIL	1
3	AFFFF	AFFFF	AFOOO	N/A	19204	8448610	. HAMMER ASSEMBLY	1
4	AFFFF	AFFFF	AFOOO	5360-00-992-6648	19204	8448611	. SPRING, HELICAL, TORSION	1
5	AFFFF	AFFFF	AFOOO	1005-00-017-9551	19200	8448612	. HAMMER, FIRING, SMALL ARMS	1
6	PAFZZ	PAFZZ	PAOZZ	1005-00-992-6649	19200	8448595	. SEAR	1
7	PAFFZ	PAFFZ	PAOOZ	1005-01-673-4242	19200	13060592	. SELECTOR, FIRE CONTROL, SMALL ARMS (ASSEMBLY)	1
8	XAFFF	XAFFF	XAOOO	N/A	19200	13027936	LEVER, MAIN	1
9	PAFZZ	PAFZZ	PAOZZ	5930-01-585-4340	19200	13027937	. LEVER, RIGHT	1
10	XAFZZ	XAFZZ	XAOZZ	N/A	19200	13036743	. SCREW, CAP, SOCKET HEAD	1
11	PAFZZ	PAFZZ	PAOZZ	5360-00-056-2246	19204	8448633	. SPRING, HELICAL, COMPRESSION	1
12	PAFZZ	PAFZZ	PAOZZ	1005-00-056-2247	19204	8448634	. PLUNGER, BOLT CATCH	1
13	PAFZZ	PAFZZ	PAOZZ	1005-00-017-9548	19200	8448628	. CATCH, BOLT	1
14	PAFZZ	PAFZZ	PAOZZ	5315-00-812-3312	80205	MS16562-119	. PIN, SPRING	1
15	PAFZZ	PAFZZ	PAOZZ	1005-00-056-2201	19204	8448638	. CATCH, MAGAZINE	1
16	PAFZZ	PAFZZ	PAOZZ	5360-00-992-6655	19204	8448586	SPRING, HELICAL, COMPRESSION (PIVOT PIN)	1
17	PAFZZ	PAFZZ	PAOZZ	5315-00-992-6654	19204	8448585	. PIN, STRAIGHT, HEADLESS	1
18	PAFZZ	PAFZZ	PAOZZ	5360-00-992-7301	19204	8448637	. SPRING, HELICAL, COMPRESS (MAGAZINE CATCH)	1
19	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7302	19204	8448636	. BUTTON, MAGAZINE CATCH	1
20	PAFZZ	PAFZZ	PAOZZ	5315-00-017-9537	19204	8448621	. PIN, GROOVED, HEADED (PIVOT PIN)	1
21	PAFZZ	PAFZZ	PAOZZ	1005-00-999-0406	19200	8448635	. DISCONNECTOR	1
22	PAFZZ	PAFZZ	PAOZZ	1005-01-618-8104	43VN9	05-243	. TRIGGER ASSEMBLY (SUPER SELECT FIRE TRIGGER)	1
23	AFFFF	AFFFF	AFOOO	N/A	19200	12972698	. TRIGGER ASSEMBLY	1
24	PAFZZ	PAFZZ	PAOZZ	5360-01-396-0256	19200	12972695	. SPRING, HELICAL, COMPRESSION	1
25	PAFZZ	PAFZZ	PAOZZ	5360-00-992-7308	19204	8448593	. SPRING, HELICAL, TORSION	1
26	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7307	19200	8448592	. TRIGGER	1
27	PAFZZ	PAFZZ	PAOZZ	1005-01-148-4805	19200	9349127	. GRIP, RIFLE (BLACK PLASTIC)	1
28	PAFZZ	PAFZZ	PAOZZ	5305-01-268-1191	88044	AN501D41618	. SCREW, MACHINE (RIFLE GRIP)	1
29	PAFZZ	PAFZZ	PAOZZ	5310-00-527-3634	80205	MS35335-61	. WASHER, LOCK (RIFLE GRIP)	1

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
30	PAFZZ	PAFZZ	PAOZZ	5360-00-992-7292	19204	8448516	. SPRING, HELICAL, COMPRESSION (SAFETY)	1
31	PAFZZ	PAFZZ	PAOZZ	1005-00-992-6667	19204	8448631	. DETENT, SAFETY	1
32	PAFZZ	PAFZZ	PAOZZ	5315-00-992-7309	19204	8448609	. PIN, GROOVED, HEADLESS (TRIGGER AND HAMMER.	2
33	PAFZZ	PAFZZ	PAOZZ	5315-00-992-6650	19204	8448599	. PIN, GROOVED, HEADLESS (AUTOMATIC SEAR)	1
34	PAFFZ	XAFFZ	XAOOZ	1005-01-673-4294	19200	12012082	. BUTTSTOCK ASSEMBLY	1

END OF FIGURE

FIELD

BUTTSTOCK ASSEMBLY REPAIR PARTS LIST

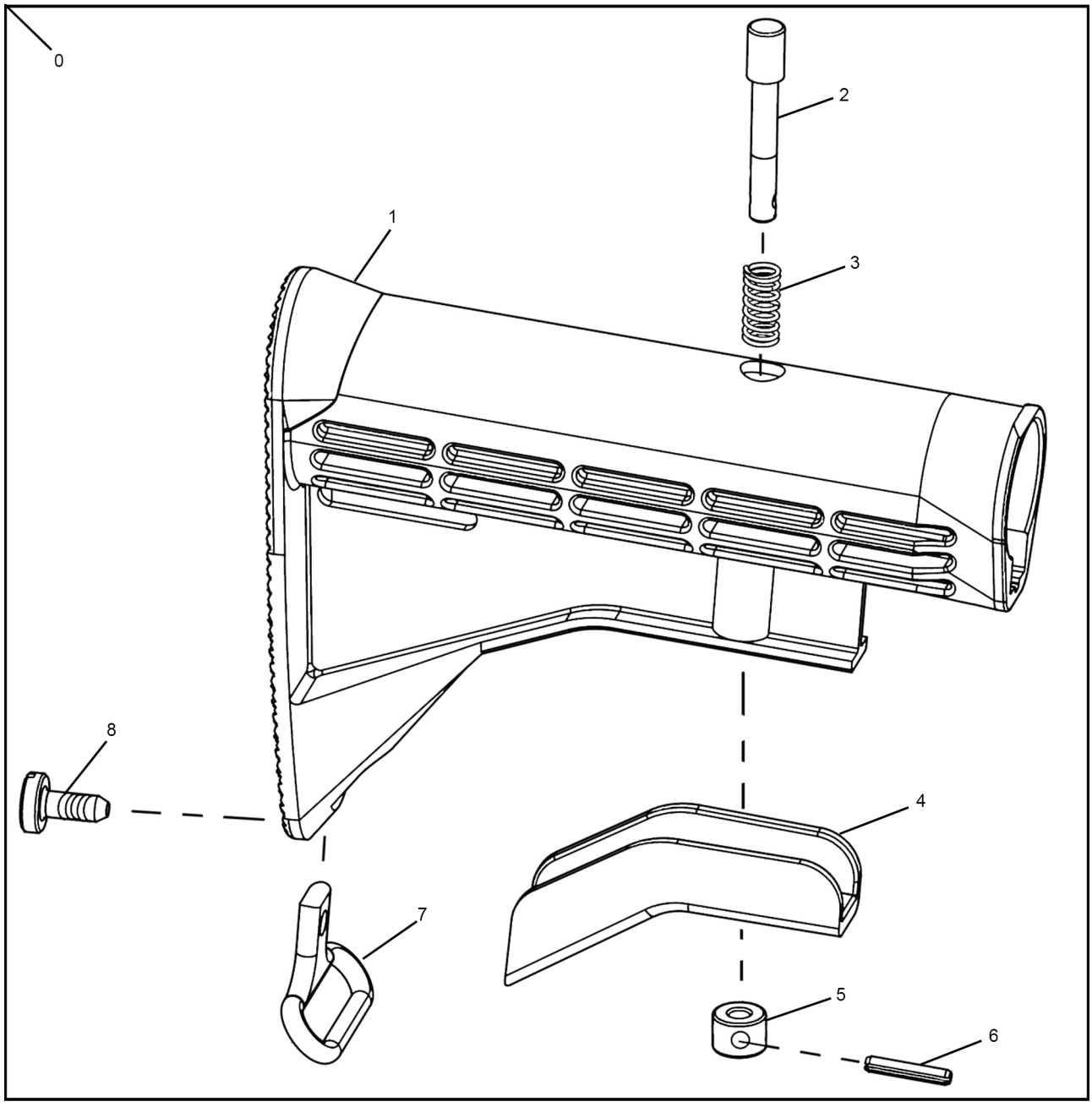


Figure 12. Buttstock Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 12 BUTTSTOCK ASSEMBLY.	
0	PAFFZ	XAFFZ	XAOOZ	1005-01-673-4294	19200	12012082	BUTTSTOCK ASSEMBLY	1
1	PAFZZ	PAFZZ	PAOZZ	1005-01-459-0734	19200	12012081	. BUTTSTOCK	1
2	PAFZZ	PAFZZ	PAOZZ	5315-01-233-8608	19200	9390025	. PIN, SHOULDER HEADLESS	1
3	PAFZZ	PAFZZ	PAOZZ	5360-01-233-8616	19200	9390027	. SPRING, HELICAL COMPRESSION. .	1
4	PAFZZ	PAFZZ	PAOZZ	1005-01-233-8638	19200	9390014	. LEVER, RELEASE, SMALL ARMS . . .	1
5	PAFZZ	PAFZZ	PAOZZ	5310-01-233-8626	19200	9390026	. NUT, SELF-LOCKING, ROUND.	1
6	PAFZZ	PAFZZ	PAOZZ	5315-00-843-9487	80205	MS16562-202	. PIN, SPRING	1
7	PAFZZ	PAFZZ	PAOZZ	1005-00-403-0964	19204	8448652	. SWIVEL, SLING, SMALL ARMS	1
8	PAFZZ	PAFZZ	PAOZZ	5305-01-459-5982	19200	12012083	. SCREW, MACHINE	1
							END OF FIGURE	

FIELD

LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY REPAIR PARTS LIST

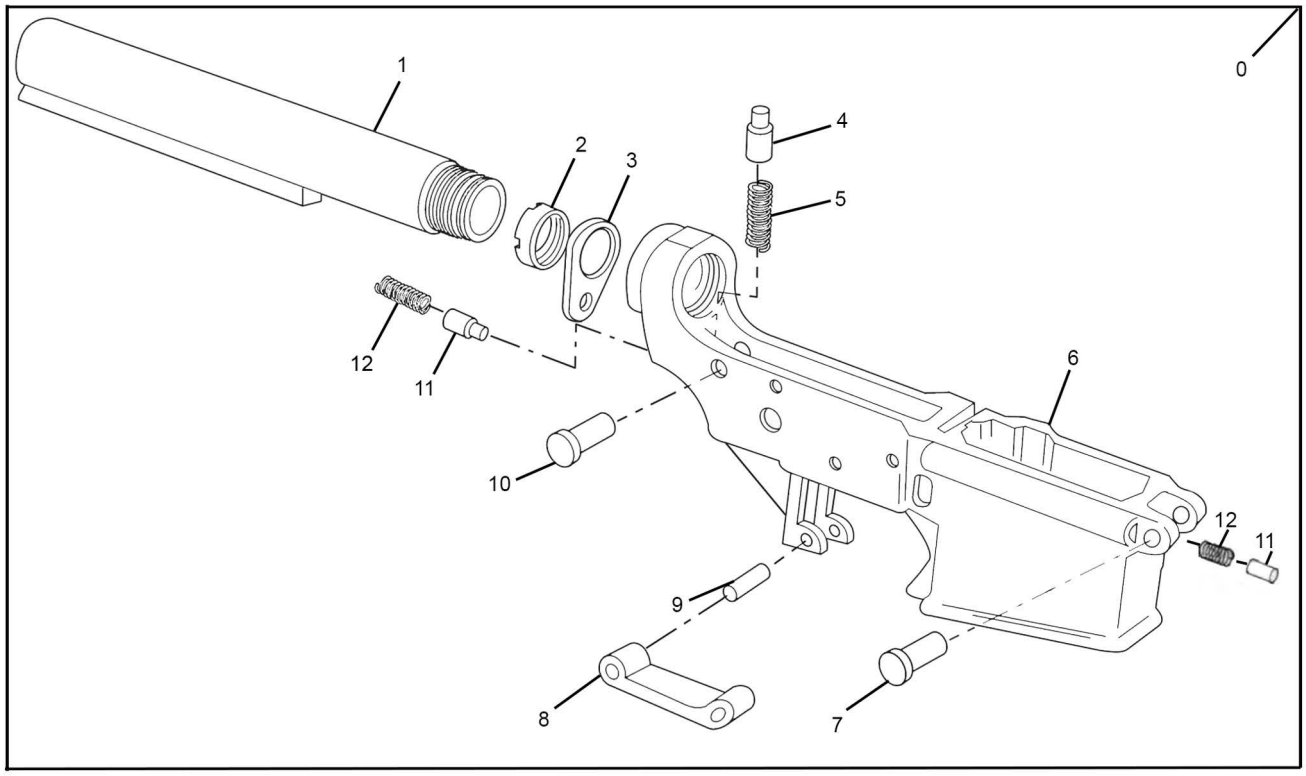


Figure 13. Lower Receiver and Receiver Extension Assembly.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 13 LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY.	
0	XAFFA	XAFFA	XAOOA	N/A	19200	12972690	LOWER RECEIVER AND RECEIVER EXTENSION ASSEMBLY	1
1	PAFZZ	PAFZZ	PAOZZ	1005-01-233-8531	19200	9390019	. EXTENSION, LOWER (RECEIVER) . .	1
2	PAFZZ	PAFZZ	PAOZZ	5310-01-233-8625	19200	9390020	. NUT, PLAIN ROUND	1
3	PAFZZ	PAFZZ	PAOZZ	1005-01-233-8530	19200	9390021	. PLATE, RECEIVER END	1
4	PAFZZ	PAFZZ	PAOZZ	5315-00-992-6651	19204	8448582	. PIN, SHOULDER, HEADLESS	1
5	PAFZZ	PAFZZ	PAOZZ	5360-00-992-6652	19200	8448583	. SPRING, HELICAL, COMPRESSION (BUFFER RETAINER)	1
6	XAFDA	XAFDA	XAODA	1005-01-581-7049	19200	12972652	. MARKING, LOWER, RECEIVER MODEL M4A1	1
7	PAFZZ	PAFZZ	PAOZZ	5315-00-017-9537	19204	8448621	. PIN, GROOVED HEADED (PIVOT PIN).	1
8	PAFZZ	PAFZZ	PAOZZ	1005-00-992-7299	19204	8448587	. GUARD, TRIGGER	1
9	PAFZZ	PAFZZ	PAOZZ	5315-00-058-6081	80205	MS16562-129	. PIN, SPRING (TRIGGER GUARD PIN)	1
10	PAFZZ	PAFZZ	PAOZZ	5315-00-992-6653	19204	8448584	. PIN, GROOVED HEADED.	1
11	PAFZZ	PAFZZ	PAOZZ	5315-00-992-6654	192004	8448585	. PIN, STRAIGHT, HEADLESS	1
12	PAFZZ	PAFZZ	PAOZZ	5360-00-992-6655	19204	8448586	. SPRING, HELICAL, COMPRESSION (PIVOT PIN).	1
							END OF FIGURE	

FIELD

LAW FOLDING BUTTSTOCK REPAIR PARTS LIST

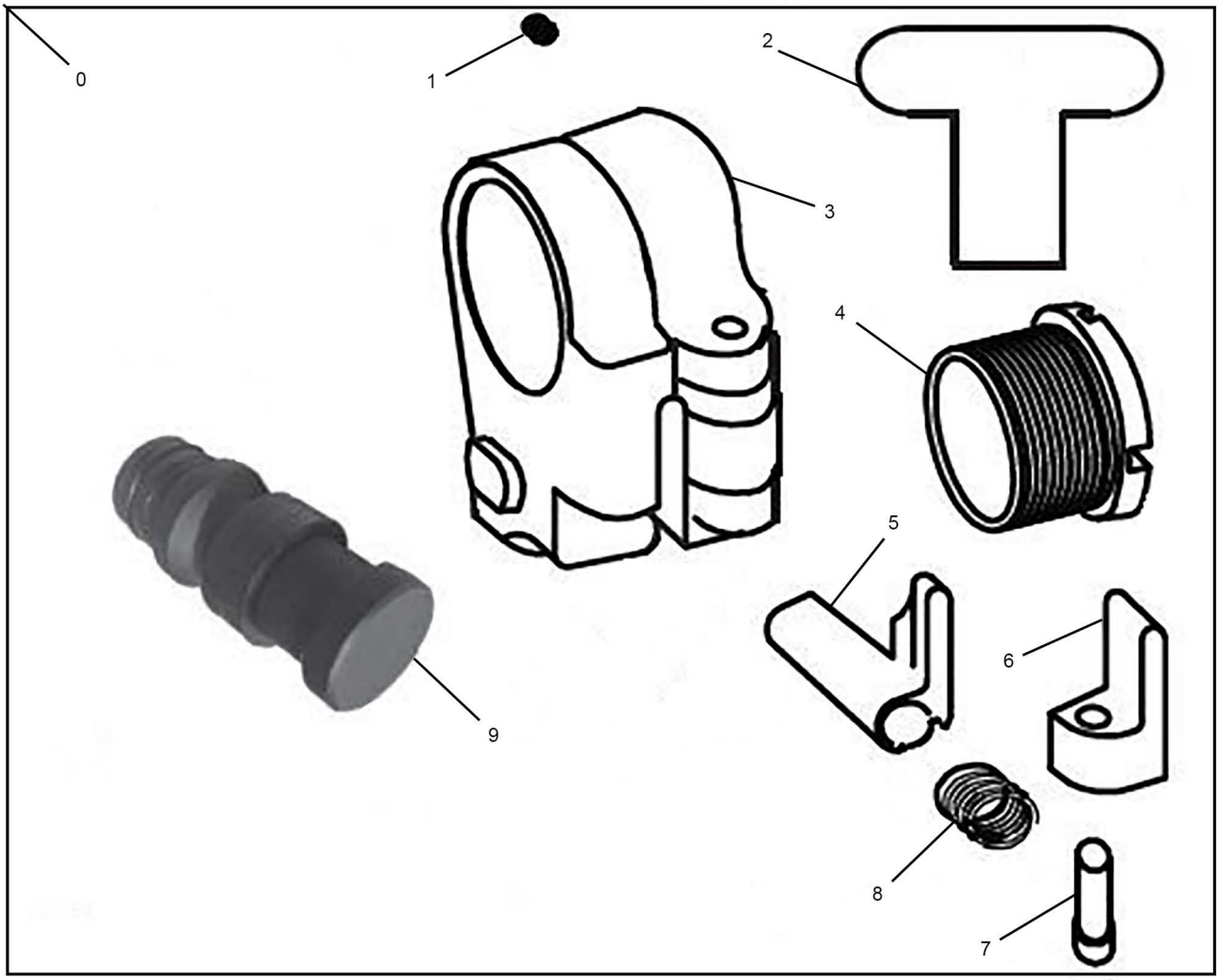


Figure 14. LAW Folding Buttstock.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(C) NAVY	(3) NSN	(4) CAGE C	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
								GROUP 3401	
								FIG. 14 LAW FOLDING BUTTSTOCK.	
0	PAFZZ	PAFZZ	PAOZZ	PAOZZ	1005-01-672-4614	7C9Y9	99329	LOCK, SHOULDER GUN STOCK BUTT PLATE ASSEMBLY (FOLDING BUTTSTOCK ADAPTER).	1
1	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. FLANGE SETSCREW, 3/32	1
2	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. FLANGE TOOL	1
3	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. HINGE ASSEMBLY	1
4	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. THREADED FLANGE	1
5	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. BUTTON	1
6	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. SIDE PLATE COVER.	1
7	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. HEX SCREW, 9/64.	1
8	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. BUTTON SPRING	1
9	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	. BOLT CARRIER EXTENSION	1
								END OF FIGURE	

FIELD

UPPER RECEIVER GROUP IMPROVED (URG-I) REPAIR PARTS LIST

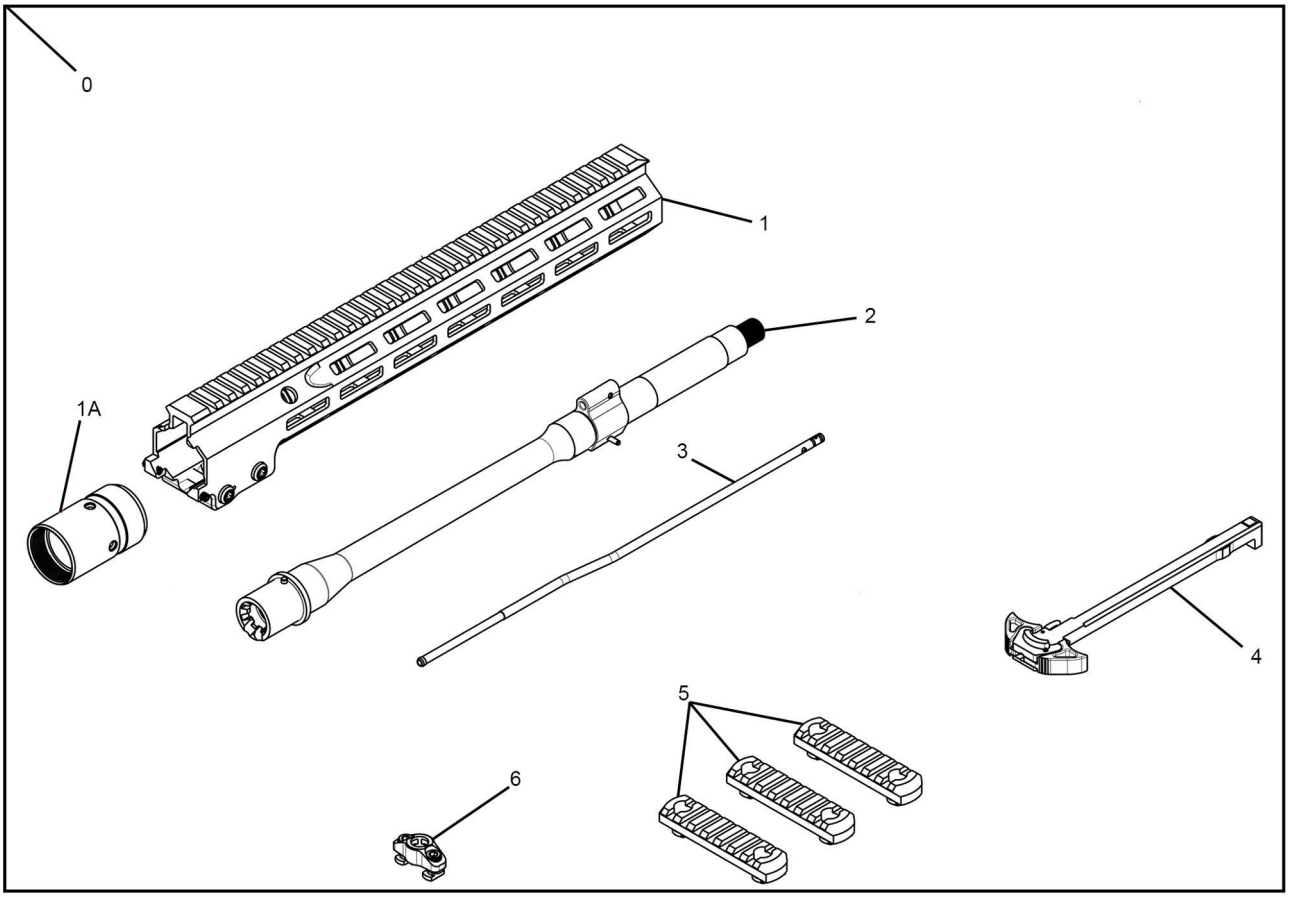


Figure 15. URG-I Conversion Kit.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
	(A) ARMY					
					GROUP 3401	
					FIG. 15 URG-I CONVERSION KIT.	
0	PAFFZ	1005-01-671-3911	12255	408JXN00879	MODIFICATION KIT, GUN, WEAPON (14.5" URG-I KIT).	1
1	PAFFZ	1005-01-672-4797	43VN9	05-650S	. ADAPTER RAIL, WEAPON MOUNTED (13.5-INCH M-LOK HANDGUARD).	1
1A	PAFZZ	5310-01-672-4806	43VN9	02-502	. NUT, PLAIN, BARREL	1
2	PAFFZ	1005-01-679-8237	3E3E2	07-077-07308	. BARREL, CARBINE (MID LENGTH COLD HAMMER FORGE BARREL, 14.5-INCH)	1
3	PAFZZ	4710-01-679-8420	3E3E2	04-013-18034	. TUBE, BENT, METALLIC (MID LENGTH GAS TUBE W/ROLL PIN, PIN NOT SHOWN) .	1
4	PAFZZ	1005-01-672-4803	43VN9	05-664S	. HANDLE, GUN CHARGER (AMBIDEXTROUS CHARGING HANDLE)	1
5	PAFZZ	1005-01-672-4788	1LX50	MAG582-BLK	. ADAPTER RAIL, WEAPON MOUNTED (M-LOK RAIL ADAPTER, 7 SLOT)	3
6	PAFZZ	1005-01-672-4790	1LX50	MAG606-BLK	. ADAPTER RAIL, WEAPON MOUNTED (M-LOK QUICK DISCONNECT SLING MOUNT) .	1
					END OF FIGURE	

FIELD

14.5 MID LENGTH BARREL REPLACEMENT KIT REPAIR PARTS LIST

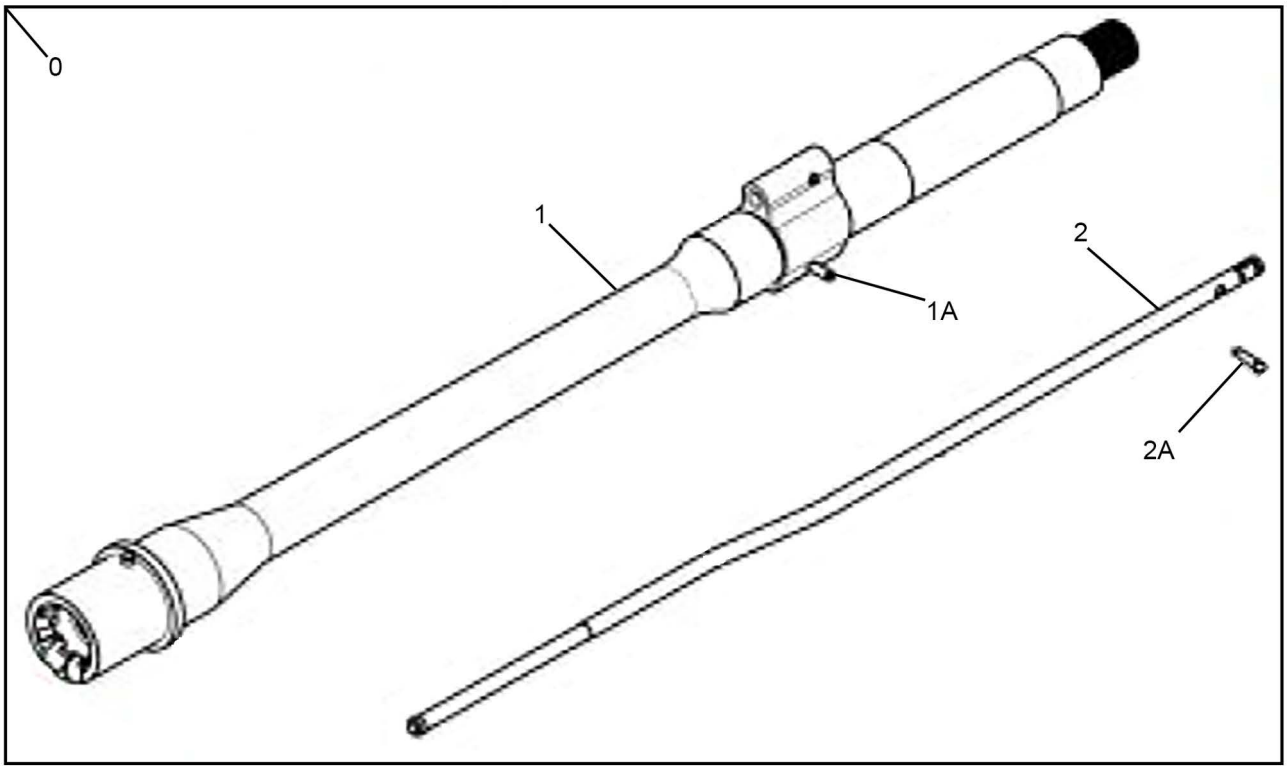


Figure 16. 14.5 Mid Length Barrel Replacement Kit.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
	(A) ARMY					
					GROUP 3401	
					FIG. 16 14.5 MID LENGTH BARREL REPLACEMENT KIT.	
0	PAFFZ	1005-01-679-8503	12255	408JXN00906	PARTS KIT, GUN (14.5” MID LENGTH BARREL REPLACEMENT KIT).	1
1	PAFFZ	1005-01-679-8237	3E3E2	07-077-07308	. BARREL, CARBINE (MID LENGTH COLD HAMMER FORGED BARREL, 14.5”)	1
1A	PAFZZ	5315-01-679-8242	3E3E2	15-028-02227	. PIN, TAPERED PLAIN (BARREL AND GAS BLOCK TAPER PIN #2/0)	1
2	PAFFZ	4710-01-679-8420	3E3E2	04-013-18034	. TUBE, BENT METALLIC (MID LENGTH GAS TUBE W/ROLL PIN)	1
2A	PAFZZ	5315-00-058-6044	80205	MS16562-106	. PIN, SPRING (GAS TUBE PIN)	1
					END OF FIGURE	

FIELD

13.5 HANDGUARD REPAIR PARTS LIST

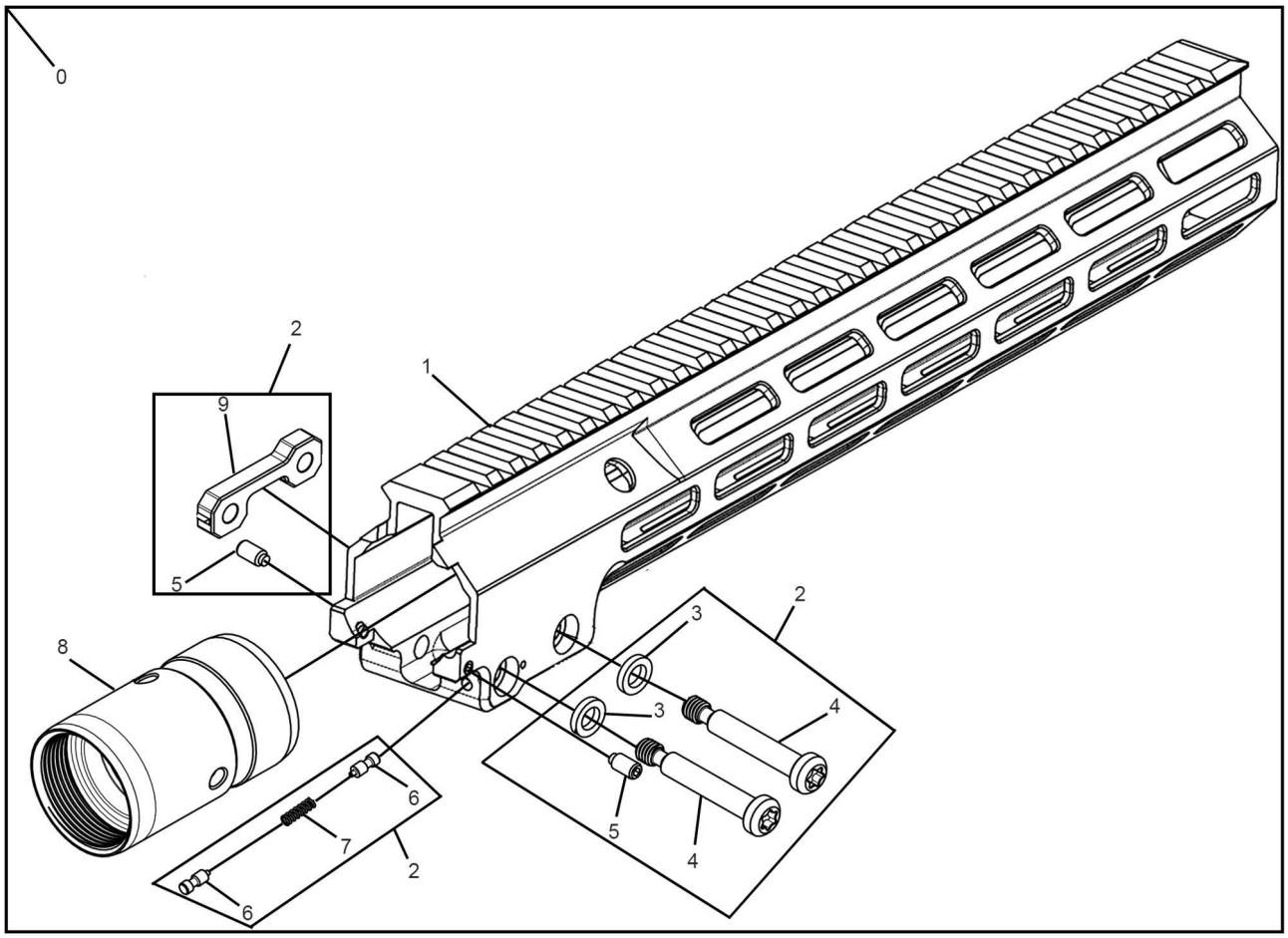


Figure 17. 13.5 Handguard.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 17 13.5 HANDGUARD.	
0	PAFFZ			1005-01-627-4797	43VN9	05-650S	ADAPTER RAIL, WEAPON MOUNTED (13.5IN M-LOK HANDGUARD)	1
1	PAFZZ			N/A	43VN9	02-974	. HANDGUARD, MARK 16 X 13.5 INCH	1
2	PAFFZ			5325-01-683-2087	43VN9	05-1135	. PARTS KIT FASTENER (URG-I HANDGUARD FASTENER KIT)	1
3	XAFZZ			N/A	43VN9	02-323	. M6 SCREW WASHER	2
4	XAFZZ			N/A	43VN9	02-1013	. RAIL MOUNTING BOLT.	2
5	XAFZZ			5305-01-672-4796	43VN9	06-102	. SETSCREW (HANDGUARD ALIGNMENT SCREWS)	2
6	XAFZZ			N/A	43VN9	02-860	. BOLT RETAINER PLUNGER.	2
7	XAFZZ			N/A	43VN9	04-283	. BOLT RETAINER SPRING	1
8	PAFZZ			5310-01-672-4806	43VN9	02-502	. NUT, PLAIN, BARREL (URG-I BARREL NUT)	1
9	XAFZZ			N/A	43VN9	02-810	. PRESS NUT, M6X1,2 HOLE	1
							END OF FIGURE	

FIELD

11.5 UPPER RECEIVER GROUP IMPROVED (URG-I) CONVERSION KIT REPAIR PARTS LIST

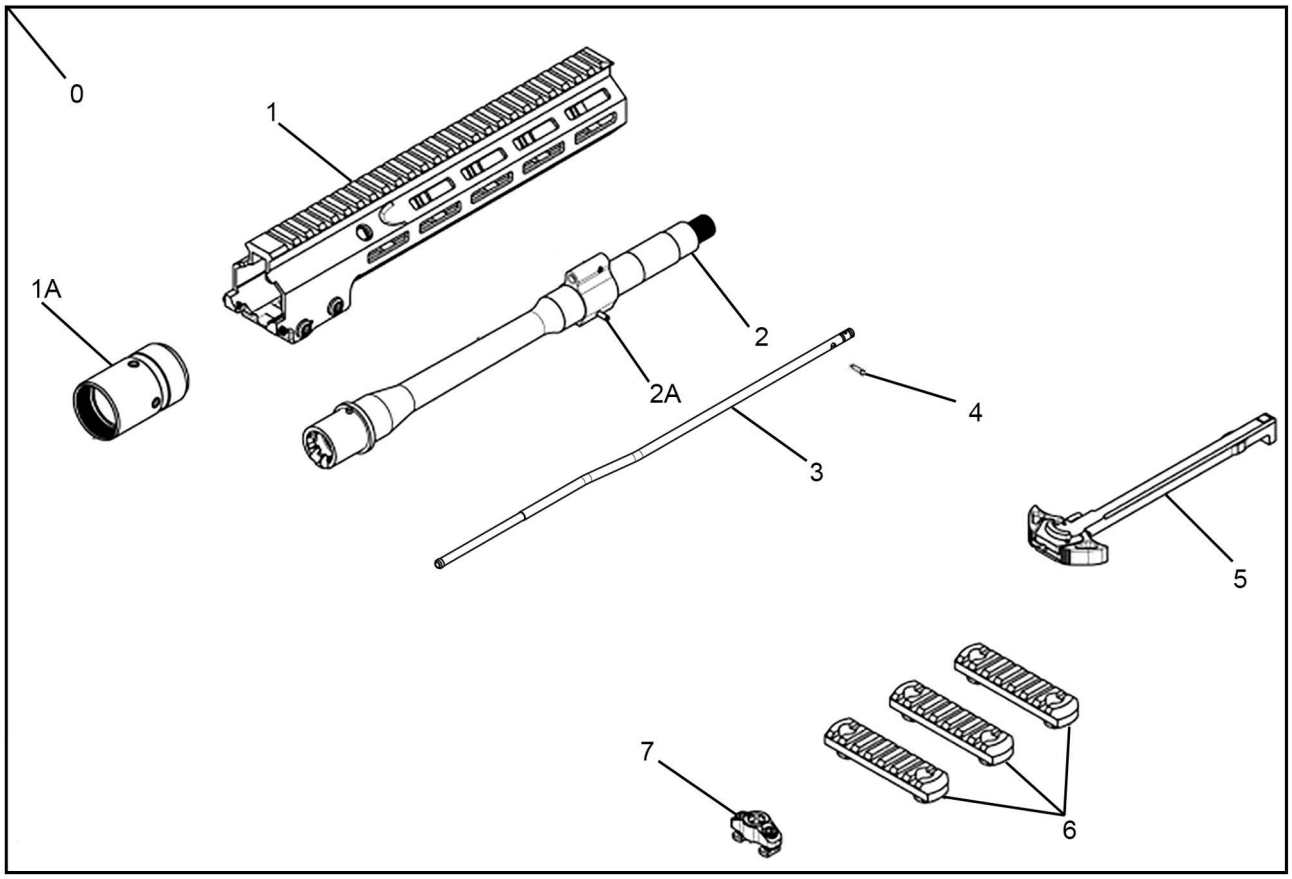


Figure 18. 11.5 URG-I Conversion Kit.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
							GROUP 3401	
							FIG. 18 11.5 URG-I CONVERSION KIT.	
0	PAFFZ			1005-01-684-1906	12255	408JXN00953	MODIFICATION KIT, GUN, WEAPON (11.5" URG-I CONVERSION KIT)	1
1	PAFFZ			1005-01-685-0051	43VN9	05-1073	. ADAPTER RAIL, WEAPON MOUNTED (10.5 IN M-LOK HANDGUARD)	1
1A	PAFZZ			5310-01-672-4806	02-502	43VN9	. NUT, PLAIN, BARREL (URG-I BARREL NUT)	1
2	PAFFZ			1005-01-685-0050	3E3E2	07-077-07108	. BARREL, CARBINE (CARBINE LENGTH COLD HAMMER FORGED BARREL, 11.5")	1
2A	PAFZZ			5315-01-679-8242	3E3E2	15-028-02227	. TAPER PIN #2/0	1
3	PAFZZ			4710-01-233-8637	19200	9390016	. TUBE, BENT, METALLIC (CARBINE LENGTH GAS TUBE)	1
4	PAFZZ			5315-00-058-6044	80205	MS16562-106	. PIN, GAS TUBE	1
5	PAFZZ			1005-01-672-4803	43VN9	05-664S	. HANDLE, GUN CHARGER (AMBIDEXTROUS CHARGING HANDLE)	1
6	PAFZZ			1005-01-672-4788	1LX50	MAG582-BLK	. ADAPTER RAIL, WEAPON MOUNTED (M-LOK RAIL ADAPTER, 7 SLOT)	3
7	PAFZZ			1005-01-672-4790	1LX50	MAG606-BLK	. ADAPTER RAIL, WEAPON MOUNTED (M-LOK QUICK DISCONNECT SLING MOUNT)	1
							END OF FIGURE	

FIELD

10.5 MODULAR LOCK (M-LOK) HANDGUARD REPAIR PARTS LIST

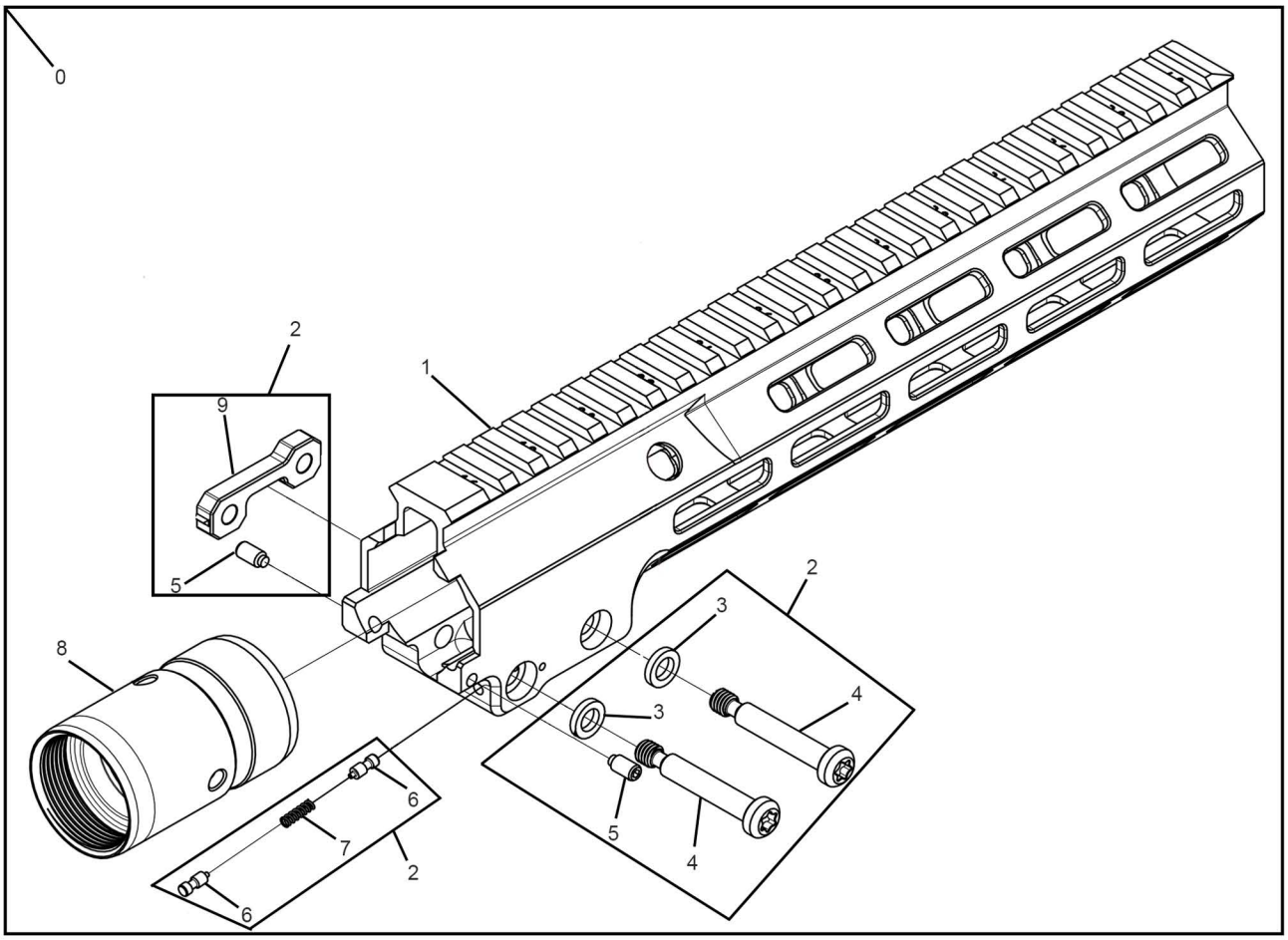


Figure 19. 10.5 M-LOK Handguard.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
	(A) ARMY					
					GROUP 3401	
					FIG. 19 10.5 M-LOK HANDGUARD.	
0	PAFFZ	1005-01-685-0051	43VN9	05-1073	ADAPTER RAIL, WEAPON MOUNTED (10.5IN M-LOK HANDGUARD).	1
1	XAFZZ	N/A	43VN9	02-1539	. HANDGUARD, MARK 16 X 10.5 INCH	1
2	PAFFZ	5325-01-683-2087	43VN9	05-1135	. PARTS KIT FASTENER (URG-I HANDGUARD FASTENER KIT).	1
3	XAFZZ	N/A	43VN9	02-323	. M6 SCREW WASHER	2
4	XAFZZ	N/A	43VN9	02-1013	. RAIL MOUNTING BOLT	2
5	PAFZZ	5305-01-672-4796	43VN9	06-102	. #8-32 X 5/16 OVAL POINT SHSS (HANDGUARD ALIGNMENT SCREWS).	2
6	XAFZZ	N/A	43VN9	02-860	. BOLT RETAINER PLUNGER	2
7	XAFZZ	N/A	43VN9	04-283	. BOLT RETAINER SPRING	1
8	PAFZZ	5310-01-672-4806	43VN9	02-502	. NUT, PLAIN, BARREL (URG-I BARREL NUT)	1
9	XAFZZ	N/A	43VN9	02-810	. PRESS NUT, M6X 1, 2 HOLE	1
					END OF FIGURE	

FIELD

SPECIAL TOOLS AND GAUGES LIST



Figure 20. Special Tools and Gauges List.

(1) ITEM NO.	(2) SMR CODE (A) ARMY	(B) AIR FORCE	(C) USMC	(D) NAVY	(3) NSN	(4) CAGEC	(5) PN	(6) DESCRIPTION AND UOC	(7) QTY
								GROUP SPECIAL TOOLS FIG. 20 SPECIAL TOOLS AND GAUGES LIST.	
1	PAFZZ	PAFZZ	PAOZZ	PAOZZ	4933-01-035-5607	19204	12006359	CASE, BORE GAUGE	1
2	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5220-01-075-5004	19200	12620101	GAUGE, PLUG, PLAIN CYLINDRICAL (FIRING PIN HOLE, NO-GO FIELD SERVICE).	1
3	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5220-01-014-8183	19204	8448496	GAUGE, BARREL EROSION	1
4	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5220-00-070-7814	19204	7799734	FIELD, TYPE, HEADSPACE, GAUGE (FOR USE ON M16 RIFLE)	1
5	PAFZZ	PAFZZ	PAOZZ	PAOZZ	6695-00-070-7815	19204	7799735	GAUGE, FIRING PIN PROTRUSION (MADE OF STAINLESS STEEL; GO IS .036 INCH, NO GO IS .028 INCH)	1
6	XDFZZ	XDFZZ	XDOZZ	XDOZZ	N/A	N/A	080-16-051MB	WRENCH, COMBINATION (M4A1) . .	1
7	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5120-01-581-7445	12238	133-100-015	WRENCH, GAS TUBE	1
8	XDFZZ	XDFZZ	XDOZZ	XDOZZ	N/A	12238	080-000-670WB	M4 BUTTSTOCK WRENCH.	1
9	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5120-01-571-6786	12238	080-000-492	BLOCK, BENCH, MECHANIC'S (ARMORER'S BLOCK).	1
10	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5120-01-619-0886	3E3E2	17-081-01174	CAPS, VISE JAW (GAS BLOCK/GAS TUBE ASSEMBLY BLOCK)	1
11	PAFZZ	PAFZZ	PAOZZ	PAOZZ	4933-00-647-3696	19204	7274758	FIXTURE, MEASURING, TRIGGER .	1
12	XDFZZ	XDFZZ	XDOZZ	XDOZZ	N/A	12238	080-000-662WB	LOWER RECEIVER VISE BLOCK (RECEIVER BLOCK)	1
13	XDFZZ	XDFZZ	XDOZZ	XDOZZ	N/A	3E3E2	16-002-08234-140	WRENCH, BARREL NUT (RIS II). . . .	1
14	XDFZZ	XDFZZ	XDOZZ	XDOZZ	1005-01-642-3071	43VN9	10-169	ROD, REACTION 5.56MM	1
15	XDFZZ	XDFZZ	XDOZZ	XDOZZ	6650-01-641-4938	4X742	HS17-AF-KIT	BORESCOPE	1
16	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5220-00-221-9391	19204	8448202	GAUGE, STRAIGHTNESS, BARREL	1
17	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5120-01-619-0872	3E3E2	17-088-09016	CAPS, VISE JAW (RECEIVER TO RAIL ALIGNMENT FIXTURE	1
18	PAFZZ	PAFZZ	PAOZZ	PAOZZ	5120-01-672-4814	43VN9	02-243	URG-I BARREL NUT WRENCH.	1
19	XAZZZ	XAZZZ	XAZZZ	XAZZZ	N/A	7C9Y9	N/A	FLANGE TOOL.	1
								END OF FIGURE	

FIELD

NATIONAL STOCK NUMBER (NSN) INDEX

STOCK NUMBER	FIG.	ITEM		STOCK NUMBER	FIG.	ITEM
5315-00-017-9537	11	20		5305-00-834-5576	7	2
	13	7		5315-00-840-3812	2	6
5360-00-017-9541	2	14			5	6
	5	14		5315-00-843-9487	12	6
1005-00-017-9546	2	4		1005-00-978-1022	2	13
	5	4			5	13
1005-00-017-9547	2	1		5315-00-978-1023	2	11
	5	1			5	11
1005-00-017-9548	11	13		5360-00-978-1025	2	12
1005-00-017-9551	11	5			5	12
5305-00-034-1229	7	8		5360-00-992-6648	11	4
1005-00-056-2201	11	15		1005-00-992-6649	11	6
5360-00-056-2246	11	11		5315-00-992-6650	11	33
1005-00-056-2247	11	12		5315-00-992-6651	13	4
5315-00-058-6044	8	10		5360-00-992-6652	13	5
	16	2A		5315-00-992-6653	13	10
	18	4		5315-00-992-6654	11	17
5315-00-058-6081	13	9			13	11
5305-00-101-8600	3	2		5360-00-992-6655	11	16
	4	9			13	12
	6	2			13	12
	7	14		1005-00-992-6667	11	31
5305-00-104-2784	3	6		1005-00-992-7283	10	2
	4	4		5305-00-992-7284	10	1
	6	6		1005-00-992-7287	9	1
	7	5		1005-00-992-7288	9	7
5310-00-213-4960	7	6		1005-00-992-7290	9	3
1005-00-403-0964	12	7		1005-00-992-7291	9	6
5310-00-527-3634	11	29		5360-00-992-7292	9	5
5315-00-597-5086	9	4			11	30
5325-00-721-7653	4	5		5315-00-992-7294	2	3
	7	9			5	3
5305-00-724-6794	8	9		1005-00-992-7299	13	8
1005-00-738-6213	10	3		5360-00-992-7301	11	18
5315-00-812-3312	11	14		1005-00-992-7302	11	19
5305-00-834-5576	6	8		1005-00-992-7307	11	26

STOCK NUMBER	FIG.	ITEM		STOCK NUMBER	FIG.	ITEM
5360-00-992-7308	11	25		1005-01-581-7049	13	6
5315-00-992-7309	11	32		5930-01-585-4340	11	9
1005-00-999-0406	11	21		1005-01-597-1170	8	8
5325-00-999-0864	2	10		1005-01-597-2340	3	4
	5	10			6	4
1005-00-999-1509	2	2		1005-01-599-7048	2	9
	5	2			5	9
5310-01-118-6766	3	6		5331-01-609-9769	9	9
	4	3		1005-01-618-8104	11	22
	6	9		1005-01-627-4797	17	0
	7	4		1005-01-627-5406	9	0
1005-01-148-4805	11	27			2	5
1005-01-233-8530	13	3			5	5
1005-01-233-8531	13	1		5365-01-632-3435	2	8
5315-01-233-8608	12	2			5	8
5360-01-233-8616	12	3		1005-01-633-2345	8	6
5360-01-233-8617	11	1		1005-01-633-2349	8	7
5310-01-233-8625	13	2		1005-01-647-7604	1	3
5310-01-233-8626	12	5			5	0
4710-01-233-8637	8	5		1005-01-647-6884	1	2
	18	3			2	0
1005-01-233-8638	12	4		1005-01-671-3911	15	0
5305-01-268-1191	11	28		1005-01-672-4614	14	0
5360-01-396-0256	11	24		1005-01-672-4788	15	5
1005-01-441-1619	2	16			18	6
	5	16		1005-01-672-4790	15	6
	10	0			18	7
1005-01-442-0160	2	15		n/a	17	5
	5	15			19	5
1005-01-459-0734	12	1		1005-01-672-4797	15	1
5305-01-459-5982	12	8		1005-01-672-4803	15	4
1005-01-465-0080	9	2			18	5
1005-01-473-1410	3	5		5310-01-672-4806	15	1A
	6	5			17	8
1005-01-505-1035	9	0			18	1A
1005-01-505-2886	9	8			19	6
1005-01-522-0772	11	2		1005-01-673-4242	11	7
1005-01-547-2624	7	0		1005-01-673-4294	11	34
1005-01-548-1385	4	0			12	0

STOCK NUMBER	FIG.	ITEM		STOCK NUMBER	FIG.	ITEM
1005-01-679-8237	15	2		1005-01-679-8503	16	0
	16	1		5325-01-683-2087	17	2
5315-01-679-8242	16	1A			19	2
	18	2A		1005-01-684-1906	18	0
4710-01-679-8420	15	3		1005-01-685-0050	18	2
	16	2		1005-01-685-0051	18	1
					19	0

END OF WORK PACKAGE

FIELD

PART NUMBER (PN) INDEX

PN	FIG.	ITEM		PN	FIG.	ITEM
01-002-08130-131	4	7		05-243	11	22
	7	12		05-650S	15	1
	8	11			17	0
01-004-0810-103	3	3		05-664S	15	4
	6	3			18	5
01-004-08100-103	4	10		05-1073	18	1
	7	11			19	0
01-004-08102	7	7		05-1135	17	2
01-004-08112-103	3	7		06-102	17	5
	4	6			19	5
	6	7		07-077-07108	18	2
	7	10		07-077-07308	15	2
01-004-08131-011	4	8			16	1
	7	13		15-028-02227	16	1A
	8	2			18	2A
01-004-09157	7	0		15-030-22156	7	3
01-004-16120	4	0		21-010-00010-011	4	1
02-323	17	3			7	1
	19	3		99051	3	5
02-502	15	1A			6	5
	17	8		99329	14	0
	19	8		9349086	2	15
02-810	17	9		8448502	2	4
	19	9			5	3
06-102	17	5		8448503	2	2
	19	6			5	1
02-974	17	1		8448504	2	3
06-102	17	5			5	2
	19	4		8448505	2	16
05-1135	19	2			5	16
02-1539	19	1			10	0
04-013-18034	15	3		8448506	10	2
	16	2		8448507	10	3
	16	2A		8448508	10	1
04-283	19	7		8448510	9	2
	17	5		8448511	9	1

PN	FIG.	ITEM		PN	FIG.	ITEM
8448512	9	7		8448637	11	18
8448513	9	3		8448652	12	7
8448515	9	6		8448638	11	15
8448516	9	5		9349086	2	15
	11	30			5	15
8448517	2	5		9349127	11	27
	5	4		9390014	12	4
8448525	2	13		9390016	8	5
	5	13			18	4
8448532	2	12		9390019	13	1
	5	12		9390020	13	2
8448533	2	11		9390021	13	3
	5	11		9390022	11	1
8448540	2	14		9390025	12	2
	5	14		9390026	12	5
8448582	13	4		9390027	12	3
8448583	13	5		12012081	12	1
8448584	13	10		12012082	11	34
8448585	11	17			12	0
	13	11		12012083	12	8
8448586	11	16		12972652	13	6
	13	12		12972690	1	1
8448587	13	8			11	0
8448592	11	26			13	0
8448593	11	25		12972695	11	24
8448595	11	6		12972698	11	23
8448599	11	33		13004468	11	2
8448609	11	32		13004786	9	8
8448610	11	3		13027936	11	8
8448611	11	4		13027937	11	9
8448612	11	5		13036743	11	10
8448621	11	20		13054561	8	7
	13	7		13054562	8	6
8448628	11	13		13060592	11	7
8448631	11	31		100632701	9	9
8448633	11	11		43VN9	18	1A
8448634	11	12		408JXN00024	8	8
8448635	11	21		408JXN00555-1	8	0
8448636	11	19		408JXN00555-2	8	0

PN	FIG.	ITEM		PN	FIG.	ITEM
408JXN00553-7	1	2		GS21-206R10X3-8	3	8
408JXN00553-7	2	0			4	2
408JXN00553-8	5	0			6	8
408JXN00554-1	2	7			7	2
	3	0		MAG582-BLK	15	5
408JXN00554-2	5	7			18	6
	6	0		MAG606-BLK	15	6
408JXN00554-3	2	7			18	7
	3	0		MS16562-98	9	4
408JXN00554-4	5	7		MS16562-106	8	10
	6	0			18	3
408JXN00588-1	8	3		MS16562-119	11	14
408JXN00588-2	8	4		MS16562-121	2	6
408JXN00638	9	0			5	6
408JXN00696	8	1		MS16562-129	13	9
408JXN00555-1	3	1		MS16562-202	12	6
408JXN00555-2	6	1		MS16632-3012	2	10
408JXN00555-3	3	1			5	10
	8	0		MS21209F1-20	7	9
408JXN00555-4	6	1		MS21295-43	3	6
	8	0			4	4
408JXN00638	2	6			6	6
	5	5			7	5
408JXN00879	15	0		MS21295-49	3	2
408JXN00906	16	0			4	9
408JXN00953	18	0			6	2
90262A011	3	9			7	14
	4	3		MS51859-4	7	6
	6	9		MS51964-48	8	9
	7	4		MS212906F1-20	4	5
1611203PC101	7	8		MS35335-61	11	29
AN501D41618	11	28		SP64027	9	0
CQD-FEM	3	4		Z-70031	2	8
CQD-FEM	6	4			5	8
FH556RC-1/2-28	2	9				
	5	9				

END OF WORK PACKAGE

CHAPTER 7

SUPPORTING INFORMATION

FIELD

REFERENCES

SCOPE

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

COMMON TABLE OF ALLOWANCES (CTA)

CTA 50-970	Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heralic Items)

DEPARTMENT OF DEFENSE (DOD) DIRECTIVES

DOD 4160-21-M-1	Defense Demilitarization Manual
DOD Directive 5230.25	Withholding of Unclassified Technical Data from Public Disclosure
DOD 5220.22-M	National Industrial Security Program Operating Manual
DOD M5200.01	Information Security Program

FIELD MANUALS

NTRP 4-02.1	Navy Publication, First Aid

FORMS

SF 368	Standard Form 368 Product Quality Deficiency Report (PQDR)
NAVSEA 4160/1	NAVSEA/SPAWAR Technical Manual Deficiency/Evaluation Report (TMDER)

INSTRUCTIONS

NAVSEAINST 4790 Series	Maintenance and Material Management (3M) Manual

MILITARY STANDARD

MIL-STD-129R	Military Marking for Shipment & Storage

PUBLIC LAW

Public Law 90-629	Arms Export Control Act

TECHNICAL MANUALS

TM 9-1005-319-10	Operator's Manual, Carbine, 5.56mm, M4A1
TM 750-244-7	Procedure for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090, and 1095, to Prevent Enemy Use

END OF WORK PACKAGE

FIELD

EXPENDABLE AND DURABLE ITEMS LIST

EXPENDABLE AND DURABLE ITEMS LIST INTRODUCTION

Scope

This Work Package (WP) lists expendable and durable items that you will need to operate and/or maintain the Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG). 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-50909, Field and Garrison Furnishings and Equipment, or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

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

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (include as applicable: C = Crew, O = Unit or AMC, F = Maintainer or ASB, H = Below Depot or TASMG, D = Depot).

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

Column (4) Item Name, Description, PN/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the Part Number (PN) 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/Durable Items List.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) ITEM NAME, DESCRIPTION, PN/(CAGEC)	(5) U/I
1	O	6810-00-753-4780	ACETONE (DEGREASER) BPA-18-500/(4PF011)	BT
2	O	80200-00-244-0153	BRUSH, ARTIST, METAL FURRULE, FLAT CHISEL EDGE 7/16 W, 1-1/8 EXPOSED BRISTLE H-B-241/(81348)	EA
3	O	1005-00-903-1296	BRUSH, CLEANING, SMALL ARMS, BORE 1168634/(19204)	EA
4	O	1005-00-999-1435	BRUSH, CLEANING, SMALL ARMS, CHAMBER 8432358/(19204)	EA
5	O	1005-00-494-6602	BRUSH, CLEANING, SMALL ARMS, TOOTH 8448462/(19204)	EA
6	O	7920-00-205-2401	BRUSH, CLEANING, TOOLS AND PARTS MIL-S-43871/(81349)	EA
7	O		BRUSH, NYLON UT221/(6BKW2)	EA

Table 1. Expendable/Durable Items List.-Continued.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) ITEM NAME, DESCRIPTION, PN/(CAGEC)	(5) U/I
8	O	7920-00-269-1259	BRUSH, WIRE, SCRATCH 20010/(76861)	EA
9	O	9150-01-079-6124	CLEANER, LUBRICANT AND PRESERVATIVE CLP-4/(65983)	BT
10	O	9150-01-054-6453	CLEANER, LUBRICANT AND PRESERVATIVE CLP-5/(65983)	PT
11	O	9150-01-053-6688	CLEANER, LUBRICANT AND PRESERVATIVE CLP-7/(65983)	GL
12	C	9150-01-102-1473	CLEANER, LUBRICANT AND PRESERVATIVE CLP-NC/(65983)	BT
13	C	9920-00-292-9946	CLEANER, TOBACCO PIPE, DILLS (89855)	BX
14	C	6850-00-224-6656	CLEANING COMPOUND, RIFLE BORE MIL-C-372/(81349)	BT
15	O	5350-00-221-0872	CLOTH, ABRASIVE S9X11CROCUS/(1DTVO)	SH
16	C	1305-00-764-8437	DUMMY CARTRIDGE, 5.56MM 10534021/(19200)	EA
17	O	8415-01-558-6393	GLOVE, HEAT PROTECTIVE 70164-XL/(096Y0)	PR
18	O	8415-00-823-7460	GLOVES, RUBBER, INDUSTRIAL ZZ-G-381/(81348)	PR
19	O	4240-01-504-7863	GOGGLES S3690C/(39SU9)	PR
20	F	9150-00-935-4018	GREASE, MOLYBDENUM DISULFIDE MIL-G-21164 12702546/(19200)	LB
21	C	9150-00-292-9689	LUBRICATING OIL, WEAPONS MIL-L-14107/(81349)	QT
22	C	9150-00-935-6597	LUBRICATING OIL, WEAPONS, SEMI-FLUID, 2 OZ (59.15 ML) PLASTIC BOTTLE MIL-L-46000/(/81349)	OZ
23	C	9150-00-889-3522	LUBRICATING OIL, WEAPONS, SEMI-FLUID, 4 OZ (118.30 ML) PLASTIC BOTTLE MIL-L-46000/(81349)	OZ
24	O	9150-00-687-4241	LUBRICATING OIL, WEAPONS, SEMI-FLUID 1 QT (0.95 L) CAN MIL-L-46000/(81349)	CN
25	O	9150-00-753-4686	LUBRICATING OIL, WEAPONS, SEMI-FLUID, 1 GAL (3.79 L0 CAN MIL-46000/(81349)	CN
26	O	6850-00-826-0981	PENETRANT KIT MIL-I-25135/(81349)	KT

Table 1. Expendable/Durable Items List.-Continued.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) ITEM NAME, DESCRIPTION, PN/(CAGEC)	(5) U/I
27	C	7920-00-205-1711	RAG, WIPING 50 LB (22.68) BUNDLE A-A-531/(58536)	LB
28	C	8040-01-539-1158	ROCKSETT ADHESIVE 15014/(2R260)	BT
29	O	8030-01-132-9624	SEALING COMPOUND (THREAD-LOCK BLUE 243) 1329837/(05972)	BT
30	C	1005-00-912-4248	SWAB, SMALL ARMS 11686408/(19204)	SH

END OF WORK PACKAGE

FIELD

TOOL IDENTIFICATION LIST

TOOL IDENTIFICATION LIST INTRODUCTION

Scope

This Work Package (WP) lists all common tools and special tools, supplements, and fixtures needed to maintain Carbine, 5.56mm, M4A1 with Upper Receiver Group (URG).

Explanation of Columns in the Tool Identification List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Extractor [WP 0098, Item 5]).

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

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

Column (4) PN/(CAGEC). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) Reference. This column identifies the authorizing supply catalog or Repair Parts and Special Tools Lists (RPSTL) for items listed in this WP.

Table 1. Tool Identification List.

(1) ITEM NO.	(2) ITEM NAME	(3) NSN	(4) PN/(CAGEC)	(5) REFERENCE
1	Hammer, Hand	5120-01-434-9537	69-404/ (636D0)	N/A
2	Hammer, Hand (Hammer, Ball Peen)	5120-00-061-8540	4504/(049W4)	N/A
3	Hammer, Nylon/Brass, 1-inch (Armorer's Hammer)	N/A	818-600-100WB/ (55719)	N/A
4	Handle Section, Cleaning Rod, Small Arms	1005-01-113-0321	8436776/ (19204)	N/A
5	Heat Gun, Electric	4940-00-169-7831	HG-751B/ (83284)	N/A
6	Hex Wrench Set (Contains Hex Keys Size 0.050, 1/16-, 5/64-, 3/32-, 7/64-, 1/8-, 9/64-, 5/32-, 3/16-, 7/32-, 1/4-, 5/16-, and 3/8-inch)	5120-01-473-9592	EKL13213/ (00NS2)	
7	Key Set, Socket Head Screw Sizes include: 1/2, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, and 5/16-inch	5120-01-004-2718	10936/(31734)	N/A

Table 1. Tool Identification List.-Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NSN	(4) PN/(CAGEC)	(5) REFERENCE
8	Needlenose Pliers	4920-01-507-5464	36-0128/ (53573)	N/A
9	Propane Torch	5120-01-604-5227	FRS UL125/ (55719)	N/A
10	Punch Set, Drive Pin, Sizes include: 1/16, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4, 5/16, and 3/8-inch	5120-00-883-3003	213/(688L6)	N/A
11	Ratchet Head, Socket Wrench Handle (Ratchet, 1/2-inch Drive)	5120-01-581-2616	QXD16A/ (19204)	N/A
12	Rod Section, Cleaning, Small Arms (Cleaning Rod Section)	1005-00-050-6357	8436775/ (19204)	N/A
13	Roll Pin Holders Set (1S [1/16-inch], 2S [5/64-inch], 3S [3/32-inch, 3.5-mm, 4S [1/8-inch])	N/A	080-685-000WB/ (12238)	N/A
154	Ruler, Metallic (6-inch)	7510-01-535-2323	CF645/ (9A902)	N/A
15	Screwdriver Attachment Set, Socket Wrench (10 Piece Torx Bit Set, 1/2-inch Drive; Size T-10, T-15, T-20, T-25, T-27, T-30; 3/8-inch Drive; Size T-40, T-45, T-47. T-50)	5120-01-178-6342	J-29843/ (33287)	
16	Screwdriver Attachment, Socket Wrench (3/32-inch Hex Head Socket [1/4-inch drive])	5120-01-399-9763	J47703/32/ (1CV05)	N/A
17	Screwdriver, Flat-Tip, 5/16-inch	5120-01-630-3069	5120-00-NIB-0074/(83421)	N/A
18	Screwdriver Set, Jeweler's, Swivel Knob (Jeweler's Screwdriver Set)	5120-00-288-8739	58-0116/ (89750)	N/A
19	Scriber, Machinist's (Scribe)	5120-00-221-7063	MS15793-1/ (96906)	N/A
20	Swab Holder Section, Cleaning Rod, Small Arms	1005-00-937-2250	11686327/ (19204)	N/A
21	Vise, Bench, Clamp Base	5120-00-221-1119	33150/ (2WDM5)	N/A
22	Wrench Set, Combination Box and Open End (Contains 1 ea Chrome Plated; 12 Point: Fractional Sizes 1/4-, 5/16-, 11/32-, 3/8-, 7/16-, 1/2-, 9/16-, 5/8-, 11/16-, and 3/4-inch	5120-01-495-7712	8107.100/ (05047)	N/A
23	Wrench, Torque (30-150 in-lb, 1/4-inch drive	5120-00-001-3733	AS28431/ (0U583)	N/A
24	Wrench, Torque, 1/2-inch, 20-150 ft•lb	5120-01-351-2048	AS28431/ (0U583)	N/A

END OF WORK PACKAGE-

FIELD

MANDATORY REPLACEMENT PARTS

MANDATORY REPLACEMENT PARTS LIST

This Work Package (WP) includes a list of all the mandatory replacement parts referenced in the task initial setups and procedures including those referenced in Preventive Maintenance Checks and Services (PMCS). These are items that must be replaced during maintenance whether they have failed or not. This includes items based on usage intervals such as miles, times, rounds fired, etc.

Explanation of Columns in the Mandatory Replacement Parts

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 O-ring [WP 0098, Item 5]).

Column (2) PN/(CAGEC). Indicates the Part Number (PN) and Commercial and Government Entity Code (CAGEC) of the item to be used for requisitioning purposes.

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

Column (4) Nomenclature. This column lists the item by noun nomenclature and other descriptive features (e.g., Gauge, Belt Action).

Column (5). Qty. Indicates the quantity required.

Table 1. Mandatory Replacement Parts.

(1) ITEM NO.	(2) PN/CAGEC	(3) NSN	(4) NOMENCLATURE	(5) QTY
1	MS16562-121/(80205)	5315-00-840-3812	Pin, Spring (Forward Assist Spring Pin)	1
2	MS16562-106/(80205)	5315-00-058-6044	Pin, Spring (Gas Tube Spring Pin)	1
3	MS16632-3012/ (96906)	5325-00-999-0864	Ring, Retaining Cover (Ejection Port Rod Retaining Clip)	1
4	Z-70031/(0BJZ8)	5365-01-632-3435	Shim Set (FMBS-C Shim Set W/ Spacer)	1
5	MS35335-61/(80205)	310-00-527-3634	Washer, Lock (Rifle Grip Lock Washer)	1

END OF WORK PACKAGE

PRODUCT QUALITY DEFICIENCY REPORT (PQDR)

CATEGORY ☐ I ☐ II	REPORT CONTROL NUMBER (RCN)	DATE

1a. FROM *(Original Office Mailing Address - include DoDAAC)*	1b. ORIGINATOR NAME, PHONE NUMBER & E-MAIL ADDRESS
2a. TO *(PQDR Screening Point)*	2b. SCREENING POINT NAME, TELEPHONE NUMBER & E-MAIL ADDRESS

3. DESCRIPTION OF DEFICIENCY (*Describe in detail what is wrong, circumstances prior to the difficulty, probable cause, any action taken, and recommendations. Attach copy of supporting documents. Continue on separate sheet if necessary. Ensure that the description answers the questions listed in the instructions on the back of this form.)*	4. DATE DEFICIENCY WAS DISCOVERED

5. DEFICIENT ITEM NATIONAL STOCK NUMBER (NSN)	6. DEFICIENT ITEM NOMENCLATURE	7. OPERATING TIME AT FAILURE ☐ Initial Hours: Days: Rounds: Cycles: Miles: Other:

8. DEFICIENT ITEM PART NUMBER	9a. MANUFACTURER'S CAGE CODE	9b. MANUFACTURER / CITY / STATE

10. QUANTITY	11. SERIAL, LOT, OR BATCH NUMBER	12a. ITEM	12b. DATE MANUFACTURED, REPAIRED, OR OVERHAULED	12c. LAST REPAIR FACILITY
a. RECEIVED: b. INSPECTED: c. DEFICIENT: d. IN STOCK:	SERIAL #: Unknown ☐ LOT #: BATCH #: N/A ☐	☐ New ☐ Repaired ☐ Overhauled ☐ Unknown	Manufactured: Repaired: Overhauled:	CAGE: DODAAC: REPAIR DEPOT / CITY / STATE

13a. CONTRACT NUMBER	13b. REQUISITION / DOCUMENT NUMBER	13c. PURCHASE ORDER NUMBER

14. GOVERNMENT FURNISHED MATERIAL	15a. ITEM UNDER WARRANTY	15b. WARRANTY EXPIRATION DATE	16. END ITEM EIC/WUC/TAMCN
☐ YES ☐ NO ☐ UNKNOWN	☐ YES ☐ NO ☐ UNKNOWN		

17. NEXT HIGHER ASSEMBLY

a. NSN	b. NOMENCLATURE	c. PART NUMBER	d. SERIAL NUMBER

18. END ITEM

a. NSN	b. NOMENCLATURE	c. TYPE/MODEL	d. SERIAL NUMBER

19. CURRENT DISPOSITION OF DEFICIENT ITEM (the Exhibit) *(Select only one value)*

☐ HOLDING EXHIBIT ☐ DISPOSED OF / DESTROYED ☐ REPAIRED ☐ OTHER *(Explain in Block 3)*

20. LOCATION OF DEFICIENT MATERIAL (e.g. Base, Camp, Station)

21. ACTION REQUESTED *(Select only one value)* ☐ REPLACEMENT ☐ REPAIR ☐ CREDIT ☐ OTHER *(Explain in Block 3)*

INSTRUCTIONS

CATEGORY - A Category I PQDR is described as an item that could cause loss of life or catastrophic failure of a major weapon system. Category II PQDRs are all those which are not Category I. Category I justification shall be provided in Description of Deficiency, Block 3.

REPORT CONTROL NUMBER (RCN) - Unique number assigned to identify the PQDR. It is comprised of the six position originating activity DODAAC, a two digit calendar year, and a unique four position serial number, e.g. M12000-10-0001.

DATE - The date the SF368 is filled out.

1a. FROM (Originating Office Mailing Address) - Complete name of activity (no acronyms when sending deficiency report across component lines), activity address code (AAC) mailing address including zip code of the activity originating the report and current location of the activity.

1b. ORIGINATOR NAME, PHONE NUMBER & E-MAIL ADDRESS - Provide name, telephone number (including all available telephone numbers; FTS; Autovon, and commercial) and e-mail address of an individual who can serve as a contact for questions regarding the report and/or to request exhibits or samples. For units that are deployed, please state deployed.

2a. TO (PQDR Screening Point) - The originating point will complete the name of the screening point activity (no acronyms) activity address code (AAC) mailing address including zip code of the screening point where the report needs to be sent by the originator's activity. For those activities that do not have screening points, leave blank.

2b. SCREENING POINT NAME, TELEPHONE NUMBER AND E-MAIL ADDRESS - If available, provide the name, telephone number, and e-mail address of the screening point individual.

3. DESCRIPTION OF DEFICIENCY - A comprehensive description of the deficiency to include circumstances prior to the failure. Explain, to the best of your ability, what is wrong with the item. Explain how the item does not function with relating parts or assemblies. Include specific drawings, specifications, regulations, instructions, or contracts. If an item is dimensionally incorrect, list the actual dimensions as well as the source of the correct dimensions (tech manual/drawing or comparative measurement of the old item). As best as you can, also include the following:

- Condition of packaging when received.
- Condition of part when removed from packaging.
- Was defect discovered prior to or after installation?
- How was deficiency discovered?
- How was deficiency confirmed?
- Were there any ID markings or stamps on deficient item?
- Were serviceable tags attached or available when item was received?
- Are pictures of the defective item available?
- Describe or identify any tests or procedures used during installation and/or testing.
- Identify (by RCN) any previous related (by NSN or defect) PQDRs that you know of or have submitted.

4. DATE DEFICIENCY WAS DISCOVERED - Date when the deficiency occurred or was discovered.

5. DEFICIENT ITEM NATIONAL STOCK NUMBER (NSN) - The National Stock Number consists of the four digit Federal Supply Classification (FSC) and nine digit National Item Identification Number (NIIN). The FSC identifies the general stock classification (9999 is MISCELLANEOUS ITEM). The FSC can be found in the Indexes Cataloging Handbook H2. It can also be found on this web site, **http://www.dlis.dla.mil/h2**. The NSN can often be found on the attached paperwork (DD250 or 1348 form), the product packaging, and in some cases on the item itself (example on manufacturer label or nameplate). Examples: (4730-00-013-0987), (4730-000130987)
COG & SMIC - Where applicable, the two character Cognizance Code (COG) and two character Special Material Identification Code (SMIC) shall be reported. The COG code identifies the Item Manager (ex: 7H, 9C). The SMIC identifies material under special programs or applications (ex: L1, X3)."

6. DEFICIENT ITEM NOMENCLATURE - The name of the deficient item at its lowest identifiable level.

7. OPERATING TIME AT FAILURE - Time item had been in operation since new, overhauled, or repaired when the deficiency was discovered citing the appropriate performance element (miles, cycles, hours etc.). Enter "Initial" if the deficiency occurred with no operation time since new, overhauled, or repaired.

8. DEFICIENT ITEM PART NUMBER - The manufacturer's part number of the deficient item. This number may be found on the item or package markings.

9a. MANUFACTURER'S CAGE CODE - A five digit Contract and Government Entity (CAGE) Code of the manufacturer (of the deficient item) as listed in the DLA Cataloging Handbook H4.1 (Name to code), Federal Supply Code for manufacturer (United States and Canada). The CAGE Code may be taken from the markings on the deficient item.

NOTE: If the deficient item was repaired or overhauled, the CAGE or DODAAC of the last repair/ overhaul facility shall be entered in Block 12c.

9b. MANUFACTURER / CITY / STATE - Name and address of the manufacturer which manufactured, repaired or overhauled the deficient item. For motor vehicles or components thereof, enter name of manufacturer of the vehicle or component, as appropriate.

10. QUANTITY:

a. RECEIVED - Enter the total number of items or parts received.
b. INSPECTED - Enter the total number of items inspected.
c. DEFICIENT - Enter the quantity found deficient of those inspected.

10. QUANTITY: continued

d. IN STOCK - Enter the quantity of additional material from the same manufacturer and contract remaining in stock.

11. SERIAL / LOT / BATCH NUMBER - Enter the manufacturer's serial, lot, or batch number of the deficient items as applicable. If any of these are unknown or don't apply, check the respective boxes for Unknown or N/A. If multiple numbers are reported, provide additional numbers in Description of Deficiency, Block 3.

12a. ITEM - Check the appropriate block to indicate whether the deficient item is New, Repaired, or Overhauled. Provide the dates manufactured, repaired, or overhauled in Block 12b, if available.

12b. DATE MANUFACTURED, REPAIRED, OR OVERHAULED - Enter the date the deficient item was manufactured if New item was selected in 12a, and the date repaired or overhauled if so selected in 12a.

12c. LAST REPAIR FACILITY - If the deficient item was repaired or overhauled, enter the CAGE or DODAAC, name, and address of the Repair Facility which last repaired or overhauled the deficient item.

13a. CONTRACT NUMBER - This is the identification number of the contract under which the deficient item/commodity was purchased or reworked. The number is comprised of Contract activity's Department of Defense Activity Address Code 6 position (DODAAC) example (N00024), seven position Contract Serial example (99C0001) Number, and 4 digit Contract Order Number example (0001). The contract number can often be found on the attached paperwork (DD250 or 1348 form), the product packaging, and in some cases on the item itself (example on manufacturer label or name plate). Examples (SP070098C0009), (N0010498C0008).

13b. REQUISITION / DOCUMENT NUMBER - The original MILSTRIP document number used to order the item. It is a unique reference number assigned to a requisition/release/receipt document in order to identify the transaction throughout the logistics system. It consists of a 14 digit code that most often can be found with the deficient material paperwork or product packaging (e.g. 1348 form). It is most often made up of a 6 digit DODAAC, a single digit year, 3 digit Julian calendar date and a 4 digit serial number (e.g. N4511202334567). This information is key to getting the activity refunds/credits.

13c. PURCHASE ORDER NUMBER - The Purchase Order Number associated with the defective part. This can usually be found on the attached shipping document.

14. GOVERNMENT FURNISHED MATERIAL - Choose either YES, NO, or UNKNOWN. Only select "YES" if the deficient material was furnished by the Government to a Contractor for production purposes.

15a. ITEM UNDER WARRANTY - Choose either YES, NO, or UNKNOWN to indicate whether the deficient item is covered by an established or formal warranty. If yes, provide the warranty expiration date in Block 15b.

15b. WARRANTY EXPIRATION DATE - Provide the date the warranty is set to expire.

16. END ITEM EIC / WUC / TAMCN - Enter the applicable Equipment Item Code (EIC), Work Unit Code (WUC), or Table of Authorized Material Control Number (TAMCN) for the deficient material.

17. NEXT HIGHER ASSEMBLY (NHA) - If the deficient item is a part of another assembly before it is used or installed on the end item, enter all available information for that NHA.

a. NSN - National Stock Number associated with the next higher assembly.
b. NOMENCLATURE - Item name of the next higher assembly.
c. PART NUMBER - Part number assigned to the next higher assembly.
d. SERIAL NUMBER - Serial number of the next higher assembly.

18. END ITEM - Enter all available information for the principal end item, major weapon system, or commodity that the deficient item is used with or on (i.e. weapon system, vehicle, radio set, etc.).

a. NSN - National Stock Number associated with the end item.
b. NOMENCLATURE - Name of the end item.
c. TYPE/MODEL - Type or model assigned to the end item configuration.
d. SERIAL NUMBER - Serial number from the end item equipment or system. Multiple serial numbers may be listed in Description of Deficiency, Block 3.

19. CURRENT DISPOSITION OF DEFICIENT ITEM (the Exhibit) (Select only one value) - Check the appropriate block to indicate the status of the deficient material (the exhibit(s)) at the time the PQDR is submitted. Reporting activities are reminded that exhibits will be held by the Originating Point until disposition instructions are received from an appropriate Screening or Action Point. If shipping or disposition instructions have not been received by 30 days, a follow-up must be initiated with the appropriate Screening or Action Point. Any packaging, packing and shipping containers are to be held along with the exhibits to facilitate investigation. When disposition is other than the listed items, check "OTHER" and identify the nature of the disposition in the Description of Deficiency, Block 3.

20. LOCATION OF DEFICIENT MATERIAL (e.g. Base, Camp, Station, Supply Activity) - Enter the name and location or supply activity that is currently holding the exhibit/deficient material.

21. ACTION REQUESTED (Select only one value) - Check the appropriate block to indicate the action you, the Originator, have already taken or are requesting. If none of the items indicate the actions taken or requested, check "OTHER" and identify the nature of the action taken or requested in the Description of Deficiency, Block 3.

Ref: NAVSEAINST 4160.3 NAVSEA S0005-AA-PRO-010/TMMP

NAVSEA/SPAWAR TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER)

INSTRUCTIONS: Continue on 8 ½" x 11" page if additional space is needed.
1. Use this report to indicate deficiencies, problems and recommendations relating to publications.
2. For **NOFORN** TMDERs mailing requirements, see OPNAVINST N9210.3.
3. For **CLASSIFIED** TMDERs mailing requirements, see SECNAV M-5510.36.
4. For TMDERs that affect more than one publication, submit a separate TMDER for each.
5. Submit TMDERs at web site https://nsdsa.dc3n.navy.mil or mail to: **COMMANDING OFFICER, CODE 310 TMDERs, NAVSURFWARCENDIV NSDSA, 4363 MISSILE WAY BLDG 1389, PORT HUENEME CA 93043-4307**

CLASSIFICATION

1. PUBLICATION NUMBER	2. VOL/PART	3. REV/DATE OR CHG/DATE	4. SYSTEM/EQUIPMENT ID

5. TITLE OF PUBLICATION	6. REPORT CONTROL NUMBER (6 digit UIC-YY-any four: xxxxxx-10-xxxx)

7. RECOMMEND CHANGES TO PUBLICATION

7a. Page #	7b. Para #	7c. RECOMMENDED CHANGES AND REASONS

8. ORIGINATOR'S NAME AND WORK CENTER	9. DATE	10. ORIGINATOR'S E-MAIL ADDRESS	11. TMMA of Manual (NSDSA will complete)

12. SHIP OR ACTIVITY Name and Address (Include UIC/CAGE/HULL)	13. Phone Numbers:
	Commercial (___) ___-_____ DSN ___-_____ FAX (___) ___-_____

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APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY	TO CHANGE	TO	MULTIPLY BY
inches	centimeters (cm)	2.540	centimeters (cm)	inches	0.394
feet (ft)	meters (m)	0.305	meters (m)	feet (ft)	3.280
yards (yd)	meters (m)	0.914	meters (m)	yards (yd)	1.094
miles	kilometers (km)	1.609	kilometers (km)	miles	0.621
sq inches (in^2)	sq centimeters (cm)	6.451	sq centimeters (cm^2)	sq inches (in^2)	0.155
sq feet (ft^2)	sq meters (m^2)	0.093	sq meters (m^2)	sq feet (ft^2)	10.764
sq yards (yd^2)	sq meters (m^2)	0.836	sq meters (m^2)	sq yards (yd^2)	1.196
sq miles (mi^2)	sq kilometers (km^2)	2.590	sq kilometers (km^2)	sq miles (mi^2)	0.386
cu feet (cu ft)	cu meters (cu m)	0.028	cu meters (cu m)	cu feet (cu ft)	35.315
cu yards (cu yd)	cu meters (cu m)	0.765	cu meters (cu m)	cu yards (cu yd)	1.308
fluid ounces (fl oz)	millimeters (mL)	29.573	millimeters (mm)	fluid ounces (fl oz)	0.034
pints (pt)	liters (L)	0.473	liters (L)	pints (pt)	2.113
quarts (qt)	liters (L)	0.946	liters (L)	quarts (qt)	1.057
gallons (gal)	liters (L)	3.785	liters (L)	gallons (gal)	0.264
ounces (oz)	grams (g)	28.349	grams (g)	ounces (oz)	0.035
pounds (lb)	kilograms (kg)	0.454	kilograms (kg)	pounds (lb)	2.205
short tons	metric tons	0.907	metric tons	short tons	1.102
pound-feet (ft•lb)	newton•meters (N•m)	1.356	newton•meters (N•m)	pound-feet (lb-ft)	0.738
pounds-inches (lb/in)	newton•meters (N•m)	0.113	newton•meters (N•m)	pounds-inches (lb/in)	8.8508
ounce-inches (oz/in)	newton•meters (N•m)	0.007062	newton•meters (N•m)	ounce-inches (oz/in)	141.612
feet-pounds (ft•lb)	newton•meters (N•m)	1.356	newton•meters (N•m)	feet-pounds (ft•lb)	0.738
inch-pounds (in-lb)	newton•meters (N•m)	0.113	newton•meters (N•m)	inch-pounds (in-lb)	8.8508
pounds per square inch (psi)	kilopascals (kPa)	6.895	kilopascals (kPa)	pounds per square inch (psi)	0.145
bars	kilopascals (kPa)	100	kilopascals (kPa)	bars	0.01
bars	pounds per square inch (psi)	14.67	pounds per square inch (psi)	bars	0.06895
miles per gallon (mpg)	kilometers per liter (km/L)	0.425	kilometers per liter (km/L)	miles per gallon (mpg)	2.352
miles per hour (mph)	kilometers per hour (km/h)	1.609	kilometers per hour (km/h)	miles per hour (mph)	0.621
°Fahrenheit (ºF)	°Celsius (ºC)	5/9 (ºF - 32°)	°Celsius (ºC)	°Fahrenheit (ºF)	9/5 (ºC+ 32°)
°Fahrenheit (ºF)	Kelvin (K)	5/9 (ºF - 32°) + 273	Kelvin (K)	°Fahrenheit (ºF)	9/5 (K - 273) + 32
°Celsius (ºC)	Kelvin (K)	ºC + 273	Kelvin (K)	°Celsius (ºC)	K - 273