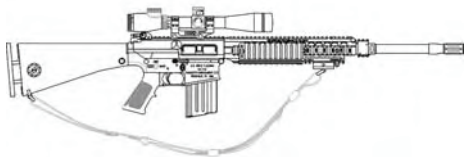
TM 9-1005-342-10

TECHNICAL MANUAL
OPERATOR'S MANUAL FOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM,
(NSN 1005-01-534-2841)



HEADQUARTERS, DEPARTMENT OF THE ARMY
OCTOBER 2007

WARNING SUMMARY

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

FIRST AID

Refer to FM 4-25.11 for First Aid information

EXPLANATION OF SAFETY WARNING ICONS

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

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

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

EXPLANATION OF SAFETY WARNING ICONS – Continued

EAR PROTECTION - Headphones over ears shows that noise level will harm ears.

GENERAL SAFETY WARNINGS DESCRIPTION

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Before starting an inspection, be sure weapon is clear. Ensure that NO AMMUNITION is present in the weapon by clearing the weapon using the field strip procedures in TM 9-1005-342-10, WP 0013 00. DO NOT squeeze the trigger until the weapon has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. DO NOT keep live ammunition near work area.

DO NOT store the weapon with live ammunition in either the chamber or the magazine.

Under no circumstances should the weapon be shipped while it contains live ammunition; either in the shipping box, magazine, chamber, or in the weapon itself.

Ensure the safety is in the "safe" position and that the chamber is clear of any obstruction.

Never try to force a cartridge into the chamber. If the bolt does not fully close, clear any obstructions until a round is successfully chambered. Never attempt to fire a round if the bolt does not fully close.

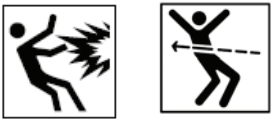
To be considered SAFE before disassembly, cleaning, inspecting, transporting, or storing, the weapon must be cleared.

Always clear your weapon. Always assume there is a live round in your weapon. Keep rifle pointed in a safe direction.

The sound suppressor is not designed to be used "wet". Under no circumstances should it be filled with grease or any other substance before use. The use of any substance could alter the path of the projectile and/or foul the gas system and moving parts of the rifle.

GENERAL SAFETY WARNINGS DESCRIPTION – Continued

WARNING



EXPLOSION AND ACCIDENTIAL DISCHARGE

Never mix lubricants on the weapon, always completely remove one lubricant before using another. Mixing lubricants can cause viscosity change, resulting in weapon damage or malfunction, which can cause injury.

Ensure that the weapon is unloaded and the chamber is clear. Be sure there are no obstructions in the bore. Place weapon on SAFE before performing field stripping and maintenance procedures.

Cam pin must be installed in bolt assembly; if not, rifle can still fire and will explode.

Never lubricate the sound suppressor body.

Before starting functional check, be sure to clear the weapon. DO NOT squeeze the trigger until the weapon has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered.

DO NOT fire corroded or dented cartridges, cartridges with loose bullets, or any other defective rounds detected by visual inspection.

DO NOT fire if water is present in the barrel.

Always use serviceable and authorized ammunition.

Always keep your finger away from the trigger unless you intend to fire.

Rifle will fire if the safety selector lever is pointed to the fire position on your weapon.

Weapons are to be loaded, fire handled, and maintained in the manner prescribed by the weapon's basic operator's manual and SAR within the bounds of local SOP's and regulations.

Only the following U.S. approved 7.62mm ammunition may be fired:

DODIC AA11, M118 Long Range (7.62 x 51mm)
DODIC AA04, M993 Armor Piercing
DODIC AIII, M82 Blank Cartridge
DODIC A122, M80 Ball Cartridge
DODIC A136, M118 Special Ball
DODK A131, M62 Tracer

GENERAL SAFETY WARNINGS DESCRIPTION – Continued

WARNING

EYE PROTECTION

When disassembling, turn magazine away from face; spring is under compression.

Buffer retainer is spring loaded.

WARNING

HOT AREA

After use, the suppressor will be extremely hot. Protect your hands with leather or heat resistant gloves when removing the hot sound suppressor.

WARNING

EAR PROTECTION

Firing without sound suppression requires the shooter and all other personnel at or within 16 meters of the M110 sniper rifle to wear Army approved hearing protection devices.

Firing with sound suppression requires the shooter and all other personnel at or within 2 meters of the M110 sniper rifle to wear Army approved hearing protection devices.

Number of rounds allowed per day is 2,000 rounds with single hearing protection, and 40,000 rounds with double hearing protection.

EXPLANATION OF HAZARDOUS MATERIALS ICONS

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

HAZARDOUS MATERIALS DESCRIPTION

WARNING

WEAPON EXHAUST AND CLEANING SOLVENTS

This weapon should be fired in an open or a well-ventilated area.

Cleaning solvents can emit harmful vapors. Use only in a well-ventilated area away from heat sources.

TM 9-1005-342-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., 31 OCTOBER 2007

OPERATOR'S MANUAL

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM (NSN 1005-01-534-2841)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Equipment Technical Publications), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is: http://aeps.ria.army.mil. The DA Form 2028 is located under the Public Applications section in the AEPS Public Home Page. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or E-mail your letter or DA Form 2028 direct to: TACOM Life Cycle Management Command, ATTN: AMSTA-LC-LMPP / TECH PUBS, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The email address is ROCK-TACOM-TECH-PUB@conus.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

DISTRIBUTION STATEMENT C. Distribution authorized to U.S. Government agencies and their contractors. This publication is required for administration and operational purposes. This determination was made on 31 March 2006. Other requests for this document shall be referred to TACOM Life Cycle Management Command, ATTN: AMSTA-LC-LMPP / TECH PUBS, 1 Rock Island Arsenal, Rock Island, IL 61299-7630.

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DESTRUCTION NOTICE. Destroy by any method that will prevent disclosure of contents or reconstruction of the documents.

TABLE OF CONTENTS

TABLE OF CONTENTS - Continued

WP Sequence No.

HOW TO USE THIS MANUAL

The safest, easiest, and best way to operate and maintain the M110 Sniper Rifle is to use this manual. Learning to use this TM is as easy as reading through the next few pages of this section. Knowing what is in this manual and how to use it will save you time and work and will help you avoid exposing yourself to unnecessary hazards while performing your job.

So, Where Do You Start?

Right here, if this is the first time you are using this TM. Be sure to completely read this section on how to use this manual first. There's a lot of information here that you need to know.

Organization

This manual covers the operation and maintenance of the M110 Sniper Rifle. The manual itself is divided into 7 chapters including supporting information. The 7 chapters, and what they contain, are found in the Table of Contents in the front of this manual. For example, to learn about operating the M110 Sniper Rifle, you would look in the table of contents and discover that Chapter 2 provides all pertinent information about the operation of the M110 Sniper Rifle. Since Chapter 2 covers a great deal of information, you will have to scan the chapter to find the specific information you will need.

In Chapter 7**,** you will find the supporting information. Each work package provides specific information that will assist you in performing the various operational and maintenance tasks. The work packages provide such information as additional references (i.e., other TMs or FMs) as in WP 0025 00, and Expendable and Durable Items List as in WP 0028 00. Become familiar with all supporting information work packages and what they contain before beginning any operational or maintenance task.

Am I Ready To Use This TM?

If you've taken the time necessary to read this section, and are sure of the location and arrangement of the different sections of this TM, you are ready to begin. Remember this TM has been arranged with you, the user, in mind. Your safety and ability to perform the operational and maintenance tasks in the most efficient manner possible hinge on your ability to perform and understand the information contained in this manual. If you fully understand the arrangement and purpose of this TM, and have taken the time to read through this section, you will have no trouble operating and maintaining the M110 Sniper Rifle in the manner for which it was designed.

TM 9-1005-342-10

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
GENERAL INFORMATION

SCOPE

Type of Manual

Operator's manual.

Model Number and Equipment Name

M110 Semi-Automatic Sniper System (SASS), 7.62MM.

Purpose of Equipment

The M110 Sniper Rifle is a man-portable, direct line of sight weapon system capable of providing precision 7.62mm fire on targets at a distance of up to 1000 meters. This weapon is lightweight, direct gas-operated, air-cooled, magazine-fed, shoulder-fired weapon that can be fired in semi-automatic mode. The purpose of the weapon is to provide personnel an offensive/defensive capability to engage targets in the field. The MIL-STD 1913 rail system allows the operator the capability to mount various accessories on the M110 Sniper Rifle.

MAINTENANCE FORMS, RECORDS, AND REPORTS

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

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your M110 Sniper Rifle needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Internet access, the easiest and fastest way to report problems or suggestions, is to go to https://aeps.ria.army.mil/aepspublic.cfm (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR or a Warranty Claim Action (WCA)). You may also submit your information using an SF 368 Product Quality Deficiency Report (PQDR). You can send your SF 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS). We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

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

Corrosion is typically associated with rusting of metals; it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report (PQDR). Use of key words such as "corrosion", "rust", "deterioration", or "cracking", will ensure that the information is identified as a CPC problem.

The form should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Procedures and materials used for the destruction of the M110 Sniper Rifle will be found in TM 750-244-7.

PREPARATION FOR STORAGE

Storage or Shipment

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

DO NOT store the weapon with live ammunition in either the chamber or the magazines.

1. When rifle is to be stored in the transportation case, ensure the chamber and magazines are free of any rounds of ammunition (WP 0005 00).

2. Ensure there is no live ammunition in the area.

3. Ensure the rifle is unloaded, cleared, and the hammer is down (WP 0005 00). Rifle should be cleaned and lubricated (WP 0012 00).

4. The preferred method of storage is in a vertical position with the muzzle pointed down.

5. Remove battery from the day optic scope before storing in the scope carrying case (Reference WP 0017 00-4).

WARRANTY INFORMATION

The M110 Sniper Rifle is warranted for (1,095 days). The warranty starts on the date found in block 23 of DA Form 2408-9, Equipment Control Record. Report all defects to your supervisor, who will take appropriate action by reporting the defects thru the Army's Electronic Deficiency Reporting System (EDRS) found on the Army Electronic Product Support Website.

NOMENCLATURE CROSS-REFERENCE LIST

Official Name	Common Name
Key, Socket Head Screw; Socket Head Screw; Set Screw	Allen Wrench; Allen Screw
Lower Receiver Extension	Buffer Tube
Cartridge	Round / Ammunition
Carrier Key	Gas Key
Lubricant, CLP	Oil
Bore Cleaner	Solvent
Action Spring	Recoil Spring
Day Optic/Primary Daytime Optic	Scope
Dewey Rod	One Piece Cleaning Rod
Transportation Case	Carrying Case
Deployment Kit	Scope Carrying Case

NOMENCLATURE CROSS-REFERENCE LIST - Continued

Official Name	Common Name
1913 Picatinny Rail System	MIL-STD 1913 Rail System
Sniper Rifle / Sniper Rifle System (M110 SASS)	Rifle / Weapon
Safety Selector Lever	Safety
Back-Up Iron Sight	BUIS

LIST OF ABBREVIATIONS / ACRONYMS

Abbreviation/Acronym	Name
API	Armor-Piercing Incendiary
APIT	Armor-Piercing Incendiary Tracer
BUIS	Back Up Iron Sight
CLP	Cleaner, Lubricant, and Preservative
DOS	Day Optic Scope
LAW	Lubricant, Arctic Weather
LSA	Lubricant, Small Arms
LSAT	Lubricant, Small Arms (with Teflon)
MOA	Minute of Angle
RAS	Rail Adapter System
RBC	Rifle Bore Cleaner
SMR	Source, Maintenance, and Recoverability
TM	Technical Manual

QUALITY OF MATERIAL

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

SAFETY, CARE, AND HANDLING

Refer to WP 0023 00 for general ammunition safety, care, and handling.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Characteristics

The M110 Sniper Rifle is equipped with the MIL-STD 1913 Rail System, Back-Up Iron Sight (BUIS), Adjustable Buttstock, Bipod, four 10 round magazines and four 20 round magazines, Rifle Sling, Leupold 3.5 x 10x variable power Day Optic Scope, and Sound Suppressor. The rifle is also supplied with a transportation case, deployment kit, and cleaning kit.

Capabilities

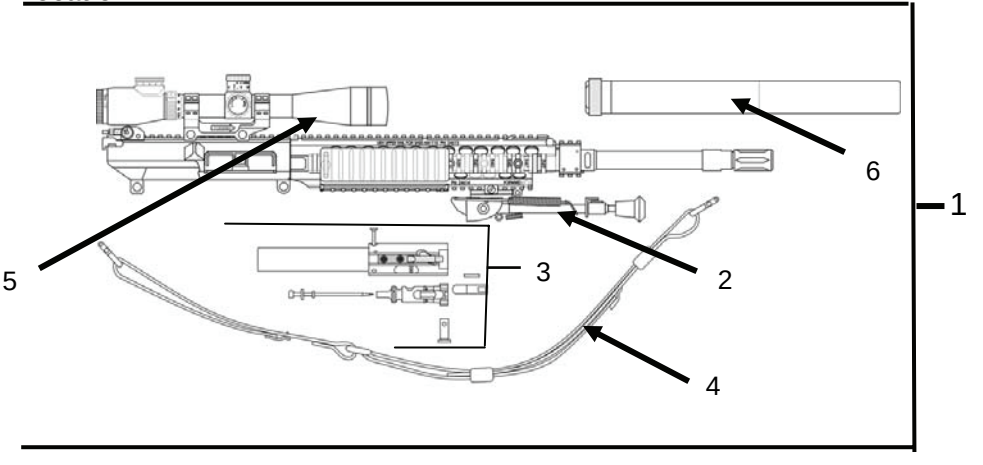
The M110 is a semi-automatic weapon system which utilizes standard 7.62mm precision M118 LR ammunition. The M110 is a man-portable, direct line of sight weapon system capable of providing precision 7.62mm NATO fire on targets at a distance of up to 1000 meters using match grade ammunition.

Features

The M110 is a semi-automatic, direct gas-operated, air-cooled, magazine-fed, shoulder-fired weapon chambered for 7.62mm ammunition.

LOCATION AND DESCRIPTION OF UPPER RECEIVER AND BARREL ASSEMBLY

Location



Description

1. Upper Receiver and Barrel Assembly. Includes the Day Optic Scope (DOS), Back-Up Iron Sight (BUIS), MIL-STD 1913 Rail System, Sound Suppressor, Bolt and Carrier Assembly, Charging Handle Assembly, and Barrel. The MIL-STD 1913 rail system is used to attach the DOS and accessory optic sights. The barrel is 20 inches long with five grooves in a uniform right-hand twist, one turn in 11 inches.

2. Bipod Assembly. Detachable forward support system composed of retractable legs and extending footpads.

3. Bolt and Carrier Assembly. Houses the firing pin, extractor, and ejector. Provides stripping, chambering, locking, firing, extraction, and ejection of cartridges using the drive springs and projectile propelling gases for power.

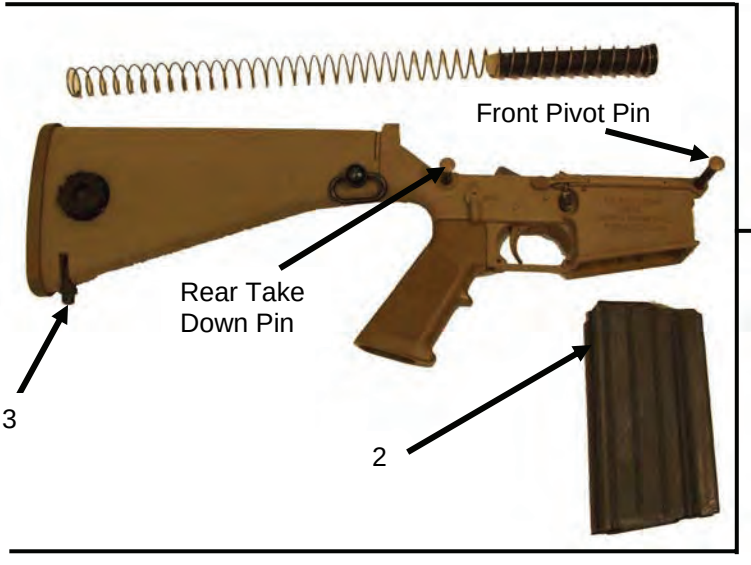
4. Rifle Sling. Provides the means for carrying the weapon as well as a shooting aid for alternate positions

5. Day Optic Scope. The day optic scope is a 3.5 x 10x variable power rifle scope. The scope has an illuminated, improved Tactical Milling Reticle (TMR) powered by an Army common / standard battery DL 1/3 N (item 18, WP 0028 00).

6. Sound Suppressor. The sound suppressor is an integrated acoustic, flash and blast suppressor that is to be attached and detached to the rifle barrel by hand.

LOCATION AND DESCRIPTION OF LOWER RECEIVER AND BUTTSTOCK ASSEMBLY

Location



Description

1. Lower Receiver and Buttstock Assembly. Includes magazine catch button, trigger, and safety mechanism, front pivot pin and rear take down pin, buffer, recoil spring, and adjustable buttstock assembly (Reference WP 0004 00-2).

2. Magazine. Holds cartridges and provides a guide for positioning cartridges for stripping. Provides quick reload capabilities for sustained firing.

3. Swivel Sling. Allows the sling to turn or pivot/rotate for a secure fit/support.

EQUIPMENT DATA

Rifle Length without sound suppressor attached: 40.5 inches (1,028mm).
Without sound suppressor (buttstock extended): 42.0 inches (106cm).
With sound suppressor: 46.5 inches (1,181mm).

Sound Suppressor Weight: 1.96 lbs.

Maximum Height: 10.25 inches (260mm) (with 20 round magazine and Day Optic Scope).

Rifle Weight: 13.7 lbs. (6.21 kg). Rifle with Sound Suppressor: 15.7 lbs. (7.1 kg)

Sound Suppressor Weight: 1.96 lbs. (.89 kg)

Barrel Length: 20 inches.

Barrel Rifling: 5 grooves, right-hand twist (1 turn in 11 inches (279mm).

Muzzle Velocity: 2,571 ft per second (with/M118LR ammunition) unsuppressed.
Maximum Effective Range: 1,000 meters.

Magazine: Weight Unloaded: 0.46 lbs. (.21 kg.).
Weight Loaded: (20 Rounds): 1.62 lbs. (.73 kg.).

Bipod: Weight: .87 lbs. (.39 kg.).
Bipod Adapter Weight: .12 lbs. (.05 kg.).

Leupold 3.5 x 10 Power Illuminated Reticle Day Optic Scope: 1.76 lbs. (.79 kg.).

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
THEORY OF OPERATION

CYCLE OF OPERATION

The cycle of operation for the M110 Sniper Rifle is broken down into 8 basic steps (more than one step may occur at the same time).

1. Firing: (Conditions: round in chamber, bolt locked, hammer cocked.) Safety is rotated for FIRE, trigger is pulled releasing hammer. Hammer springs forward under tension of hammer spring. Hammer strikes firing pin and firing pin strikes cartridge primer. Primer detonates from the firing pin impact and ignites propellant (gunpowder) inside cartridge case. Very high pressure (50,000 pounds per square inch) develops inside case as the powder burns. Bullet is pushed from case and accelerated down barrel and out muzzle.

2. Unlocking: Expanding gas pressure enters the gas tube through a port in the forward area of the barrel. This gas pressure travels through the gas tube into the carrier key. Via the gas key, high pressure gas enters the carrier interior, but is trapped by the bolt rings at the front. Consequently, expanding gas pressure begins pushing the carrier to the rear, away from the bolt. As this gas continues to expand, (the bullet has already left the barrel) the bolt carrier continues to move rearward overcoming the tension of the action

(recoil) spring. The cam groove of the bolt carrier acts on the bolt cam pin which in-turn causes the bolt to rotate and the bolt lugs to disengage from the barrel extension locking lugs.

3. Extraction: As the bolt now begins movement to the rear, the lip of the extractor, which is hooked on the rim of the cartridge case, pulls the case out of the chamber. The lip maintains its grip on the rim of the case through tension of the extractor spring as the bolt passes by the ejection port.

4. Ejection: As the case clears the barrel extension, the stored energy of the ejector spring is applied to the rim of the case by the ejector plunger. The plunger completes its action as the case clears the ejection port and is rotated free of the extractor lip and bolt. If working properly, this sequence throws the case through the ejection port and clear of the rifle.

5. Cocking: The thrust of the carrier assembly from the injection of expanding gases is so great, it continues to move the carrier and bolt assembly fully back into the receiver extension. As these parts move to the rear, the bottom surface of the carrier passes over the face of the hammer forcing it back and down against the tension of the hammer spring. With the trigger finger probably still to the rear at this moment, the hook of the disconnector engages the rear hook of the hammer, holding the hammer to the rear and down until the trigger is released (subsequently, the hammer is then held back by the

sear as the trigger is released). The action or recoil spring is now fully compressed and prepared to thrust the recoiling mass (carrier and bolt assembly) forward.

6. Feeding: As the bolt and carrier begin moving forward under tension of the action spring, the lower feed lug of the bolt strikes the base of the top cartridge in the magazine. The force of the bolt strips a round from the magazine feed lips. As the round begins to move forward, the tip of the bullet hits one of the two feed ramps of the barrel extension. The angle of the feed ramp helps force the round up and into the chamber as the bolt continues to move it forward in the feeding cycle.

7. Chambering: Chambering occurs when the cartridge is fully forward in the chamber.

8. Locking: With a cartridge fully in the chamber, the bolt has fully entered the barrel extension and has stopped moving forward. Also at this time, the extractor lip has snapped over the rim into the extractor groove of the cartridge case and the ejector and its spring are fully compressed. The carrier, however, continues forward under continued force of the action spring and through action of the cam pin groove on the cam pin, causes the bolt to rotate. Rotation of the bolt moves its locking lugs into alignment with the barrel extension locking lugs. When this rotation of the bolt is complete, the bolt is locked.

END OF WORK PACKAGE

TM 9-1005-342-10

CHAPTER 2

OPERATOR INSTRUCTIONS

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS

GENERAL

The following description of the right view contains an illustration that shows the location of each control for the M110 Sniper Rifle.

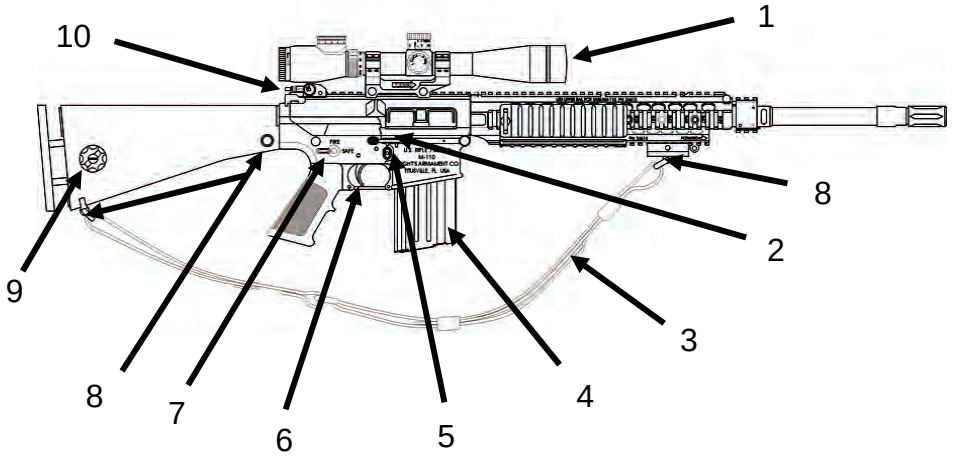


Figure 1. Right Side View

Right Side View

1. Day Optic Scope. Designed to assist vision (Reference WP 0007 00).

2. Ambidextrous Bolt Catch. Locks the bolt to the rear when last round is fired with magazine inserted.

3. Rifle Sling. Used for carrying a weapon and for supporting the weapon during firing.

4. Cartridge Magazine. Contains up to 10 and 20 rounds of 7.62mm ammunition.

5. Ambidextrous Magazine Catch Button. Holds magazine in place in magazine well and allows operator to release magazine and remove it from weapon.

6. Trigger. When activated by operator, initiates firing sequence.

7. Ambidextrous Safety Selector. For use by right or left handed shooters to select fire or safe mode of the weapon.

8. Sling Swivel Attaching Points. Allows the sling to turn or pivot/rotate for a secure fit/support.

9. Adjustable Buttstock Assembly. Houses the action spring, buffer assembly, and extension assembly.

10. Back-Up Iron Sight (BUIS). Contains range of 200m to 600m adjustment controls.

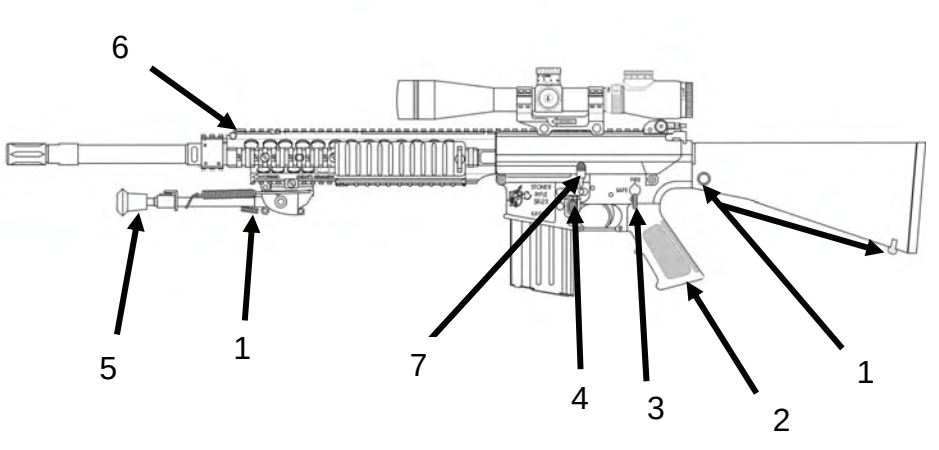


Figure 2. Left Side View

Left Side View

1. Sling Swivel Attaching Points. Allows the sling to turn or pivot/rotate for a secure fit/support.

2. Pistol Grip. For grasping, holding, and helping steady the weapon.

3. Ambidextrous Safety Selector Lever. Allows the operator to place weapon on safe.

4. Ambidextrous Magazine Release. When magazine is fully inserted into the magazine well, the magazine catch, securely locks the magazine into position.

5. Bipod. Attaches to the rifle to help support the weapon and provide for greater accuracy during firing.

6. Front Folding Sight. Is an adjustable sight used to align the weapon with the target.

7. Ambidextrous Bolt Catch. Locks the bolt to the rear when last round is fired with magazine inserted.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
OPERATION UNDER USUAL CONDITIONS

OPERATING PROCEDURES

LOADING AND UNLOADING THE RIFLE

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Always keep your finger away from the trigger unless you intend to fire. Make sure the rifle is not already loaded by inspecting the ambidextrous magazine and chamber.

Always use serviceable and authorized ammunition. Inspect ammunition for defects prior to loading magazines.

LOADING THE MAGAZINE

CAUTION

DO NOT leave rounds in the magazine for extended periods of time. Doing so may cause spring to lose tension causing a malfunction.

1. Load magazines one round at a time.

2. Place each round between magazine lips and push down until round rotates under feed lips.

3. As rounds are pushed down, slide them to the rear of the magazine.

UNLOADING THE MAGAZINE

1. Strip one round at a time out of the magazine by pushing on the cartridge rim in the direction of normal feeding. DO NOT bend or deform magazine lips when stripping rounds from magazines.

2. An alternative method is to push top round slightly forward and depress the base of the second round under it. This relieves the pressure on the top round making it easier to remove.

LOADING THE RIFLE AND FIRING

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Ensure the ambidextrous safety selector lever (2) is in the "safe" position and that the chamber is clear of any obstruction.

Never try to force a cartridge into the chamber. If the bolt does not fully close, clear any obstructions until a round is successfully chambered. Never attempt to fire a round if the bolt does not fully close.

1. Point the rifle in a safe direction. To lock bolt open, pull charging handle (6) rearward. Press ambidextrous bolt catch (1) and allow bolt to move forward until it engages bolt catch (1). Return charging handle (6) to full forward position. Left and right sides are shown below. Bolt catch will only manually engage from left side. Place ambidextrous safety selector lever (2) in the "safe" position.

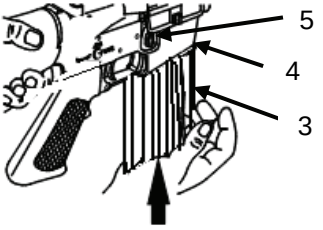
Left Side

Right Side

2. Visually check chamber and receiver areas. Remove any rounds or obstructions from chamber / receiver.

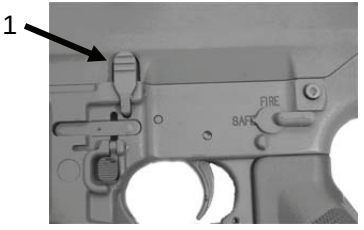
LOADING THE RIFLE AND FIRING - Continued

3. Insert loaded magazine (3) up into receiver magazine well (4) until the ambidextrous magazine catch (5) engages and positively retains the loaded magazine (3). With slight pressure, pull down on the bottom of the loaded magazine (3) with palm of hand to be sure it's locked.



4. Push on ambidextrous bolt catch (1) to release bolt. Bolt will spring forward into battery and chamber the round.

Left Side



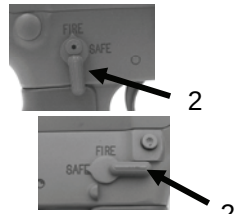
Right Side

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Rifle is now loaded. Keep it pointed in a safe direction. If you rotate the ambidextrous safety selector lever (2) to the FIRE position, the rifle will fire when you pull the trigger.

5. Rotate ambidextrous safety selector lever (2) to the FIRE position. The rifle will fire one round for each squeeze of the trigger until the magazine and chamber are empty; the bolt will lock to the rear after last round is fired.



6. When finished firing, rotate the ambidextrous safety selector lever (2) to safe position.

UNLOADING THE RIFLE

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Always assume there is a live round in the chamber.

After the rifle is unloaded, and with the charging handle to the rear, always physically check the chamber to ensure that the rifle is empty.

NOTE

The bolt will automatically remain to the rear when the rifle or magazine is empty.

CLEARING

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Ensure weapon is on "SAFE" and pointed in a safe direction.

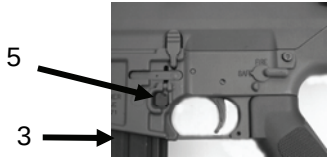
NOTE

If weapon is not cocked, ambidextrous safety selector lever (2) cannot be pointed toward SAFE.

1. Point weapon in a SAFE direction! Place ambidextrous safety selector lever (2) on SAFE.

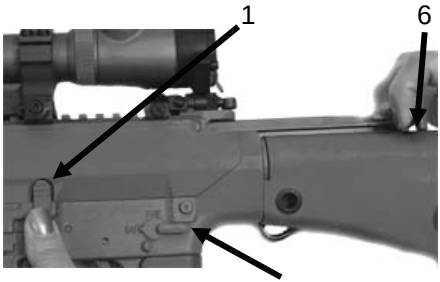
2. Remove cartridge magazine (3) by depressing ambidextrous magazine catch (5) and releasing cartridge magazine (3).

Left Side



Right Side

3. To lock bolt open, pull charging handle (6) rearward. Press ambidextrous bolt catch (1) and allow bolt to move forward until it engages bolt catch (1). Return charging handle (6) to full forward position. If you haven't before, place ambidextrous safety selector lever (2) on SAFE.



WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Check receiver and chamber to ensure these areas contain no ammunition or other obstructions.

4. With ambidextrous safety selector lever (2) pointing toward SAFE, allow bolt to go forward by pressing ambidextrous bolt catch (1).

EMERGENCY PROCEDURES

An emergency condition exists when the magazine for the rifle has been lost or damaged and is not available.

In an emergency, the weapon may be fired without the magazine. A single cartridge may be inserted directly into the chamber. Insert round through ejection port into chamber. After insertion, close and lock the bolt to fire.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
BACK-UP IRON SIGHT (BUIS) (NSN: 1005-01-499-6868 - PN: 98474)

INITIAL SETUP:

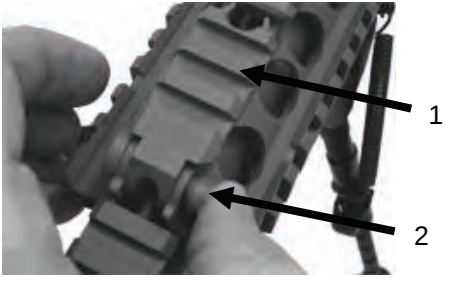
Tools and Special Tools

Deployment Kit (item 1, WP 0026 00)

The M110 Sniper Rifle is equipped with Back-Up Iron Sight (BUIS) which consists of folding rear and front sights. They are intended for use when the day optic scope is removed. Any and all required windage adjustments are made with the rear sight's windage knob. Windage adjustments are in 1/2 MOA clicks (1/8" @ 25M and 1/2" @ 100M). Zero range adjustments are made to the front sight post during zeroing; thereafter, subsequent major range adjustments are applied to the rear sight elevation adjustment drum. The rear sight's elevation drum is marked from 200 to 600 meters. Its intermediate clicks are approximately 0.5 MOA.

Front Sight Post Adjustment

1. Erect front sight assembly (1) by pushing in on the front sight plunger (2).

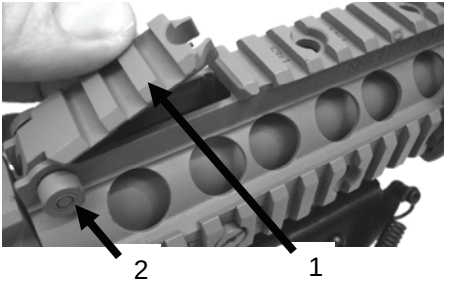


2. Lift up on front sight assembly (1). When the front sight assembly (1) is in the full up position, release the front sight plunger (2) to lock in place.

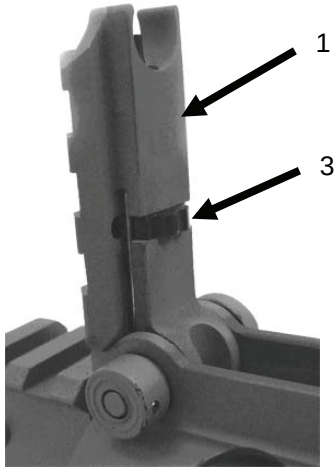
NOTE

One click of the front sight post moves the strike of the bullet 3/16" at 25 meters.

One click of the front sight post moves the strike of the bullet .75" at 100 meters.



2. To adjust the front sight post (1), rotate the elevation knob (3) clockwise or counterclockwise during zeroing procedures.

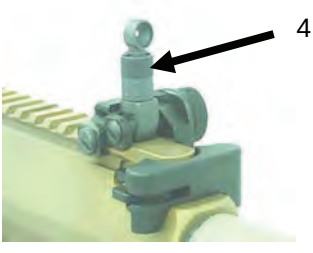


Rear Sight Post Adjustment

1. Erect rear sight by lifting aperture stem (4).

2. At 25 meters, use "Z" mark (3 clicks past the 200M marking) for point of aim = point of impact zeroing (2).

3. Always confirm BUIS zero at 200 meters using the 200 meter marking and fine tune elevation adjustments to the front sight post.



NOTE

If zeroing at 100M, your shot group will be 2-3" above your aiming point when elevation is set at "Z".

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
ZEROING THE DAY OPTIC SCOPE (1005-01-544-6092 - PN: 20305)

INITIAL SETUP:

References:
WP 0017 00

Tools and Special Tools:
Deployment Kit (item 1, WP 0026 00)

DESCRIPTION OF RIGHT SIDE VIEW

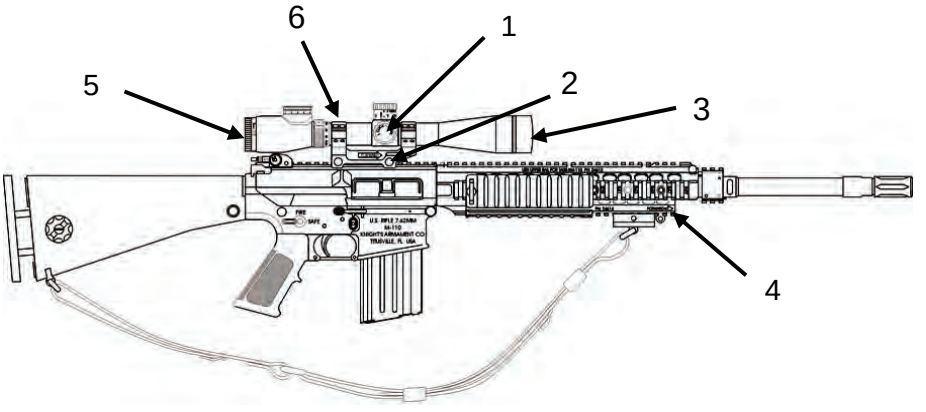


Figure 1. Right Side View

Right Side View

1. Windage Knob. Allows operator to adjust to correct for effects of wind.

2. Scope Ring Base. Allows the day optic scope to be attached to the weapon.

3. Day Optic Scope Objective Lens. Allows light for day optic sight for target acquisition.

4. Bipod. Provides stable firing platform on even or uneven terrain.

5. Day Optic Scope Eyepiece Focus. To adjust the clarity of reticle sharpness of an image of the day optic scope.

6. Scope Ring Cap. For securing the scope on the scope ring base.

DESCRIPTION OF LEFT SIDE VIEW

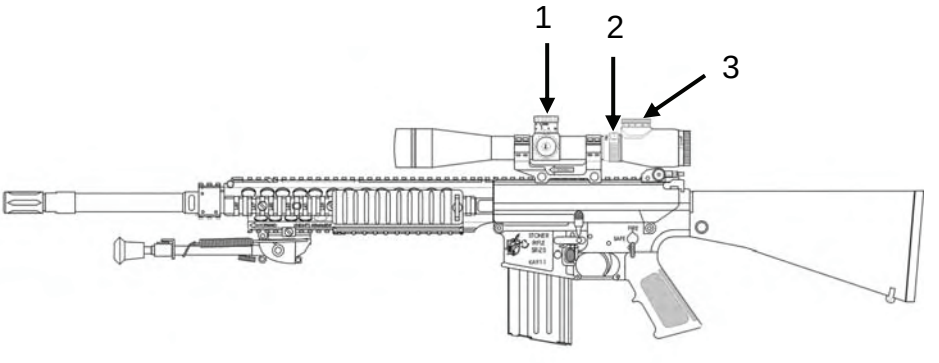


Figure 2. Left Side View

Left Side View

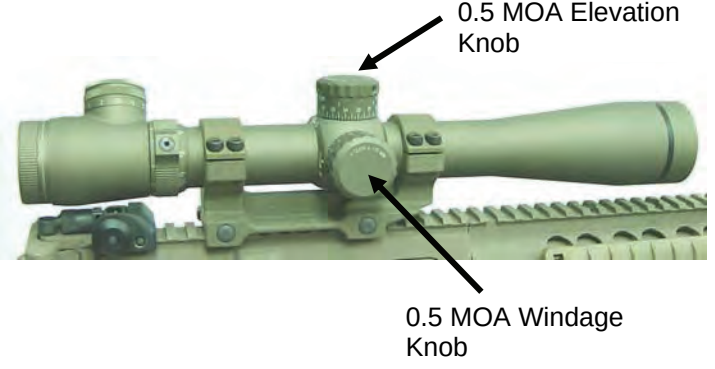
1. Day Optic Scope Elevation Adjustment Knob. To allow the strike of the bullet to move up or down in relation to the cross hairs of the scope.

2. Day Optic Scope Variable Power Ring. To allow the scope to zoom targets in and out for recognition and target acquisition. Also allows the shooter to zoom the target 3.5 to power.

3. Day Optic Scope Reticle Illumination Control. Allows operator to adjust the level of illumination of the reticle.

GENERAL

The day optic scope is a Leupold 3.5-10x variable power with 0.5 MOA elevation and windage knobs and an illuminated Tactical Milling Reticle (TMR).



FOCUSING THE DAY OPTIC SCOPE

NOTE

If you do not see the scope's full field of view when your cheek is in its normal shooting position on the stock (stock weld), re-position the scope forward or backwards for proper eye relief (full field of view) on the rail or in the mount before proceeding 2.5 – 3.5. inches. The buttstock may be adjusted as well to accommodate eye relief and cheek weld.

1. **Eyepiece / Reticle Focusing**. With proper focus, both reticle and target will have maximum sharpness. To properly focus the reticle and scope, you should have an area where you can observe a target at about 300 meters. Focus the scope yourself – all human eyes see things differently.

FOCUSING THE DAY OPTIC SCOPE

NOTE

Eyepiece focusing is performed after mounting the day optic scope and supporting the rifle in a steady rest. The day optic scope has a eyepiece diopter / focus adjustment ring (1) at the rear eyepiece. It is marked with + or - number values for reference. This scope has no locking ring.

0007 00-8

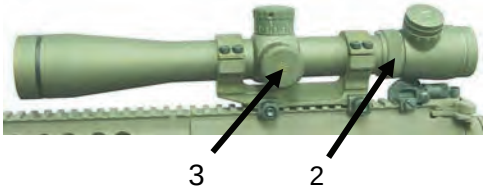
a. Remove rear lens cap. Rotate scope's variable power ring (2) to its highest magnification 10X (counterclockwise) and the target / parallax adjustment knob (3) to its infinity setting (00).

b. Point the rifle at a clear area of the sky. The eyepiece diopter / focus adjustment ring (1) is marked for your reference.

c. Once at the best focus point, note the + or – number value.

NOTE

You can record those numbers for future reference.



FOCUSING THE DAY OPTIC SCOPE - Continued

d. Look away from the scope at some distant object and let your eyes focus on that object. With your eyes focused for that distance, quickly look into the scope at the reticle. It should appear clear and sharp.

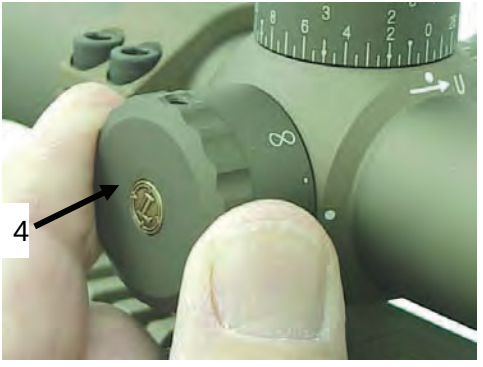
e. Repeat steps b thru d above until focus is set for your eyes.

2. **Parallax Adjustment**. The day optic scope has a parallax adjustment knob (4) on the left side of the scope. Once the reticle focus is set as described above, the scope is then focused on a target as follows:

a. Observe the markings on the knob. The larger dots are settings for closer ranges; the infinity mark is for the most distant targets. Note the knob stops at either the minimum or maximum setting.

b. Steady the rifle and observe a small target from 100 to 300 meters through the scope.

c. Move your head slightly from left to right and note if the target appears to move away from the center of the crosshairs.



d. If target appears to move, parallax is present and you need to adjust the parallax adjustment knob (4). Rotate the parallax adjustment knob (4) slightly in one direction and then the other; observe the effect in the apparent target movement by moving your head as before in step c above. Find the best knob position for the elimination of parallax.

e. When shooting at closer or more distant targets, the knob may require re-adjustment.

ZEROING THE DAY OPTIC SCOPE

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

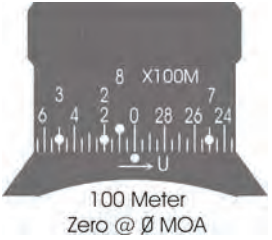
Weapon is loaded! Ensure weapon is on safe and pointed in a safe direction. Zeroing MUST be done on the firing range!

1. Once the reticle and scope are properly focused and parallax minimized for a selected range, zero it using the rifle's correct ammunition. The elevation knob can be replaced and are calibrated to the trajectories and standard velocities (and barrel lengths) of specific rounds at sea level. The knob marked 7.62 is for M118 LR ammunition. The elevation knob (zero and adjustment knob) is on top of the scope. The windage knob (zero and adjustment knob) is located to the right side of the scope.

ZEROING THE DAY OPTIC SCOPE – Continued

2. **100 Meter Zeroing Method**:

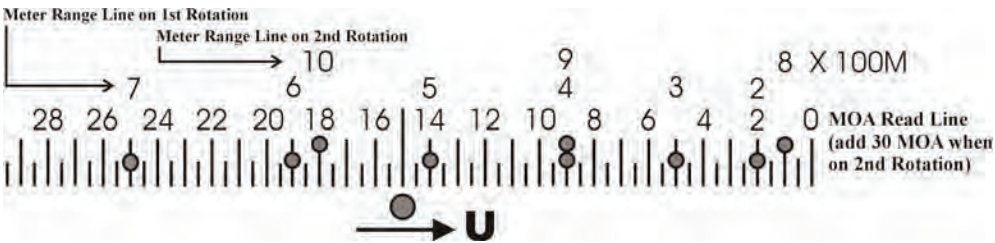
a. Set elevation knob to 100 meters (0 mark on the range scale); and the setting and windage knob to zero (0) setting.



b. Fire a 3-shot group at 100 meters. Use a large target to capture all rounds fired. Observe shot group with spotting scope and adjust accordingly to spot the 3-round group.

c. Calculate the clicks necessary to move the shot group (point of impact) to the point of aim. The following click adjustments apply:

(1) **Elevation Knob**. (0.5) MOA per click. At 100 meters, one click equals approximately 0.5 inches.



The M118 LR elevation knob is capable of sufficient range adjustment for target engagement from 50 to 1000 meters.

(2) **Windage Knob**. (0.5) MOA per click. At 100 meters, one click equals 0.5 inches. At 100 meters, one click equals .10 inch.

d. Upon returning to the firing point, ignore the other markings on the knobs for the moment and rotate the knobs the estimated number of clicks to move the point of original impact to the actual point of aim.

100 Meter Zeroing Method - Continued

e. Re-fire a 3-shot group from 100 meters. Repeat steps c thru d above until the point of impact is the same as the point of aim.

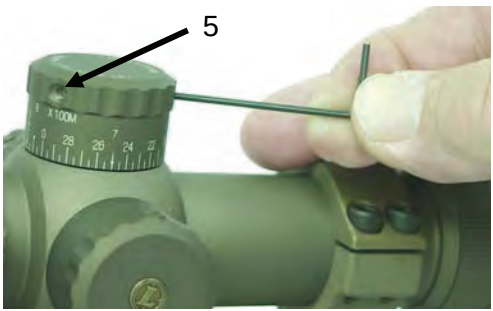
NOTE

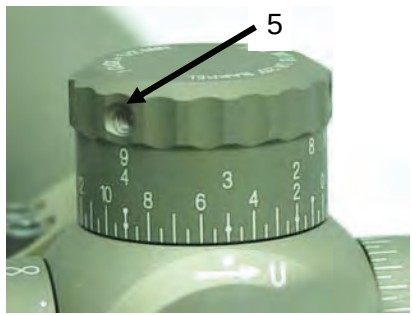
The small set screws (6) need only be loosened 1 or 2 turns to allow knobs to rotate freely without actually changing internal zero adjustments.

f. Carefully loosen the three small set screws (5) located around the edges of the elevation and windage knobs with a 3/32 inch allen wrench from the deployment kit. Gently rotate (slip) knobs to the appropriate numerical range / elevation settings (for example the number 0 for 100 meters).

CAUTION
DO NOT over tighten.

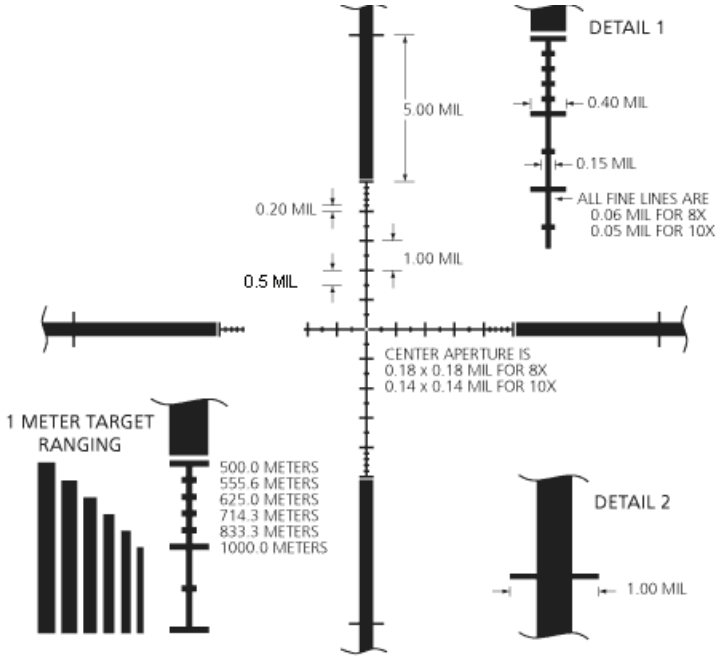
g. Re-tighten the small set screws (5). Do not over tighten. Use “short” end of the allen wrench for a handle when tightening, and the “long” end as a handle to loosen small set screws.





TACTICAL MILLING RETICLE (TMR)

The Tactical Milling Reticle (TMR) is a modified duplex crosshair style with thick outer sections that thin as they approach the center and almost cross. A special feature of this reticle is the series of equally spaced 1.0 mil and 0.5 mil "hash marks" on the thin crosshair sections. There are four long 1 mil hashmarks on each side of thin crosshair center (the four long marks are 0.4 mil in length), and five shorter 0.5 mil markings (the shorter marks are 0.15 mil in length). The 0.4 mil marks start 1.0 mil from the center, and each of the other 0.4 mil marks are 1.0 mil apart. The "hashmark" ends of the thick outer section are 5.0 mil apart and are 1.0 mil in length.


DETAIL 1
5.00 MIL
0.40 MIL
0.15 MIL
ALL FINE LINES ARE
0.06 MIL FOR 8X
0.05 MIL FOR 10X
0.20 MIL
1.00 MIL
0.5 MIL
CENTER APERTURE IS
0.18 x 0.18 MIL FOR 8X
0.14 x 0.14 MIL FOR 10X
1 METER TARGET
RANGING
500.0 METERS
555.6 METERS
625.0 METERS
714.3 METERS
833.3 METERS
1000.0 METERS
DETAIL 2
1.00 MIL

0007 00-17

TMR - Defined

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
OPERATION UNDER UNUSUAL CONDITIONS

INITIAL SETUP:

Tools & Special Tools
One Piece Cleaning Rod (item 7, WP 0026 00)

Materials/Parts
CLP (item 10, WP 0028 00)
LAW (item 12, WP 0028)
Wiping Rag (item 15, WP 0028 00)
Swab (item 16, WP 0028 00)

Equipment
Crown and Scope Cover (item 10, WP 0026 00)
Magazine Pouches (item 11, 12, 13, WP 0026 00)

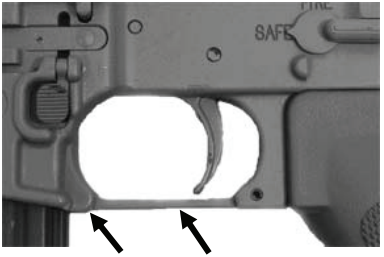
References
WP 0005 00
WP 0012 00
WP 0013 00
WP 0023 00
WP 0026 00
WP 0028 00

NOTE

Unusual conditions are defined as any conditions requiring other than normal maintenance for continued operation and serviceability of the rifle. Perform the maintenance procedures outlined for the climate and weather conditions that most apply to your operational area. Refer to WP 0012 00 for normal lubrication instructions.

UNUSUAL ENVIRONMENT / WEATHER

EXTREME COLD/ ARCTIC CLIMATE



1. To operate the weapon in extreme cold, depress the trigger guard plunger (1) and open the trigger guard (2) to obtain easy access to the trigger when wearing arctic mittens.

NOTE

Under extreme cold conditions, a small amount of CLP on moving parts can prevent weapon from firing. Ensure CLP is thoroughly removed from weapon and LAW applied prior to extreme cold operations.

2. Cleaning and lubrication should be accomplished inside a warm room and the weapon should be at room temperature if possible.

3. When moving a cold rifle and ammunition into a warm place, condensation (moisture) will form in and on the surfaces of the rifle and ammunition. If possible, leave your weapon and gear in a protected but cold area outside. When the rifle is brought inside a warm place, it should be field stripped and wiped dry several times with a clean dry cloth as it reaches room temperature.

4. To prevent the condensation of moisture and freezing of parts, keep the weapon completely covered when moving from a warm to a cold area to allow parts to gradually cool.

5. Always attempt to keep the rifle and day optic scope as dry as possible. Keep the dust cover closed.

6. Keep ammunition and the insides of magazines dry. Moisture can cause malfunctions because it will freeze and turn to ice. DO NOT lubricate ammunition.

7. DO NOT lay a warm weapon directly on snow or ice.

8. As an added protective measure, the use of magazine pouches, and a drag bag will help protect your rifle. Use them when the tactical situation permits.

9. Always keep snow out of the bore. If snow should get in the bore, field strip the rifle and clean the bore from the chamber end.

EXTREME COLD CLIMATE - ARCTIC - Continued

10. For extended operations in extreme cold, have a Unit Maintenance remove trigger guard.

CAUTION

Unload and hand function rifle every 30 minutes to prevent freezing of parts.

HOT, WET JUNGLE CLIMATES

NOTE

Use CLP to clean and lubricate your weapon.

1. Use CLP to clean and lightly lubricate your weapon more frequently to prevent corrosion. Keep a light coat of lubricant on all metal surfaces. Wipe away moisture with a clean dry cloth left by finger and handprints.

2. Frequently inspect hidden areas of the bolt and carrier assembly, locking lugs of barrel extension, chamber, lower receiver and receiver extension (buffer tube), and trigger assembly areas. Check and lubricate spring loaded detents for free spring action.

3. Perform normal maintenance as outlined in the Preventive Maintenance Checks and Services (PMCS) table (WP 0012 00).

4. Unload and check magazines, springs, and ammunition daily if necessary. Wipe ammunition dry with a clean dry cloth before reloading. DO NOT lubricate ammunition.

5. The use of magazine pouches, and a drag bag will help protect your rifle when the tactical situation permits. Keep optical sights as dry as possible and out of the direct rays of the sun.

6. If rain or water gets in the bore, field strip the rifle and clean the bore from the chamber end. Check that the bore is clear if you fall, or drop the rifle at night or in the mud and after fording water obstacles. Clean, dry, and re-lubricate if the rifle becomes submerged.

DESERT CLIMATES - HOT / COLD, DRY / WET, SANDY / DUSTY

NOTE

Hot, dry climates are usually areas containing blowing sand and fine dust. Deserts can be hot during daylight hours and freezing during hours of darkness. Consequently, this harsh environment will severely impact the operation of your weapon as well as all other types of equipment. Your weapons continued operation will depend on your detailed cleaning and lubricating procedures.

1. Dust and sand will get into the weapon and magazines. This will cause malfunctions. Give the inside areas and functional parts of the weapon a thorough cleaning every day and after firing missions.

NOTE

DO NOT lubricate the exterior of the weapon unless corrosion Becomes a problem in humid coastal areas.

2. Corrosion is less likely to form on metal parts in a dry climate; therefore, lubrication should only be applied to the internal moving parts as directed in WP 0012 00 for normal conditions. Use light amounts of lubrication.

3. Use of a crown scope cover will help to keep out sand and dirt from entering into the muzzle end of the barrel and the day optic scope. Use the drag bag or magazine pouch if the tactical situation permits. Use magazine pouches to protect ammunition and magazines.

4. To seal airborne dust and blowing sand from the receiver interior, keep the bolt closed on an empty chamber, the dust cover closed, and an empty magazine in the magazine well.

5. Keep the day optic scope and magazines/ammunition from the direct rays of the sun. Ammunition warmed by the hot sun may not shoot to the rifle's zero.

6. Unload and wipe clean magazines/ammunition several times daily with a clean, dry cloth. DO NOT lubricate ammunition, but lubricate magazine spring lightly (as for normal operations).

AFTER FORDING OPERATIONS - ALL CLIMATES

1. Always attempt to keep weapon dry.

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

DO NOT fire if water is present in barrel.

2. Point the muzzle down and shake vigorously.

AFTER FORDING OPERATIONS - ALL CLIMATES - Continued

3. Always drain any water from barrel prior to firing. If the bore is wet, dry with a swab and one piece cleaning rod.

4. When time and situation permits, unload, hand operate rifle, clean and lube as soon as possible.

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

The sound suppressor is not designed to be used "wet". Under no circumstances should it be filled with grease or any other substance before use. The use of any substance could alter the path of the projectile and/or cause malfunctions

AFTER SALT WATER OPERATIONS

1. Flush entire weapon with fresh water as soon as possible.

2. Clean and lubricate entire weapon (Reference WP 0012 00-16).

IMMEDIATE ACTION / EMERGENCY PROCEDURES

1. If your rifle stops firing unexpectedly and the tactical situation demands you must continue firing, point it in a safe direction and perform the following immediate actions:

a. Slap upward on bottom of magazine to make sure it is properly seated.

b. Pull charging handle all the way to the rear. Observe ejection of empty case or complete round (if any). Visually check chamber for obstructions.

c. If the chamber is clear, release charging handle to feed a new round into the chamber. DO NOT ride the charging handle forward, let it spring forward under pressure from the compressed recoil spring.

d. Aim the rifle and attempt to fire again. If rifle fails to fire, remove magazine, lock bolt to rear and clear chamber, select a new magazine and reload, aim and attempt to fire.

2. If rifle does not fire again, clear the rifle and perform troubleshooting procedures on the rifle (WP 0010 00).

END OF WORK PACKAGE

CHAPTER 3

TROUBLESHOOTING PROCEDURES

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
TROUBLESHOOTING INDEX

GENERAL

The malfunction/symptom index can be used as a quick guide to troubleshooting. Common malfunctions are listed in cycle of function order with a work package page reference to the troubleshooting table where a test or inspection and corrective action are provided.

This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify organizational maintenance.

MALFUNCTION/SYMPTOM INDEX

Malfunction / Symptom	Troubleshooting Procedure Work Package
Failure to Fire	WP 0010 00
Failure to Unlock	WP 0010 00
Failure to Feed	WP 0010 00
Weapon Double-feeds	WP 0010 00
Failure to Chamber	WP 0010 00
Failure to Lock	WP 0010 00
Failure to Extract	WP 0010 00
Short Recoil	WP 0010 00
Bolt Fails to Lock After Last Round	WP 0010 00
Ambidextrous Safety Selector Lever Binds	WP 0010 00

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
TROUBLESHOOTING PROCEDURES

INITIAL SETUP:

	References
N/A	WP 0008 00 WP 0013 00 WP 0014 00 WP 0016 00 WP 0020 00 WP 0023 00 WP 0026 00 WP 0028 00

GENERAL

The table lists the common malfunctions, which you may find during the operation or maintenance of the rifle, or its components.

Table 1. Troubleshooting Procedures for M110 Semi-Automatic Sniper System (SASS), 7.62mm

SYMPTOM	MALFUNCTION	CORRECTIVE ACTION
Failure to Fire.	Firing pin left light indentation on the primer.	Replace. (WP 0016 00)
	Ambidextrous safety selector lever on SAFE.	Put in fire position. (WP 0013 00)
	Improper assembly of firing pin.	Ensure firing pin is properly assembled. (WP 0013 00)
	Too much oil in firing pin recess.	Remove excess oil. (WP 0016 00)
	Defective ammunition.	Remove and discard IAW local procedures. (WP 0023 00)
	Too much carbon on firing pin or in firing pin recess.	Remove and clean bolt / bolt carrier assembly. (WP 0016 00)
	Round not fully chambered.	Clear obstruction from chamber. Clean and lube chamber, bolt, cam pin and carrier. (WP 0008 00)
Failure to Unlock.	Dirty or burred bolt.	Clean bolt. (WP 0016 00)
	Carrier key clogged.	Use pipe cleaner to check / clear carrier key. (WP 0016 00).

SYMPTOM	MALFUNCTION	CORRECTIVE ACTION
Failure to Feed.	Dirty or corroded ammo.	Remove excess dirt / corrosion or replace ammunition. (WP 0023 00)
	Dirty magazine.	Clean magazine. (WP 0020 00)
	Defective magazine.	Replace magazine. (WP 0020 00)
	Action of buffer assembly is restricted.	Clean buffer and spring assembly. (WP 0020 00)
	Magazine not fully seated.	Tap on bottom of magazine or adjust magazine catch. (WP 0005 00)
Weapon Double Feeds.	Defective magazine.	Replace magazine. (WP 0020 00)
Failure to Chamber.	Dirty or corroded ammunition.	Replace ammunition. (WP 0023 00)
	Damaged ammunition.	Replace ammunition. (WP 0023 00)
	Carbon in chamber or on gas tube.	Clean chamber and gas tube. (WP 0014 00)
	Obstruction in chamber.	Clear chamber. (WP 0008 00)
Failure to Lock.	Dirt, corrosion, or carbon buildup in barrel or bolt locking lugs.	Clean barrel and bolt locking lugs. (WP 0016 00)

Table 1. Troubleshooting Procedures for M110 Semi-Automatic Sniper System (SASS), 7.62mm - Continued

SYMPTOM	MALFUNCTION	CORRECTIVE ACTION
	Dry / dirty cam pin or cam pin groove.	Clean and lube cam pin. (WP 0016 00)
Failure to Extract.	Frozen extractor.	Remove and clean extractor. (WP 0016 00)
	Broken extractor.	Remove and replace extractor. (WP 0016 00)
	Weak or broken extractor spring.	Replace spring. (WP 0016 00)
	Restricted buffer assembly.	Clean buffer assembly. (WP 0015 00)
	Restricted movement of bolt carrier group.	Remove, clean, and lube, before putting bolt back in, make sure gas tube fits into carrier key and that the carrier moves freely. (WP 0016 00)
	Dirty or corroded ammo.	Push out stuck cartridge with cleaning rod. (WP 0014 00)
	Cartridge / round jams in chamber.	Remove cartridge / round using one piece cleaning rod. Clean chamber. (WP 0013 00)

SYMPTOM	MALFUNCTION	CORRECTIVE ACTION
Short Recoil.	Missing or broken gas ring.	Replace gas rings. (WP 0016 00)
	Carbon or dirt in carrier key or on outside of gas tube.	Clean carrier key and gas tube. (WP 0016 00)
	Pipe cleaner stuck inside carrier key.	Remove pipe cleaner. (WP 0016 00)
	Gas tube bent.	Return to contractor. (WP 0014 00)
Bolt Fails to Lock After Last Round.	Dirty or corroded bolt latch.	Clean bolt latch. (WP 0016 00)
	Faulty magazine.	Replace magazine. (WP 0020 00)
	Bolt catch broken.	Return to field maintenance. (WP 0016 00)
Ambidextrous Safety Selector Lever Binds.	Ambidextrous safety selector lever needs lube.	Lubricate. If ambidextrous safety selector lever still binds. (WP 0015 00)
	Dirt or sand under trigger.	Clean trigger. (WP 0008 00)

END OF WORK PACKAGE

CHAPTER 4

MAINTENANCE INSTRUCTIONS

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

Always observe the **WARNINGS** and **CAUTIONS** appearing in your PMCS table. **WARNINGS** and **CAUTIONS** appear before applicable procedures. You must observe these **WARNINGS** and **CAUTIONS** to prevent serious injury to yourself and others or to prevent your equipment from being damaged.

DEFINITION OF THE FOLLOWING ALERTS THROUGHOUT THIS MANUAL:

WARNING – Identifies a clear danger to the person doing that procedure.

CAUTION – Identifies risk of damage to the equipment.

NOTE – Used to highlight essential procedures, conditions, statements, or convey important instructional data to the user.

EXPLANATION OF COLUMN ENTRIES

ITEM NUMBER Column. Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

INTERVAL Column. This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

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

PROCEDURE Column. This column gives the procedure you must do to check or service the item listed in the ITEM TO BE CHECKED OR SERVICED column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

NOT FULLY MISSION CAPABLE IF Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you do check/service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
INCLUDING LUBRICATION INSTRUCTIONS

INITIAL SETUP:

Tools and Special Tools
- One Piece Cleaning Rod (item 7, WP 0026 00)
- Otis Cleaning Kit (item 5, WP 0027 00)

Materials/Parts
- Bore Brush (item 6, WP 0028 00)
- Chamber Brush (item 7, WP 0028 00)
- RBC (item 9, WP 0028 00)
- CLP (item 10, WP 0028 00)
- LAW (item 12, WP 0028 00)
- LSA (item 13, WP 0028 00)

Materials/Parts - Continued
- Wiping Rag, (item 15, WP 0028 00)
- Swab (item 16, WP 0028 00)

References:
- WP 0010 00
- WP 0013 00
- WP 0023 00
- WP 0025 00
- WP 0026 00
- WP 0027 00
- WP 0028 00

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Before starting PMCS, clear the rifle. Inspect the chamber, receiver areas, and magazines to ensure they are empty. DO NOT allow live ammunition near work or maintenance areas.

If your equipment fails PMCS, refer to troubleshooting procedures in WP 0010 00.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
1.	B / A	Magazine	Magazine slips easily into the magazine well and locks in place.	Magazine is distorted or is hard to seat, or doesn't lock in magazine well.
			Magazine follower has spring tension and moves easily inside of magazine.	Magazine follower is stuck or has weak spring tension.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
2.	B / A	Upper Receiver and Barrel Assembly	Inspect Upper Receiver, Barrel and Rail Adapter System (RAS) for bulges, cracks, bends, burrs, obstructions or pits in chamber / bore. Inspect ejection port for burrs and deformities. Inspect ejection port cover for bends, cracks and burrs. Open and close ejection port cover to make sure ejection cover spring is not broken or weak. Inspect cover pin for bends and cracks.	Receiver, barrel and RAS is bent, cracked, burred or bulged. Obstruction or pits are in chamber / bore. Burrs, deformities, bends, or cracks that interferes with function.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM - Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
3.	B / A	Deployment Kit	Go to WP 0026 00 and check to ensure all deployment equipment is accounted for.	If items are missing.
4.	B / A	Bolt Carrier Assembly	Inspect bolt carrier for burrs, cracks, bends, and bulges.	Bolt carrier is burred, cracked, bent or bulged.
			Check carrier key for cracks, burrs and hole roundness, also check carrier key screws for tightness.	Carrier key is cracked, burred; roundness of hole. Carrier key screws are loose or missing.
			Check bolt cam pin for burrs and cracks.	Bolt cam pin is burred, cracked, or missing.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
4. Cont.	B / A	Bolt Carrier Assembly (Cont)	Check firing pin for straightness, burrs, breaks and ensure tip is completely round. Also check firing pin retaining pin for burrs, breaks, cracks and bends.	Firing pin is broken, bent, burred; tip of firing pin has any flat surfaces. Retaining pin is broken, cracked, bent or burred.
5.	B / A	Bolt Assembly	Check bolt for cracks and burrs.	Bolt is cracked or burred.
			Check bolt face for pitting and ensure firing pin hole is round not elongated.	Bolt face is pitted; hole is elongated.
			Inspect bolt lugs for breaks, cracks and burrs.	Bolt lugs are broken, cracked or burred.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM - Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
5. Cont.	B / A	Bolt Assembly (Cont)	Check gas rings for cracks or burrs. Inspect extractor for cracks and weak extractor spring.	Gas rings are broken, cracked.
			Check for chipped/broken extractor claw, weak extractor spring.	Extractor claw is chipped or broken. Extractor spring is broken, weak or missing.
			Check ejector for breaks or cracks and also check for weak ejector spring.	Ejector is cracked or broken. Ejector spring is weak, broken or missing.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
6.	B / A	Charging Handle Assembly	Inspect charging handle for bends, breaks and cracks.	Charging handle is bent, cracked or broken.
			Check charging handle latch to ensure positive lock on upper receiver.	Charging handle latch does not positively lock in upper receiver.
			Check latch spring for weakness.	Latch spring is weak, broken or missing.
7.	B / A	Lower Receiver and Buttstock Assembly	Check lower receiver and, buttstock for breaks, cracks, bends, bulges or missing parts.	Receiver and buttstock is bent, cracked, broken, bulged or missing parts.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM - Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
7. Cont.	B / A	Lower Receiver and Buttstock Assembly (Cont)	Inspect rear take down pin and front pivot pin for damage.	Pin is broken, missing, or will not stay retained in receiver.
			Check magazine well for dents, cracks and deformity.	Magazine well is cracked, bulged or dented.
			Check for function of bolt stop and magazine release.	Bolt stop allows bolt to go forward after last round is fired. Magazine release will not retain/release magazine from magazine well.
				Bolt stop is locked in the engaged position and will not release bolt.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
7. Cont.	B / A	Lower Receiver and Buttstock Assembly (Cont)	Inspect trigger guard for bends, cracks and hinged movement.	Trigger guard is bent, broken, or missing.
			Inspect trigger assembly for broken, cracked, bends and movement.	Send to contractor for repair/replace.
			Check ambidextrous safety selector lever for cracks, burrs and function.	Ambidextrous safety selector lever is cracked, burred; allow weapon to fire while in "S" safe position.
			Check pistol grip for burrs, cuts, cracks.	Grips are burred, broken, gouged, cracked or missing.
			Check buffer retainer and spring for cracks, breaks, and weakness.	Buffer retainer and spring are cracked or broken.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM - Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
8.	A / B	Adjustible Buttstock Assembly	Check, buttstock for breaks, cracks and burrs.	Buttstock is broken, cracked, or burred.
			Check buttplate screw for burrs and cracks.	Buttplate screw is missing or broken.
			Check buttplate for cracks, breaks and burrs.	Buttplate is loose; cracked, broken, or burred.
			Check sling swivel stud for cracks or damage.	Swivel stud is cracked, broken, or missing.
			Check adjustable buttplate for positive retention and for full range of travel (in and out).	Adjustable buttplate does not have positive retention; full range of travel.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
9.	B / A	Buffer Assembly and Action Spring	Check buffer assembly for bends, cracks, and burrs.	Buffer is bent, cracked, or burred.
			Check action spring for weakness.	Action spring is weak, bent, or broken.
10.	B / A	Day Optic Scope	Check day optic scope body for bends and cracks.	Scope is bent, dented, or cracked.
			Check scope rings for burrs, cracks and tightness.	Rings are loose, burred, or cracked.
			Check scope mount for burrs, cracks and tightness.	Scope mount is loose, burred, or cracked.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM - Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
10. Cont.	B / A	Day Optic Scope (Cont)	Check lens for cracks, clarity and optic cover. **NOTE** You will need to look through scope to identify reticle movement.	Lens are cracked; condensation has formed inside scope missing lens covers.
			Check elevation / windage turret for positive click adjustments with reticle movement.	Elevation / windage turret does not have positive click adjustments.
			Check battery cap on turret illumination.	Battery cap is dented, cracked, or missing.
			Check for condensation on internal optics.	If condensation is evident on inside of optical lenses.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
10. Cont.	B / A	Day Optic Scope (Cont)	Check function of intensity of illumination of reticle (battery operational).	Reticle does not fully illuminate (dim light); battery is weak.
			NOTE	
11.	B / A	Back-Up Iron Sight (BUIS)	Day Optic Scope must be removed to check rear sight.	
			Check both front and rear sights for chips, cracks, breaks and function (movement with positive click adjustment), or missing parts.	Sight(s) are chipped, cracked, or broken. Sight(s) do not have positive click adjustment or missing parts.
12.	B / A	Sound Suppressor	Check quick detach (QD) sound suppressor for bends, cracks, or bulges.	Sound Suppressor is bent, cracked, bulged.

TABLE 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM - Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
12. Cont.	B / A	Sound Suppressor (Cont)	Check muzzle end for strike marks or other abnormalities.	Muzzle end is gouged, burred; shows signs of guilding metal.
			Check QD latch for movement and locking ability and positive retention.	Latch is bent, broken; will not retain suppressor to barrel.
13.	B / A	Bipod	Check bipod for bends, breaks, and for spring weakness on legs.	Bipod legs are bent, broken, missing; springs are weak, broken or missing.

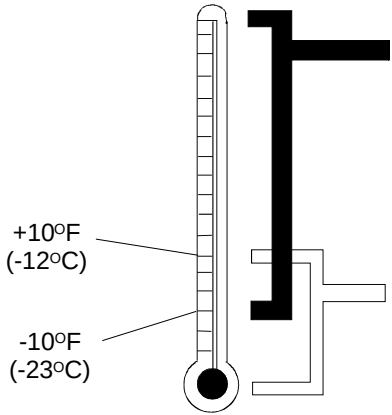
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
13. Cont	B / A	Bipod (Cont)	Ensure push button spring drive extends and retracts legs.	Button spring does not retain leg(s) in extended/retracted position.
			Check bipod for tightness to bipod adapter.	Bipod adapter is loose.
14.	B / A	Function Check	Perform function check for maintenance.	WP 0022 00

LUBRICATION INSTRUCTIONS

Under all but the coldest arctic conditions, LSA and CLP are the lubricants to use on your rifle. Remember to remove excessive oil from the bore before firing.

NOTE

Lubrication instructions are mandatory. DO NOT mix lubricants on the same weapon. The weapon must be thoroughly cleaned during change from one lubricant to another. Cleaning solvent (available to field maintenance) is recommended for cleaning during change from one lubricant to another. Only lubricants and cleaners specified in this manual are authorized for use on this weapon.



CLP - Cleaner, lubricant and preservative

LSA - Weapons lubricating oil, semi-fluid.

Between 10 degrees F (-12 degrees C) and -10 degrees F (-23 degrees C) use CLP, LSA, or LAW. Below -10 degrees F (-23 degrees C) use only LAW.

LAW - Weapons lubricating oil, arctic.

Lightly lube - A film of oil barely visible to the eye.

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Be sure to clear your weapon before disassembling, cleaning, inspecting, transporting, or storing.

Clean powder-fouled parts, except the buffer assembly, with a wiping rag, dampened with RBC or CLP.

Wipe dry and lube as required. Inspect and run a lightly oiled swab through the bore and chamber.

If your M110 rifle is not used, it still needs complete cleaning and lubing at least every 90 days. (Unusual conditions could shorten this interval.)

External Surfaces

Put LSA or CLP on a clean swab and generously lubricate:

Bolt - locking lugs
Bolt Carrier - receiver bearing surfaces
Receiver - rails that bolt carrier rides on

All Other Areas

Lightly lubricate - including bore.

Before Firing

1. Using a clean wiping rag, wipe bore dry.

2. Ensure the weapon is properly lubricated.

3. After exposure to water, make sure the rifle is dry before lubricating. Disassemble, clean, lightly oil and assemble as soon as possible.

4. In extreme cold, perform the following steps:

a. When operating rifle in extremely cold climate, clean and lubricate rifle inside at room temperature if possible.

b. Apply a light coat of LAW to all functional parts.

c. To prevent freezing, keep the rifle covered when moving from a warm to a cold area. This will allow gradual cooling.

d. Always keep the rifle dry.

e. Keep ammunition dry; moisture will cause malfunction. DO NOT lubricate ammunition.

f. Always keep snow out of the bore of the barrel. If snow should get into the bore, clean the bore before firing, using a swab and one piece cleaning rod, and / or Otis Cleaning Kit.

5. In hot dry climates, perform the following steps:

NOTE

Dust and sand can get into rifle and cause malfunctions and excessive wear on component contact surfaces during firing.

a. Keep the rifle covered when possible.

b. Use CLP or LSA sparingly.

6. For heavy rain and fording operations - all climates perform the following steps:

a. Perform maintenance in accordance with cleaning procedures and apply a thin coat of CLP and LSA. DO NOT lubricate ammunition.

b. Always attempt to keep rifle dry.

c. Always drain any water from barrel prior to firing. Dry the bore with a swab and cleaning rod.

7. For hot, wet, climates, perform the following steps:

a. Perform maintenance more frequently. Inspect hidden surfaces for corrosion. If corrosion is found, clean and lubricate with CLP or LSA.

b. To help prevent corrosion, remove handprints with wiping rag. Dry off and then lubricate the rifle.

c. After firing, field strip your rifle (WP 0013 00). Clean bore and chamber with one piece cleaning rod, chamber brush, bore brush, and swab soaked with RBC or CLP until a clean swab can be run through the bore without getting wet.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
FIELD STRIPPING

INTRODUCTION

The M110 is field stripped into 8 major components: (1) upper receiver assembly and barrel assembly; (2) lower receiver assembly and adjustable buttstock assembly; (3) bolt and carrier assembly; (4) day optic scope; (5) bipod; (6) sound suppressor; (7) magazine; and (8) sling.

NOTE

The day optic scope and the bipod assembly will not be removed during field stripping unless routine maintenance / replacement is required.

DISASSEMBLY - FIELD STRIPPING

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Ensure that the weapon is unloaded and the chamber is clear. Be sure there are no obstructions in the bore. Place weapon on SAFE before performing these field stripping procedures.

If magazine is in weapon, remove before clearing.

1. Clear your weapon. Refer to WP 0005 00.

2. Remove the sling.

UPPER RECEIVER AND BARREL ASSEMBLY AND LOWER RECEIVER AND ADJUSTABLE BUTTSTOCK ASSEMBLY

CAUTION

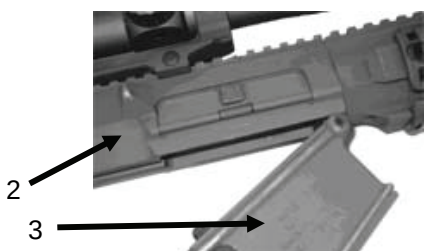
Only use hand pressure to disengage the front pivot pin (4) and rear takedown pin (1). Force other than hand pressure may cause damage to the weapon and replacement of the weapon would be required.

NOTE

Ensure that the bolt and carrier assembly are in the forward position prior to disassembly.

1. Push rear takedown pin (1) (left to right) until flush and pull pin as far as it will go.

2. Pivot upper receiver and barrel assembly (2) from lower receiver and adjustable buttstock assembly (3).

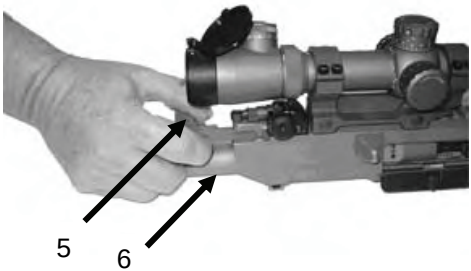


DISASSEMBLY - FIELD STRIPPING - Continued

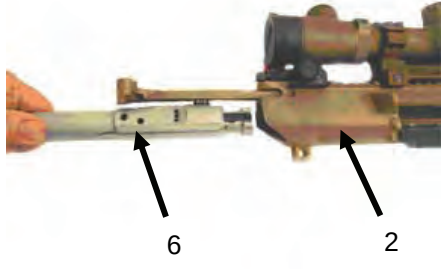
UPPER RECEIVER AND BARREL ASSEMBLY AND LOWER RECEIVER AND ADJUSTABLE BUTTSTOCK ASSEMBLY - Continued

3. Push lower receiver front pivot pin (4) flush. Pull front pivot pin (4) (left to right) as far as it will go; separate upper receiver and barrel assembly (2) from lower receiver and adjustable buttstock assembly (3).

BOLT AND CARRIER ASSEMBLY

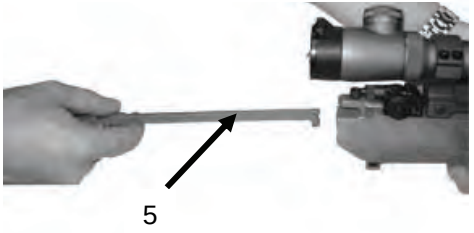


1. Pull back on charging handle (5) to extract bolt and carrier assembly (6).

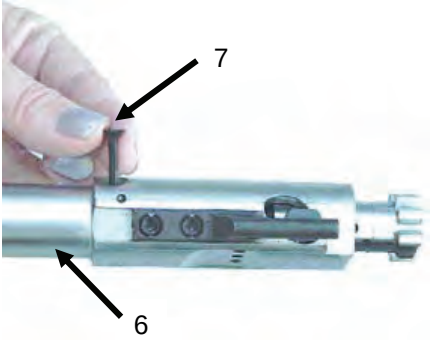


2. Remove bolt and carrier assembly (6) from upper receiver and barrel assembly (2).

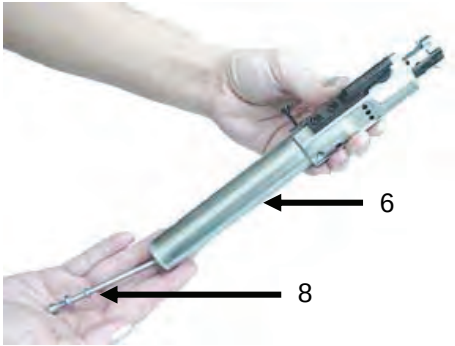
BOLT AND CARRIER ASSEMBLY - Continued



3. Remove charging handle (5).



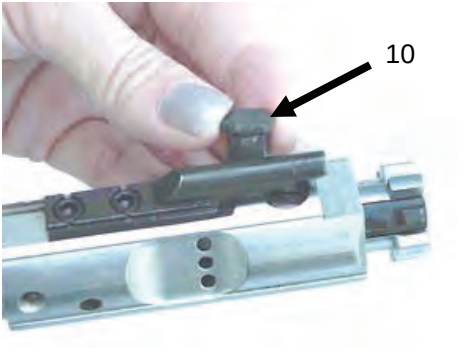
4. Retract firing pin retaining pin (7) from bolt and carrier assembly (6).



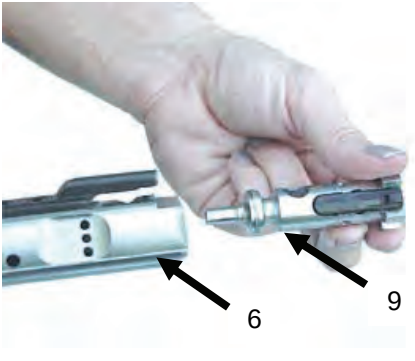
5. Drop firing pin (8) out of rear of bolt and carrier assembly (6).

6. Push bolt assembly (9) inward to rear locked position.

BOLT AND CARRIER ASSEMBLY - Continued

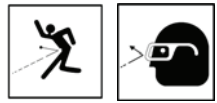


7. Remove bolt cam pin (10).



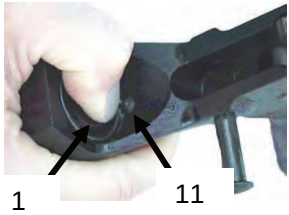
8. Remove bolt assembly (9) from bolt and carrier assembly (6).

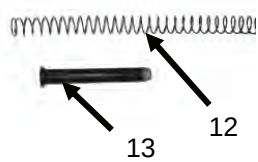
WARNING



SPRING LOADED COMPONENTS

Buffer (13) is under spring tension. To avoid injury to eyes, use care when removing or installing spring loaded parts.





1. Depress buffer (13), press in buffer detent (11) and release buffer (13) and buffer (12).
2. Remove buffer (13) and action spring (12).
3. Separate action spring (12) from buffer (13).

DISASSEMBLY - FIELD STRIPPING - Continued

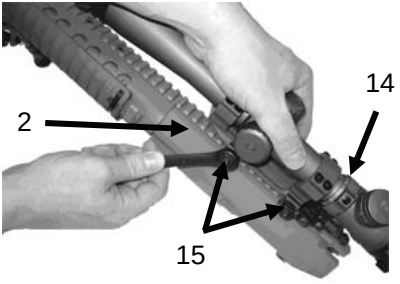
DAY OPTIC SCOPE

NOTE

Never use T-Handle Torque Wrench (item 2, WP 0026) to loosen the 1/2 inch nut on sight base. Day optic scope should never be removed during field stripping unless routine maintenance / replacement is required.

There are multiple locations to accommodate eye relief and sight ring location. Once you select a pair, they should be re-used to retain zero if the sight is subsequently removed and then reattached again.

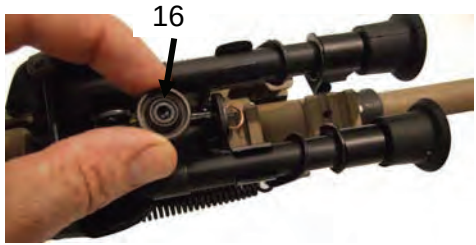
1. While holding the day optic scope (14) firmly against upper receiver and barrel assembly (2), remove the day optic scope (14), using the 1/2 inch open end box wrench (item 4, WP 0026 00) to loosen (counterclockwise) the front and then the rear mounting ring nuts (15).



2. Holding the rifle level, rotate day optic scope (14) to one side to disengage from upper receiver and barrel assembly (2).

BIPOD

1. Loosen bipod thumbscrew (16) counterclockwise. If unable to loosen with finger pressure, it may be necessary to use a 5/32”allen wrench.



2. Squeeze side plates (18) together to remove the bipod assembly (17). Lift bipod assembly (17) away from lower rail.

SOUND SUPPRESSOR

WARNING

HOT AREA

After use, the sound suppressor will be extremely hot. Protect your hands when removing the hot sound suppressor.

NOTE

Firing the weapon with the suppressor mounted will cause the sniper rifle to become dirty more rapidly.

When using the suppressor, the sniper rifle requires cleaning (approximately every 50 rounds) more frequently. This is due to the accelerated carbon build-up. Diminished weapon performance may occur more rapidly in extreme hot / cold temperature conditions.

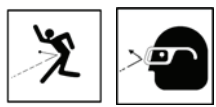
The suppressor is a dry suppressor and should never be fired wet.

Firing the sniper rifle with the suppressor attached has no effect on the copper fouling in the barrel.

1. Pull quick detatch (QD) locking latch (19) upward from rear of weapon.
2. Turn sound suppressor (20) clockwise quarter of a turn, and pull away from the barrel.

MAGAZINE

WARNING



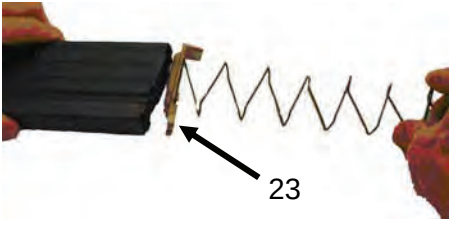
SPRING LOADED COMPONENTS

Spring (22) is under spring tension. To avoid injury to eyes, use care when removing or installing spring loaded parts.

1. Push up on the rear of bottom of the magazine and slide left to right on the magazine bottom plate (21).
2. Remove magazine bottom plate (21).

MAGAZINE - Continued

3. Remove magazine spring (22) and follower (23).

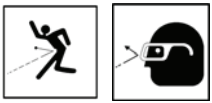


This completes disassembly field stripping.

REASSEMBLY - FIELD STRIPPING

MAGAZINE

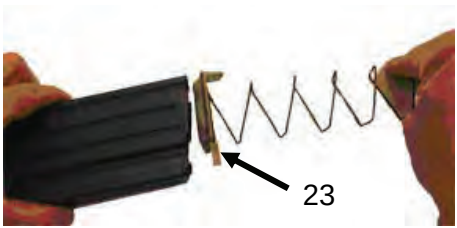
WARNING

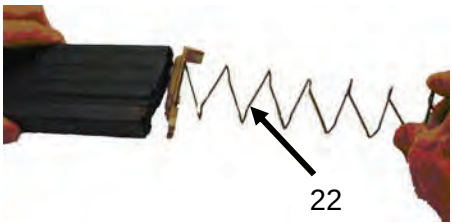


SPRING LOADED COMPONENTS

Spring (22) is under spring tension. To avoid injury to eyes, use care when removing or installing spring loaded parts.

1. Place follower (23) and spring (22) in magazine.





REASSEMBLY - FIELD STRIPPING - Continued

MAGAZINE - Continued

2. Depress spring (22) and reinsert magazine bottom plate (21).

SOUND SUPPRESSOR

WARNING

HOT AREA

After use, the sound suppressor will be extremely hot. Protect your hands when removing the hot sound suppressor.

NOTE

Firing the weapon with the suppressor mounted will cause the sniper rifle to become dirty more rapidly.

The sniper rifle requires cleaning approximately every 50 rounds when fired with the suppressor attached, or as soon as you are able.

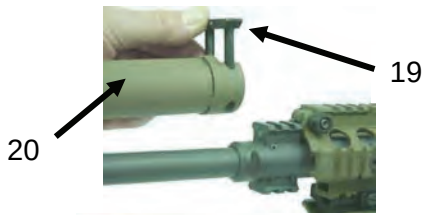
NOTE

The sound suppressor is a dry suppressor and should never be fired wet.

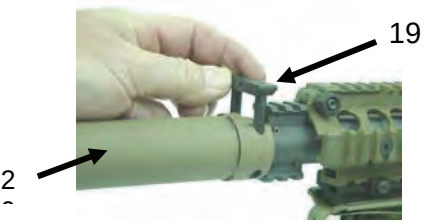
Firing the sniper rifle with the sound suppressor attached has no effect on the copper fouling in the barrel.

Install sound suppressor only for mission need.

1. Fully extend the quick detatch (QD) locking latch (19) on the sound suppressor (20).



2. Slide sound suppressor (20) on barrel holding the QD locking latch (19) up.



SOUND SUPPRESSOR - Continued

3. Align QD locking latch (19) with slots in gas block (21) by turning sound suppressor (20) counter-clockwise until it stops.

4. Push down on QD locking latch (19) and lock sound suppressor (20) on to the gas block (21.

BIPOD

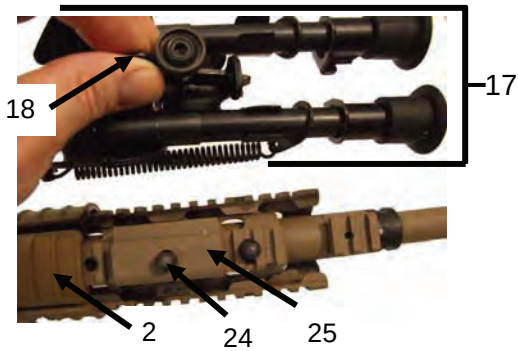
1. On the bipod assembly (17), squeeze side plates (18) together.

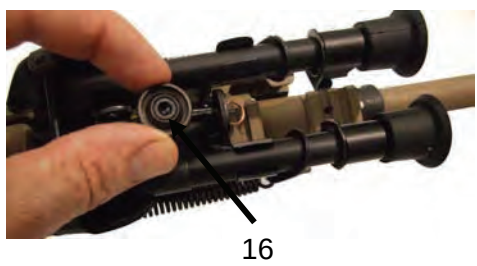
2. While squeezing side plates (18) together, engage sideplates (18) with mounting adapter swivel stud (24) on the bottom of the upper receiver and barrel assembly (2).

3. Release sideplates (18).

4. Handtighten bipod thumbscrew (16) clockwise to secure sideplates (18) onto mounting adapter (25).

5. Usina a 5/32" allen wrench from the deployment kit, tighten bipod thumbscrew (16) firmly, but no more than 1/4 turn - 1/3 turn past "finger tight".





DAY OPTIC SCOPE

NOTE

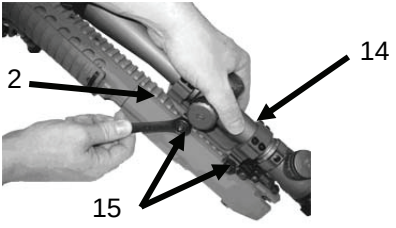
Never use T-Handle Torque Wrench (item 2, WP 0026) to loosen the 1/2 inch nut on sight base. Day optic scope should never be removed during field stripping unless routine maintenance / replacement is required.

There are multiple locations to accommodate eye relief and sight ring location. Once you select a pair, they should be re-used to retain zero if the sight is subsequently removed and then reattached again.

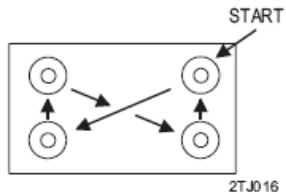
1. Before mounting the day optic scope (14), lubricate the threads of each mounting ring nut(s) (15) with one drop of CLP (item 10, WP 0028 00). Rotate mounting ring nuts (15) to evenly distribute lubricant. Wipe off any excess CLP. Leave mounting ring nuts (15) fully loosened (turned counter clock-wise) 2 or 3 turns on their shafts.

2. Holding the rifle level, place scope base and day optic scope (14) on desired slotted area of upper receiver and barrel assembly (2) rail.

3. Ensure that the sight base is mounted flush to the upper receiver and barrel assembly (2) rail.



4. When satisfied with eye relief, tighten the ring screws evenly and securely. Start in one corner and tighten a small amount, then tighten the ring screw in the opposite corner, then the ring screw above/below then across corner. Continue the pattern until all ring screws are tightened. This ensures an even tightening and prevents twisting of the day optic scope (14).

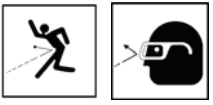


5. Tighten mount base nuts with 1/2 inch open end box wrench (item 4, WP 0026 00) until snug. Using the T handle torque wrench (item 2, WP 0026 00), torque front and rear mounting ring nuts (15) alternating. Repeat torque of front and rear mounting ring nuts (15) one additional time.

6. Before firing, re-torque mounting ring nuts (15) and tighten ring screws to ensure zero repeatability.

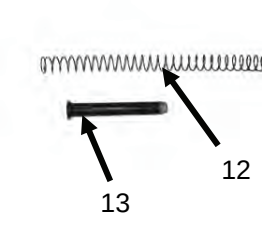
LOWER RECEIVER AND ADJUSTABLE BUTTSTOCK ASSEMBLY

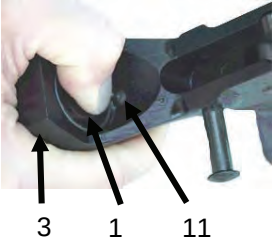
WARNING



SPRING LOADED COMPONENTS

Buffer (13) is under spring tension. To avoid injury to eyes, use care when removing or installing spring loaded parts.





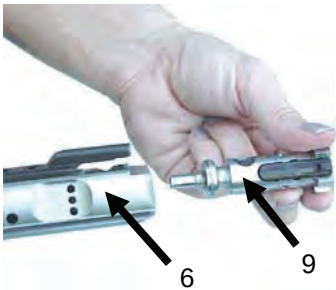
1. Assemble action spring (12) and buffer (13).

2. Make sure hammer is cocked. Insert assembled action spring (12) and buffer (13) into lower receiver and adjustable buttstock assembly (3) extension. Buffer detent (11) may need to be depressed as buffer (13) is fully inserted.

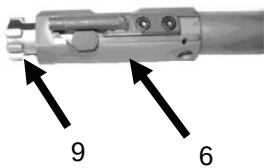
BOLT AND CARRIER ASSEMBLY

CAUTION

DO NOT slam the bolt assembly into bolt carrier assembly with the palm of your hand! Ease the bolt assembly in gently.



1. Reinsert the bolt assembly (9) into the bolt carrier assembly (6).



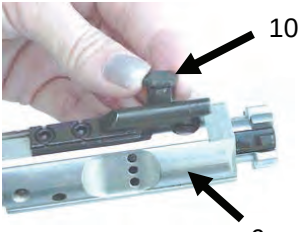
2. Rotate bolt assembly (9) to align cam pin hole at rear of cam slot of bolt carrier assembly (6). Ensure extractor is facing to the right.

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Cam pin (10) must be installed in bolt carrier assembly (6); if not, rifle can still fire and will explode.

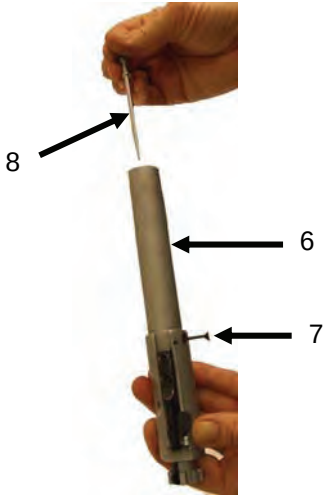
3. Insert cam pin (10) with firing pin hole aligned front to rear.

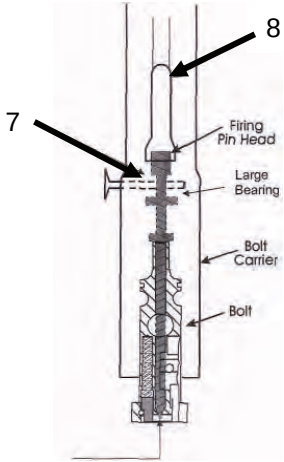


NOTE

You may have to use a section of the cleaning rod to push firing pin to its full forward position (only about 1/8 inch of the firing pin head is visible when fully forward).

Ensure that the firing pin retaining pin locks the firing pin into place.





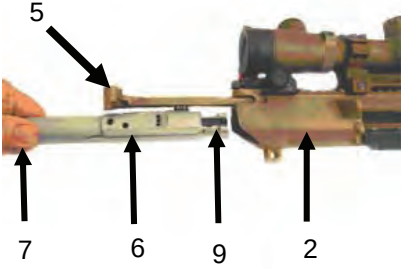
4. Hold firing pin retaining pin (7) to its full open stop. Hold bolt carrier assembly (6) downwards in palm of hand and drop firing pin (8) into bolt carrier assembly.

5. With firing pin (8) fully forward, push in on firing pin retaining pin (7). Firing pin retaining pin (7) should be flush or below the surface of the bolt carrier assembly (6) body.

BOLT AND CARRIER ASSEMBLY – Continued

6. Pull bolt assembly (9) to its extended (unlocked) position. Hold rear of bolt carrier assembly (6) down against open palm, place thumb over the firing pin retaining pin (7), and shake bolt carrier assembly (6). Firing pin (8) should not fall out if firing pin retaining pin (7) and firing pin (8) are properly installed (you should also be able to hear firing pin (8) moving back and forth).

7. Insert charging handle (5) into upper receiver and barrel assembly (2). Ensure charging handle (5) lugs enter their grooves in the rear of upper receiver and barrel assembly (2) through the clearance slots near the rear of the upper receiver and barrel assembly (2). Position the charging handle (2) by sliding it in approximately three inches from its full forward position.



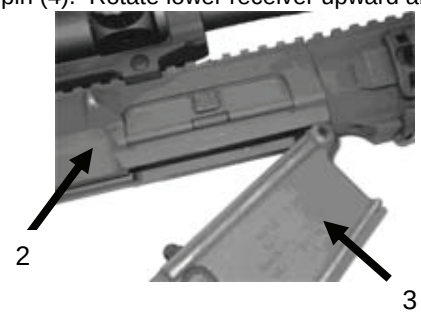
8. Position the carrier key of the bolt and carrier assembly in groove of charging handle (5). Push forward on bolt carrier assembly (6) and charging handle (5) until they are fully forward. You should hear a click as charging handle (5) locks in position.

UPPER RECEIVER AND BARREL ASSEMBLY AND LOWER RECEIVER AND BUTTSTOCK ASSEMBLY

NOTE

Make sure bolt assembly and bolt carrier assembly are all the way forward.

Make sure hammer is cocked and ambidextrous safety selector lever (24) is on SAFE. Position upper receiver and barrel assembly (2) and lower receiver and adjustable buttstock assembly (3) so that the front pivot pin (4) holes are aligned. Push in front pivot pin (4). Rotate lower receiver upward and push in rear take down pin (1).



END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NO NSN AVAILABLE - PN 24727)

MAINTENANCE OF UPPER RECEIVER AND BARREL ASSEMBLY

This task covers: a. Cleaning b. Inspection c. Replace d. Removal

INITIAL SETUP:

Tools and Special Tools
- Deployment Kit (item 1, WP 0026 00)
- One Piece Cleaning Rod (item 7 WP 0026 00)
- Rod Tip or Jag (item 8, WP 0026 00)
- Bore Rod Guide Assembly (item 9, WP 0026 00)
- Cleaning Kit (item 5, WP 0027 00)
- Brass Patch Holder (item 6, WP 0027 00)
- Handle and Rod Adapter (item 8, WP 0027 00)
- Rod Bore Brush Adapter (item 10,WP002700)
- Bore Brush (item 6, WP 0028 00)
- Small Arms Tool Kit, NSN 5180-01-506-8287

Materials/Parts
- RBC (item 9, WP 0028 00)
- CLP (item 10, WP 0028 00)
- LAW (item 12, WP 0028 00)
- LSA (item13, WP 0028 00)
- Wiping Rag (item 15, WP 0028 00)
- Swab (item 16, WP 0028 00)
- Pipe Cleaner (item 17, WP 0028 00)

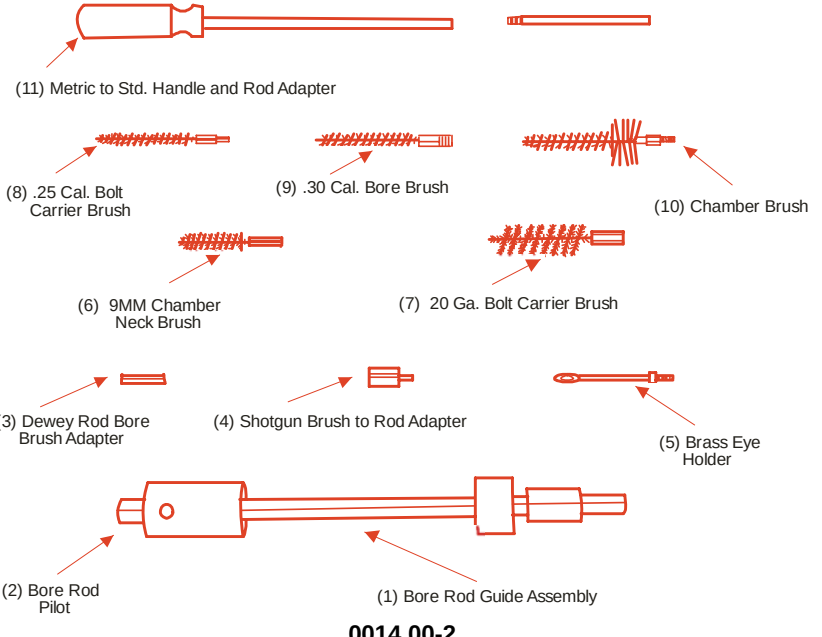
Equipment Condition
- Weapon Field Stripped (WP 0013 00)

CLEANING

NOTE

Wherever the term CLP or the words lube or lubricants are cited in this TM, it is to be interpreted to mean that CLP, LSA, or LAW can be utilized as applicable. DO NOT mix lubricants on the same weapon. The weapon must be thoroughly cleaned during change from one lubricant to another. RBC or CLP is recommended for cleaning during change from one lubricant to another.

CLEANING – Continued



CAUTION

Close lens caps of the day optic scope to protect the lens surfaces from bore cleaning solvents.

NOTE

Since the chamber is much larger in diameter than the bore, you may need to double-up the cleaning patches when wiping the chamber. Two cleaning patches will usually fit the brass eye holder (5) when cleaning the chamber.

Cleaning the chamber requires removal of the bore rod guide assembly (1) from the upper receiver.

1. Attach the brass eye holder (5) to the handle and rod adapter (11). Double-up on patches and apply a light coat of CLP to the patches. Swab out the chamber with wet patches.

2. Attach the chamber brush (10) to the handle and rod adapter (11). Insert into chamber and turn clockwise in chamber to remove carbon. Turning clockwise will prevent the chamber brush (10) from unscrewing from the handle and rod adapter (11).

CAUTION

Remember to dry bore and chamber to remove CLP or oil.

3. Remove chamber brush (10) from the handle and rod adapter (11), and install the brass eye holder (5). Double-up on patches and wipe chamber dry.

NOTE

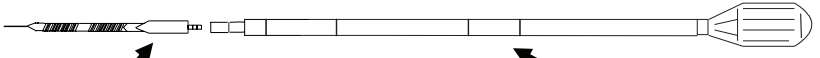
After each use of any cleaning brush, wipe or blot the brush clean with a dry clean cloth. Do not dip bore or chamber brush (10) into solvent or CLP bottle because the brush will contaminate it.

As the patch or bore brush enters the bore rod guide assembly (1), slide the bore rod pilot (2) into the rear opening of the bore rod guide assembly (1) to provide additional support to the bore rod.

Always clean the bore from the chamber end to the muzzle end with the bore rod guide assembly (1) and the bore rod pilot (2) when using the one piece cleaning rod (12).

CAUTION

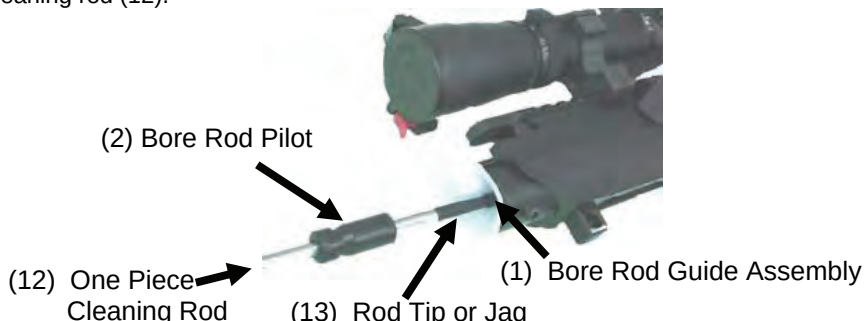
Hold the one piece cleaning rod (12) by the handle only. Failure to do so might damage the rod.



(13) Dewey Bore Jag or Tip

(12) One Piece Cleaning Rod

1. To clean the barrel, install bore rod guide assembly (1) in receiver and slide the bore rod pilot (2) over the one piece cleaning rod (12) before inserting the rod into the bore rod guide assembly (1). Screw the nylon bore rod tip or jag (13) into the end of the one piece cleaning rod (12).



2. Using the one piece cleaning rod (12), swab out the bore with a cleaning patch moistened with CLP or RBC completely through the bore with the rod. Remove the patch as it clears the muzzle and then pull the one piece cleaning rod (12) out from the rear. Remove the rod tip or jag (13) and cleaning patch, then pull the one piece cleaning rod (12) from the rear. Wipe the one piece cleaning rod (12) dry. Repeat this process with clean wet patches through the bore at least four times.

CLEANING - Continued

3. Replace rod tip or jag (13) with a bore brush (9) /bore brush adapter (3), and push this through the bore and push this thru the bore and repeat this 8 or 10 times. Remove bore brush (9) and re-attach rod tip or jag (13).

NOTE

Roll bore brush between layers of a clean rag after each use to remove carbon residue from brush bristles.

4. Dry bore thoroughly. This requires 3 or 4 clean/dry patches. Repeat this step with a dry patch 3 or 4 times until patch appears clean.

CAUTION

Remember to dry the bore and chamber to remove CLP or oil.

5. When discoloration is not indicated on the patches, continue with the following steps.

6. To keep the bore from rusting, dry the bore and chamber thoroughly. This requires 3 or 4 clean/dry patches. Wipe the bore rod guide assembly (1) clean and dry to include its bore rod pilot (2).

7. When firing weapon fully suppressed frequency of cleaning should be increased.

INSPECTION

1. Make sure ejection port cover has spring tension.

2. Inspect for dents and burrs on upper receiver rails.

NOTE

Check flash Suppressor for shinny spots (metal to metal wear).

3. Inspect flash suppressor for looseness.

4. Inspect barrel for cracks, bends, or burrs.

5. Inspect charging handle for cracks, bends, breaks, or missing parts.

6. Inspect gas tube for damage or obstruction in the upper receiver (ex: pipe cleaners, etc.). If obstruction can be removed easily, operator may remove it. If not, notify contractor.

7. Inspect barrel for obstruction.

REPLACE STUD AND NUT ASSEMBLY

1. If upper receiver and barrel assembly are defective, notify contractor.

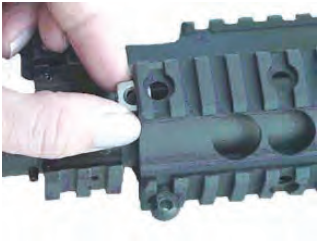
NOTE

If stud and nut assembly is lost, broken, or missing, replace from the deployment kit.

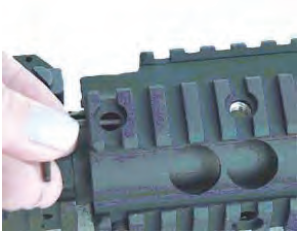
Ensure the o-ring is installed on the stud.

2. Installation procedures of the sling swivel stud assemblies to the 'free floating" rail adapter system (RAS) and M110 URX Forends, is as follows:

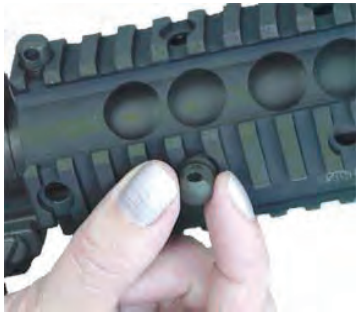
a. Stud and Nut Assembly.



b. Slide nut into channel.



c. Slide nut to desired hole.



d. Screw stud into nut.

e. Tighten with allen wrench.

REMOVAL OF RAIL COVERS

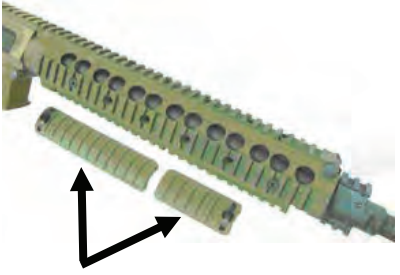
NOTE

To remove bottom rail cover you must remove bipod mounting adapter and stud and nut assembly (Reference WP 0013 00).

1. Using a flathead screwdriver, remove bipod mounting adapter.

2. Rail covers, side and bottom, are quickly attached and detached from the rail adapter. A retaining clip at one end of each rail cover automatically engages cutouts positioned at either end of the rail sections. To slide a rail cover beyond a cutout, or to remove it, slide it in the desired direction while applying thumb pressure to the retaining clip.

3. Remove rail covers.



END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NO NSN AVAILABLE - PN: 24726)
MAINTENANCE OF LOWER RECEIVER AND ADJUSTABLE BUTTSTOCK ASSEMBLY

This task covers: a. Cleaning b. Inspection c. Replace

INITIAL SETUP:

Tools and Special Tools

T Handle Torque Wrench (item 2, WP 0026 00)
1/2" Open End Box Wrench (item 4, WP 0026 00)
Rod Bore Brush Adapter (item 10, WP 0027 00)

Materials/Parts

Brush (item 7, WP 0028 00)
CLP (item 10, WP 0028 00)

Materials/Parts

Wiping Rag (item 15, WP 0028 00)
Swab (item 16, WP 0028 00)
Pipe Cleaners (item 17, WP 0028 00)

Equipment Condition

Weapon field stripped (WP 0013 00)

References

WP 0013 00
WP 0014 00
WP 0026 00
WP 0027 00
WP 0028 00

CLEANING

CAUTION

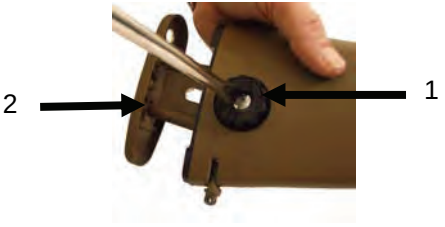
DO NOT use wire brush or any type of abrasive material to clean aluminum surfaces (the wire brush is provided in the cleaning kit – IT IS NOT TO BE USED!).

CLEANING - Continued

1. Use brush wrapped with pieces of rag, pipe cleaners, or bore rod with cleaning patches to wipe interior of lower receiver (trigger area) clean.

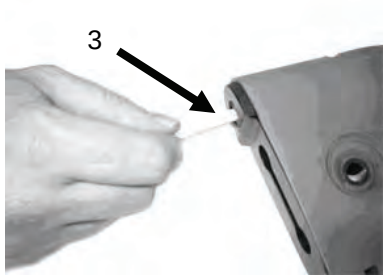
2. Use a swab dipped in CLP and cleaning brush to clean powder fouling, corrosion, and dirt from outside parts of lower receiver and extension assembly.

3. Extend adjustable buttstock by loosening the adjustable buttstock knob (1). Wipe with clean cloth and lightly lube adjustable buttplate extension (2).



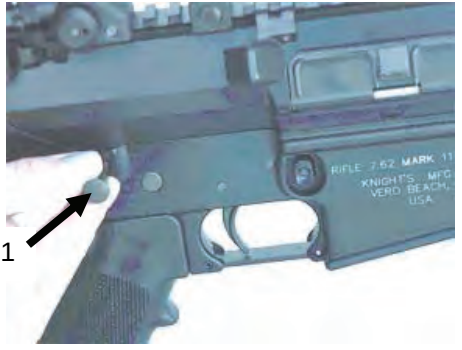
0015 00-2

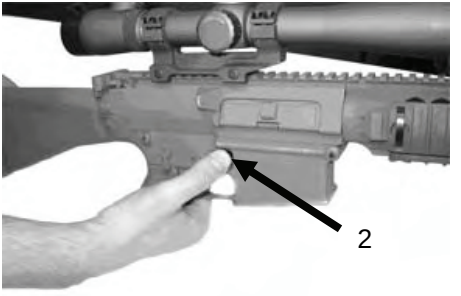
4. Use a pipe cleaner to clean the buttstock drain hole in the machine screw, and ensure the drain hole (3) is clean.



5. Clean buffer assembly, buffer spring, and inside lower receiver and buffer tube with a swab dipped in CLP. Wipe dry.

INSPECTION





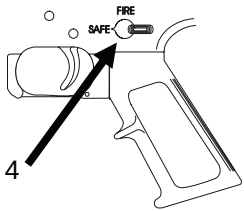
1. Inspect rear takedown pin (1) for proper retention. If rear takedown pin can be completely removed, notify maintenance for repair.

2. Inspect magazine catch button (2) for spring tension.

3. Insert empty magazine; make sure it locks. Remove empty magazine to ensure it removes correctly.

4. Inspect bolt release (3) for bent or broken parts and spring tension.

5. Inspect safety selector lever (4) for bent or broken parts and proper function.



6. Inspect lower receiver and buttstock assembly for cracks, bulges, or damage.

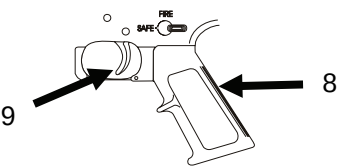
INSPECTION - Continued

6. Inspect adjustable buttstock assembly for cracks or damage. Check for full travel adjustment.

7. Separate buffer (5) and buffer spring (6). Inspect for cracks or damage on the buffer. Inspect buffer spring for kinks, bends, or breaks.

8. Inspect for missing sling swivel (7).

9. Inspect pistol grip (8) for cracks or damage.



10. Inspect for broken or bent trigger (9).

11. Visually inspect the inside parts of the lower receiver for broken or missing parts.

REPLACE

NOTE

If lower receiver and adjustable buttstock assembly are defective, notify contractor.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NO NSN AVAILABLE - PN FOR BOLT ASSEMBLY: 20051 and NSN: 5306-01-542-8095 - PN FOR BOLT CARRIER ASSEMBLY: 92026)
MAINTENANCE OF BOLT AND CARRIER ASSEMBLY

This task covers: a. Disassembly b. Cleaning c. Inspection/Replace d. Repair e. Reassembly

INITIAL SETUP:

Tools and Special Tools
Handle and Rod Adapter (item 8, WP 0027 00)
Small Arms Tool Kit, NSN: 5180-01-506-8287

Materials/Parts
CLP (item 10, WP 0028 00)

Materials/Parts (cont)
Swabs (item 16, WP 0028 00)
Pipe Cleaner (item 17, WP 0028 00)

Equipment Condition
Weapon field stripped (WP 0013 00)

References
WP 0012 00
WP 0013 00
WP 0027 00
WP 0028 00

CAUTION

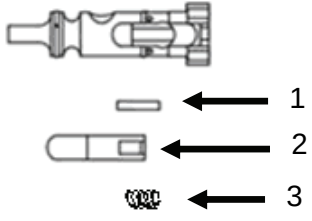
DO NOT slam the bolt assembly forward into the bolt carrier assembly with the palm of your hand!

DISASSEMBLY

NOTE

DO NOT separate cartridge extractor (2) and extractor spring assembly (3) unless replacement of either or both is required.

DO NOT remove the rubber insert from the extractor spring assembly (3).

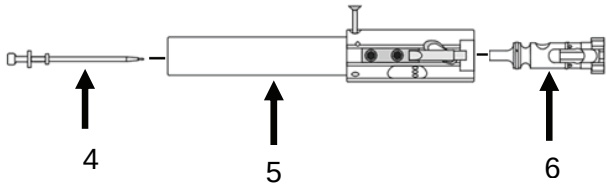


1. Push out extractor pin (1) and remove cartridge extractor (2) and extractor spring assembly (3) as a unit.

2. If required, twist extractor spring assembly (3) counterclockwise to remove from cartridge extractor (2).

CLEANING

1. Clean carbon and oil from firing pin (4), firing pin recess and all surfaces of bolt carrier assembly (5), and bolt assembly (6), with wet CLP patches. Then dry with a clean cloth.



2. Clean bolt carrier key (7) with a pipe cleaner.

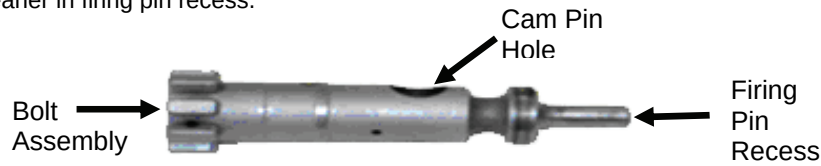
CLEANING - Continued

3. Using the handle and rod adapter with a small .25 cal bolt carrier brush, insert it through the small diameter hole inside the bolt carrier assembly (5). One or two passes with the .25 cal bolt carrier brush will generally clean carbon from the bolt's tail piece recess. Rotate handle and rod adapter clockwise to keep the .25 cal bolt carrier brush from unscrewing.

4. Using the handle and rod adapter and 20 gage bolt carrier brush and handle and rod adapter, insert it in the bolt carrier assembly (5) bolt recess. Rotate handle and rod adapter clockwise 5 or 6 times to keep the 20 gage bolt carrier brush from unscrewing, and to clean carbon from the bolt recess.

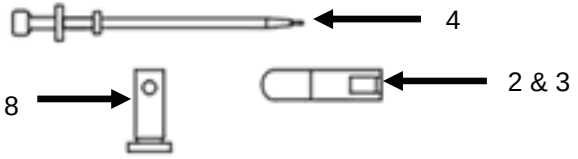
5. Apply 1 drop of CLP to the area around the ejector

6. For bolt assembly, generously coat with CLP and scrub thoroughly with a toothbrush from the deployment kit. Use small end of toothbrush in cam pin hole and doubled over pipe cleaner in firing pin recess.



CLEANING - Continued

7. Scrub cartridge extractor (2) and extractor spring assembly (3), cam pin (8), and firing pin (4) in similar manner. Be careful toothbrush does not dislodge extractor spring (3). If necessary to re-seat extractor spring assembly (3), place larger diameter end-coil into recessed hole in cartridge extractor (2) body and press in on opposite end and turn counterclockwise.



8. Wipe parts with a clean/dry cloth. Repeat cleaning with CLP and toothbrush if carbon is present or as necessary to remove fouling, then wipe clean and dry.

9. Use small end of toothbrush to scrub cam groove. Wipe all parts clean and dry with clean cloths, patches, and pipe cleaners.

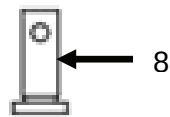
INSPECTION / REPLACE

1. Inspect bolt carrier assembly for lose bolts or cracks on bolt carrier key (7). Inspect for missing or broken firing pin retainer (9).

NOTE

Check deployment kit for new bolt cam pin (8), firing pin (4), cartridge extractor (2), extractor spring assembly (3), extractor pin (1), and gas rings (9). If missing from deployment kit, order replacements.

2. Inspect bolt cam pin (8) for cracking, chipping, or burrs. If cracked, chipped or burred, replace bolt cam pin (8).

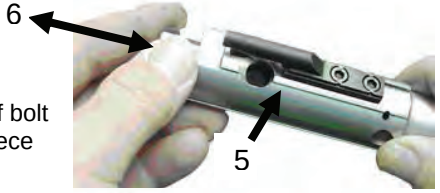


3. Inspect firing pin (4) for bends or cracks. If bent or cracked, replace firing pin (4).

INSPECTION / REPLACE - Continued

4. Inspect for worn, missing, or broken gas rings (9).

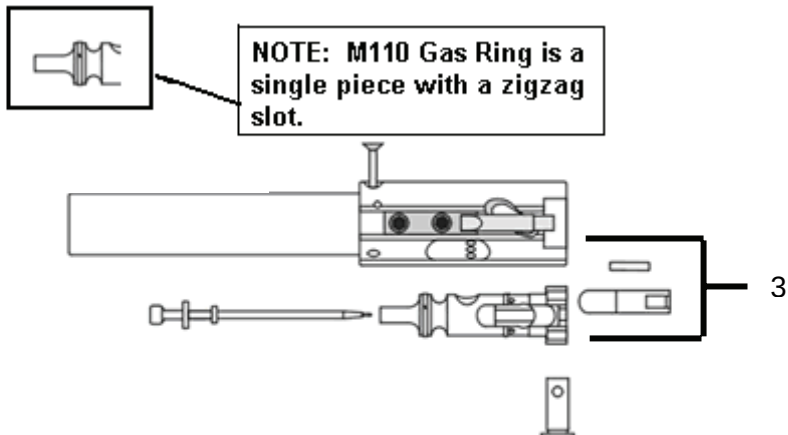
5. If bolt assembly (6) slides in and out of bolt carrier assembly (5) too easily, the two piece bolt gas ring set needs to be replaced.



6. Inspect locking lugs for cracking or chipping. If excessive pitting on bolt face, notify contractor.

7. Inspect extractor spring assembly (3) for missing extractor spring and insert and for chipped or broken edges on the lip which engages the cartridge rim. Replace extractor spring assembly (3).

REPAIR



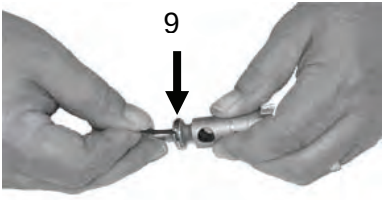
NOTE: The Operator does not need to be concerned with the single gas ring's (zigzag) slot orientation.

NOTE

DO NOT remove gas rings (9) unless repair is required. If only one gas ring (9) is damaged, replace both gas rings (9).

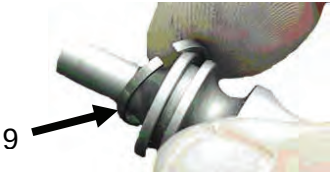
Removing

Remove outer gas ring (9) first; then remove inner gas ring (9. Pry up one end and push gas ring (9) off.



Installing

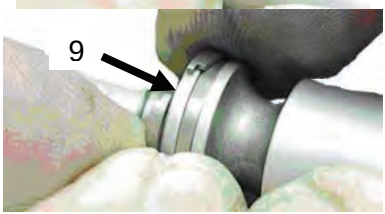
1. Install smaller gas ring (9) first. Using your fingers of the supporting hand, keep the top end gas ring (9) as much in the groove as possible.



2. Slide the other end up and into the groove.

3. As the top end snaps into the groove, lift the other end up and over.

4. Outer gas ring (9) is installed in the same manner as steps 1 and 2.



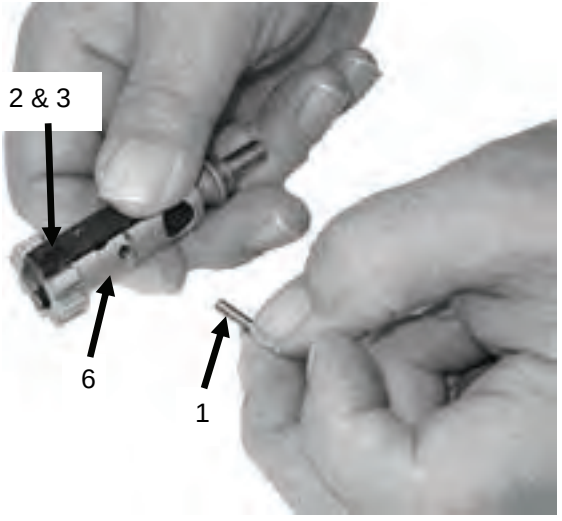
REASSEMBLY

1. Position cartridge extractor (2) and extractor spring assembly (3) on bolt assembly (6).

2. Compress cartridge extractor (2) and extractor spring assembly (3) to align holes.

3. Center extractor pin (1) by hand.

4. Reassemble sniper rifle (Reference WP 0013 00).



END OF WORK PACKAGE

OPERATOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM (NSN: 1005-01-544-6092 - PN: 20305) MAINTENANCE OF THE DAY OPTIC SCOPE

This task covers: a. Cleaning b. Inspection c. Replace

INITIAL SETUP:

Tools and Special Tools

- Deployment Kit (item 1, WP 0026 00)
- T Handle Torque Wrench (item 2, WP 0026 00)
- 1/2 Inch Open End Box Wrench (item 4, WP 0026 00)
- Optics Cleaning Kit (item 5, WP (0027 00)
- Lens Brush (item 9, WP 0027 00)
- Small Arms Tool Kit, NSN: 5180-01-506-8287

Materials/Parts

- Alcohol Cleaning Fluid (item 1, WP 0028 00)
- CLP (item 10, WP 0028 00)
- Lens Cleaning Paper (item 14, WP 0028 00)
- Wiping Rag (item 15, WP 0028 00)

Equipment Condition

- Day Optic Scope (WP 0007 00)
- Weapon field stripped (WP 0013 00)

References

- WP 0007 00
- WP 0013 00
- WP 0026 00
- WP 0027 00
- WP 0028 00

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Ensure the weapon is unloaded and the chamber is clear. Place weapon On SAFE before performing maintenance procedures.

CLEANING

1. Open front and rear lens covers on the day optic scope.

2. Use optics cleaning kit supplied in the deployment kit. Use only silicone-free lens cleaning paper / tissue to wipe lenses clean.

NOTE

DO NOT blow on lenses in cold weather.

3. Remove dust, lint, dirt, and large particles by first blowing across the lenses. Then use a soft bristle clean / oil-free lens brush from the deployment kit to gently sweep any debris from the lens.

4. To remove finger prints, oil smudges, and other grime from the lens, apply lens cleaning fluid or isopropyl (rubbing) alcohol to a folded piece of lens cleaning paper. Wipe lens clean with a circular motion starting at the center of the lens and working outward.

5. Close protective lens covers on day optic scope.

6. Clean outside metal surface of day optic scope with a clean dry cloth.

7. Keep allen screw heads clear of debris and rust. Use long bristles of a small arms brush from the deployment kit to keep clean and clear. If rust is, or may be a problem, put a drop of CLP on each screw head, brush in and wipe off excess oil.

8. Clean other areas of mounting rings, mounting nuts, etc., with a small arms brush.

INSPECTION

1. Inspect for dents, cracked lens and fogged lens.

2. Check for missing front and rear, flip open, protective lens covers, cracks, and spring tension to ensure proper operation.

3. Check day optic scope for full range of magnification.

4. Check scope ring base for looseness.

NOTE

Remove battery when storing weapon.

5. Ensure there is a battery in the day optic scope.

6. Ensure the illuminated reticle has enough brightness.

NOTE

To inspect / change battery, grasp the knob side striations firmly, and rotate the cover edge counterclockwise.

7. Inspect battery compartment for corrosion.

8. Ensure battery is removed when stored.

REPLACE

1. If battery is missing or has lost power, replace.

2. Replace battery with + side up.

NOTE

Removal of the day optic scope should ONLY occur if the day optic scope is to be returned for repair, or for use of the back-up iron sight (BUIS).

3. To remove the day optic scope, use the 1/2 inch open end box wrench to loosen the front and then the rear mount base nuts while holding the day optic scope firmly against the upper rail system. Loosening means to rotate to the left / counterclockwise direction.

NOTE

DO NOT rotate nuts completely off their shaft!

4. Holding left side of rifle downwards, rotate day optic scope away from the nuts to disengage from upper receiver and barrel assembly.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-260-2665 - PN: 96117)
MAINTENANCE OF BIPOD

This task covers: a. Cleaning b. Inspection c. Replace

INITIAL SETUP:

Materials/Parts
CLP (item 10, WP 0028 00)
Wiping Rag (item 15, WP 0028 00)

Equipment Condition
Weapon field stripped (WP 0013 00)

References
WP 0013 00 WP 0028 00

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Always unload and clear rifle before attaching or detaching bipod.

CLEANING

NOTE

DO NOT apply CLP to the leather pads on bipod saddle or rubber ends of the bipod legs.

CLEANING - Continued

Wipe all steel parts to include bipod legs with a clean cloth lightly lubricated with CLP to prevent rust.

INSPECTION

NOTE

If any defects are found, replace bipod.

1. Inspect bipod legs for cracks, bends or damage for operation.

2. Inspect detent for bipod leg extensions.

3. Inspect leg extensions and spring tension.

4. Inspect side plates for spring tension.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-542-4487 - PN: 24611)
MAINTENANCE OF SOUND SUPPRESSOR

This task covers: a. Cleaning b. Inspection c. Replace

INITIAL SETUP:

Tools and Special Tools
Deployment Kit (item 1, WP 0026 00)

Materials/Parts
CLP (item 10, WP 0028 00)
Wiping Rag (item 15, WP 0028 00)

Equipment Condition
Weapon field stripped (WP 0013 00)

References
WP 0013 00
WP 0026 00
WP 0028 00

CAUTION

Except in emergencies, firing duration (number of rounds fired before cooling) should be limited to increase the lifespan of the sound suppressor. Never subject the sound suppressor to more than 20 rounds of sustained fire (five rounds per minute for four minutes). If this limit is reached, allow the unit to cool to ambient temperature before resuming fire if possible.

CLEANING

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

The sound suppressor is not designed to be used "wet". Under no circumstances should it be filled with grease or any other substance before use. The use of a substance could alter the path of the projectile and/or cause malfunctions. Never lubricate the sound suppressor body.

NOTE

The Quick-Detach (QD) sound suppressor should be removed from its host weapon as soon as possible after every use. The QD sound suppressor should be removed while it is still warm because carbon fouling solidifies as the unit cools, making it more difficult to remove later when it has fully cooled. If the weapon/sound suppressor combination is to be repeatedly used over a period of time, it is useful to remove the sound suppressor periodically to prevent the buildup of carbon release. The rifle barrel and the QD sound suppressor should be cleaned with the following procedures after every use:

1. Dismount the sound suppressor from the rifle.

NOTE

DO NOT use wire brushes.

2. Dry brush carbon fouled parts using the small arms brush from the deployment kit. Take care to orientate the parts so carbon does not fall into the weapon bore, RAS, or down into the sound suppressor body.

3. Use CLP and a cloth to remove carbon fouling from the exterior barrel surfaces normally covered by the sound suppressor or they will rust.

4. If carbon fouling remains, use the small arms brush and CLP to scrub parts clean. Remounting and dismounting the sound suppressor (with the muzzle pointed down) once wet with CLP may also help remove residue.

5. The operator should clean and dry the CLP from affected parts with an absorbent cloth.

6. If the barrel and sound suppressor are exposed to salt water, mud, or corrosive chemicals, the QD sound suppressor should be removed from the host weapon and the assembly should be thoroughly rinsed with fresh water and completely dried internally.

CAUTION

DO NOT allow CLP to flow down in the sound suppressor body and contaminate the internal baffle areas. CLP and other oily residues will cause excessive smoke when the suppressed rifle is fired.

7. DO NOT oil the QD sound suppressor body. Wipe it dry with a clean cloth. Apply a light coat of CLP to the suppressor latch components to prevent corrosion each time the rifle is cleaned for smooth operation.

INSPECTION

NOTE

If any defects are found, notify contractor.

1. Look at muzzle end of the sound suppressor to ensure that the bullet has not struck the end of the sound suppressor. You would notice a copper looking mark or missing metal from end of sound suppressor.

2. Inspect sound suppressor for cracks, bends, or damage.

REPLACE

Replace sound suppressor if degrading sound and/or flash suppressing performance is noticed.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
FOR 10 ROUND: (NSN: 1005-01-473-1405 - PN: 98037 AND FOR 20 ROUND: NSN: 1005-01-473-1403 - PN: 98036)
MAINTENANCE OF MAGAZINE

This task covers: **a. Disassembly** **b. Cleaning** **c. Inspection** **d. Replace** **e. Reassembly**

INITIAL SETUP:

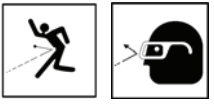
Tools and Special Tools
Handle and Rod Adapter (item 8, WP 0027 00)

Materials/Parts
CLP (item 10, WP 0028 00)
Swab (item 16, WP 0028 00)

References
WP 0027 00
WP 0028 00

DISASSEMBLY

WARNING



SPRING LOADED COMPONENTS

When disassembling, turn magazine away from face; spring is under compression.

NOTE

Brand new magazine base plate (1) may require front tip lifted slightly up.

1. Release base catch (1) while holding the magazine with one hand. Use your other hand to catch the spring as you slide base plate (1) to the rear and free of magazine body.

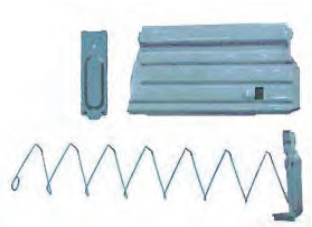
NOTE

Magazine follower and spring are attached. DO NOT separate the follower from the spring if at all possible.

2. Jiggle spring while pulling it gently from magazine body to remove spring and follower assembly.

CLEANING

1. With a clean cloth, clean all foreign matter from magazine components.



2. The magazine tube, spring, and follower should be lightly lubricated with a moistened cleaning patch and only 2-3 drops of CLP.

INSPECTION

1. Inspect magazine components for cracks, bends, or damage.

2. Check spring action and free up and down movement of magazine follower. Movement should be smooth and strong. Check for bends, kinks, and spring tension.

3. Inspect feeder lips for bends or damage.

REPLACE

If magazine is defective, replace with new magazine.

REASSEMBLY

1. Insert follower and jiggle spring to install.
2. Slide the base under all four tabs until base catches.
3. Slap the side of magazine to ensure spring is in place.
4. Ensure bottom of spring is captured in floor plate. Bend the top of the floor plate back.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-499-6868 - PN: 98474)
MAINTENANCE OF BACK-UP IRON SIGHT (BUIS)

This task covers: a. Cleaning b. Inspection c. Replace

INITIAL SETUP:

Tools and Special Tools
Deployment Kit (item 1, WP 0026 00)
Small Arms Tool Kit,
NSN: 5180-01-506-8287

Materials/Parts
Wiping Rag (item 15, WP 0028 00)

Equipment Condition
Day Optic Scope Removed (WP 0017 00)

References
WP 0017 00 WP 0028 00
WP 0026 00

CLEANING

NOTE

DO NOT remove BUIS unless replacement is required.

1. With a small arms brush from the small arms tool kit, lightly lubricate the rear sight. Clean all loose debris with the brush.

2. With a small arms brush, lightly lubricate the front sight. Clean all loose debris with the brush.

3. Wipe off excess lubrication with a clean cloth.

INSPECTION

1. Inspect to make sure that there are no cracks or missing parts on the BUIS.

2. Inspect rear sight for capability to adjust windage and elevation knobs. Check flip up aperature for spring tension.

3. Ensure that the front sight moves freely and can lock in place.

REPLACE

If BUIS is defective, order a replacement BUIS.

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)

SAFETY / FUNCTION CHECK

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

Before starting safety / function check, always clear the rifle. DO NOT squeeze the trigger until the weapon has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. Ensure weapon is on "SAFE" and pointed in a safe direction.

CHECKING SAFE POSITION **NOTE**

Ensure there is no magazine in weapon.

1. Remove magazine and check chamber.

2. Place ambidextrous safety selector lever on SAFE position. Pull charging handle fully to the rear and lock bolt to the rear. Return charging handle to its forward position. Visually check receiver and chamber area for ammunition or foreign objects. Release bolt catch and allow bolt to lock into battery.

CHECKING SAFE POSITION - Continued

3. Squeeze trigger fully to the rear. You should not hear anything as the hammer should not fall. Release the trigger.

CHECKING SEMI POSITION AND DISCONNECTOR

1. Place ambidextrous safety selector lever on FIRE position.

2. Squeeze trigger fully to the rear while listening for the hammer to snap forward.

3. You should hear hammer snap forward with a distinct click. Continue holding the trigger fully to the rear.

4. While holding the trigger to the rear, pull the charging handle fully to the rear. Ride the charging handle forward slowly and listen for the hammer to fall. You should hear nothing as the hammer should be held to the rear by the disconnector.

5. Slowly release the trigger. You should hear a light click as the hammer is released from the disconnector and engages the sear.

6. Squeeze the trigger fully to the rear. You should hear the hammer fall forward with a distinct click.

7. Close the ejection port cover.

END OF WORK PACKAGE

CHAPTER 5

AMMUNITION

MAINTENANCE INSTRUCTIONS

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

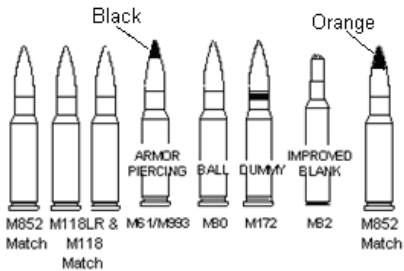
(NSN: 1005-01-534-2841 - PN: 13013050)

CARE, HANDLING, AND PRESERVATION OF AMMUNTION

WARNING

EXPLOSION AND ACCIDENTIAL DISCHARGE

This is the only ammunition authorized for use in your rifle. If it is not shown, it is not authorized. Ammunition that fails to fire will be disposed of by authorized procedures.



AMMUNITION DATA

Ammunition: 7.62mm (.308 Win.), M118LR (combat use), M118 Match, M852 Match, M82 Blank Cartridge, M993 AP Cartridge, M80 Ball Cartridge.

AMMUNTION WHICH FAILS TO FIRE

Dispose of any ammunition which fails to fire according to authorized procedures.

CARE, HANDLING, AND PRESERVATION

1. Protect ammunition from mud, sand, and water. If the ammunition gets wet or dirty, wipe it off at once with a clean dry cloth (item15, WP 0028 00). Wipe off light corrosion as soon as it is discovered. Turn in heavily corroded cartridges.

2. DO NOT expose ammunition to the direct rays of the sun. If the powder is hot, excessive pressure may develop when the rifle is fired.

3. DO NOT oil or grease ammunition. Oiled cartridges produce dangerously high levels of bolt thrust against the locking lugs and may damage them. Dust and other abrasives that collect on greasy ammunition may cause damage to the operating parts of the rifle.

4. DO NOT fire corroded or dented cartridges, cartridges with loose bullets, or any other defective rounds detected by visual inspection.

END OF WORK PACKAGE

CHAPTER 6

PARTS INFORMATION

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
REPAIR PARTS LIST

INTRODUCTION

Explanation of Columns in the M110 Sniper Weapon System Repair Parts List

Column (1) Illus Number. Gives you the number of the item illustrated.

Column (2) SMR Code. The SMR code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instructions.

Column (3) National Stock Number (NSN). Identifies the stock number of the items to be used for requisitioning purposes.

Column (4) Description, CAGEC, and Part Number. Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (Commercial and Government Entity Code) (in parentheses) and the part number.

Column (5) Qty. Indicates the quantity required.

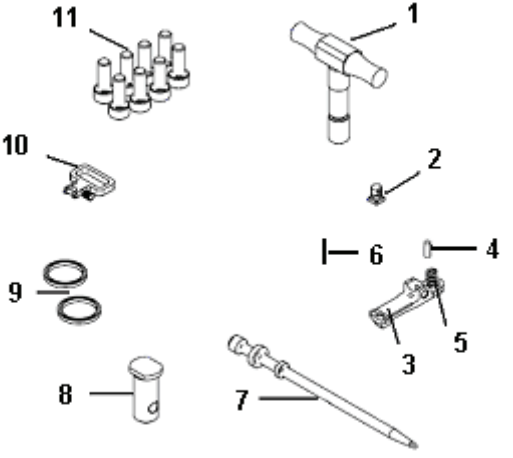


Figure 1. Deployment Kit
0024 00-2

NOTE

If anything is missing out of the Deployment Kit, requisition items immediately!

Table 1. Repair Parts List for the M110 Semi-Automatic Sniper System (SASS)

(1) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, PART NUMBER	(5) QTY
1.	PACZZ	1005-01-260-2645	T-Handle Torque Wrench, (3A703) PN 96059	1
2.	PACZZ	5325-01-505-0583	Stud & Nut Assembly 1/4 - 20, (1S002) PN 20288	1
3.	PACZZ	1005-01-503-0000	Extractor, (1S002) PN 99075	1
4.	PACZZ	1005-01-504-8376	Extractor Spring Buffer, (1S002) PN 99164	1
5.	PACZZ	5360-01-502-9993	Extractor Spring, (1S002) PN 99076	1
6.	PACZZ	5315-01-502-9989	Extractor Pivot Pin, (1S002) PN 94065	1
7.	PACZZ	1005-01-502-9999	Firing Pin, (1S002) PN 99077	1
8.	PACZZ	1005-01-505-0304	Cam Pin, (1S002) PN 91428	1
9.	PACZZ	1005-01-504-8377	Gas Rings 2-Piece Set, (1S002) PN 21002	1

Table 1. Repair Parts List for the M110 Semi-Automatic Sniper System (SASS) – Continued

(1) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, PART NUMBER	(5) QTY
10.	PACZZ	1005-01-260-2640	Military QD Sling Swivel, (3A703) PN 96023	1
11.	PACZZ	5305-01-542-7172	Screw, Cap, (1S002) PN 24729	8

END OF WORK PACKAGE

CHAPTER 7

SUPPORTING INFORMATION

FOR

M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
REFERENCES

SCOPE

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

FIELD MANUALS

FM 3-4	NBC Protection
FM 3-5	NBC Decontamination
FM 4-25.11	First Aid
FM 23-10	Sniper Training

FORMS

DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2408-9	Equipment Control Record

FORMS - Continued

DA Form 2028	Recommended Changes to Publications and Blank Forms
SF 368	Product Quality Deficiency Report

MISCELLANEOUS PUBLICATIONS

CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-970	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

TECHNICAL MANUALS

TM 750-244-7	Procedures for Destruction of Equipment in the Federal Supply Classifications 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090 and 1095 to Prevent Enemy Use

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

INTRODUCTION

Scope. This work package lists COEI and BII for the M110 Sniper Rifle System to help you inventory items for safe and efficient operation of the equipment.

General. The COEI and BII information is divided into the following lists:

Components of End Item (COEI). This list is for information purposes only and is not authority to requisition replacements. These items are part of the M110 Sniper Rifle System. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Basic Issue Items (BII). These essential items are required to place the M110 Sniper System in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the M110 Sniper System during operation and when it is transferred between property accounts. Listing these items is your authority to request / requisition them for replacement based on authorization of the end item by the TOE / MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI List and BII List.

Column (1) - Illus Number. Gives you the number of the item illustrated.

Column (2) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) - Description, Part Number / (CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) - Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. These codes are identified below.

Code	Used On
SAS	M110 Semi-Automatic Sniper System (SASS), 7.62mm

Column (5) - Unit of Issue U/I. Identifies the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) - Qty Rqr. Indicates the quantity required.

Table 1. COMPONENTS OF END ITEM (COEI) LIST

(1) Illus No.	(2) National Stock No.	(3) Description, Part Number / CAGEC	(4) Usable On Code	(5) U/I	(6) Qty Rqd.
1.		Case, Deployment Kit w/Scope, PN 24720	SAS	EA	1
2.	1005-01-260-2645	T-Handle Torque Wrench, PN 96059 (3A703)	SAS	EA	1
3.	5120-00-227-6702	½" Socket (3/8") Drive, PN B107.100 (05047)	SAS	EA	1
4.	5120-00-228-9506	½" Wrench, Open End Box, PN B107.100 (58536)	SAS	EA	1
5.	1005-00-714-1245	Sling, PN 7141245 (19204)	SAS	EA	1
6.	1005-01-260-2665	Bipod, PN 96117, (3A703)	SAS	EA	1
7.	1005-01-503-0022	Dewey Rod, PN 21278 (1S002)	SAS	EA	1
8.	1005-01-503-0021	Rod Tip or Jag, PN 21300 (1S002)	SAS	EA	1

(1) Illus No.	(2) National Stock No.	(3) Description, Part Number / CAGEC	(4) Usable On Code	(5) U/I	(6) Qty Rqd.
9.	1005-01-503-0024	Bore Rod Guide Assembly, PN 21281 (1S002)	SAS	EA	1
10.	1005-01-543-0157	Crown Scope Cover, PN 20298 (1S002)	SAS	EA	1
11.	1005-01-543-0166	10 Round Single Pouch, PN 24722 (1S002)	SAS	EA	1
12.	1005-01-543-0168	20 Round Single Pouch, PN 24721 (1S002)	SAS	EA	1
13.	1005-01-543-0995	20 Round Dual Pouch, PN 24724 (1S002)	SAS	EA	1
14.	1005-01-473-1403	20 Round Magazine, PN 98036 (1S002)	SAS	EA	4
15.	1005-01-473-1405	10 Round Magazine, PN 98037 (1S002)	SAS	EA	4
16.	1005-01-543-0170	SASS Optic Case PN 24720 (1S002)	SAS	EA	1

Table 2. BASIC ISSUE ITEMS (BII) LIST

(1) Illus No.	(2) National Stock No.	(3) Description, Part Number/ CAGEC	(4) Usable On Code	(5) U/I	(6) Qty Rqd.
1.		TM 9-1005-342-10	SAS	EA	1

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION

Scope. This work package lists additional items you are authorized for the support of the M110 Sniper System.

General. This list identifies items that do not have to accompany the M110 Sniper System and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

Explanation of Columns in the AAL

Column (1) Item Number. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item.

Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Explanation of Columns in the AAL - Continued

Column (3) - Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) - Vendor/Name and Address. In order to receive additional (replenishment) accessories, you must order directly from the vendor, using the name and address provided.

NOTE

The following items are not stocked and stored through normal supply channels; with the exception of the bipod and cleaning kit (these do have NSN's). In order to receive additional (replenishment) accessories, you must order directly from the vendor, using the address provided in Table 1 below.

Table 1. ADDITIONAL AUTHORIZATION LIST

(1) Item No.	(2) National Stock No.	(3) Description Part Number / (CAGEC)	(4) Vendor Name and Address
1.		Ballistic Calculator	Mildot Enterprises P.O. Box 1535 Los Lunas, NM 87031
2.		Wind Meter	Dwyer Instruments, Inc. Michigan City, IN 46360
3.		Data Book	TACOM, ATTN: AMSTA-LC-WSIL, 1 Rock Island Arsenal, Rock Island, IL 61299-7630 DSN 793-4453/2361
4.		Drag Bag PN 4SAC, (0D125)	Eagle Industries 400 Biltmore Drive Fenton, MO 63026
5.	1005-01-453-3783	Cleaning Kit, PN 308-7, (01VS3)	Otis Technology, Inc. RR 1, Box 84 Boonville, NY 13309

Table 1. ADDITIONAL AUTHORIZATION LIST - Continued

(1) Item No.	(2) National Stock No.	(3) Description Part Number / (CAGEC)	(4) Vendor Name and Address
6.	1005-01-542-8841	Brass Patch Holder, PN GA1018 (1S002)	
7.	1005-01-543-0991	Large Brush Adapter PN GA1005 (1S002)	
8.	1005-01-543-0990	Handle and Rod Adapter, PN GA1008 (1S002)	
9.	1005-01-543-0154	Lens Brush, PN GA 1020 (1S002)	
10.	1005-01-503-0023	Dewey Rod Bore Brush Adapter, PN 21301 (1S002)	

END OF WORK PACKAGE

OPERATOR
M110 SEMI-AUTOMATIC SNIPER SYSTEM (SASS), 7.62MM
(NSN: 1005-01-534-2841 - PN: 13013050)
EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the M110 Sniper Rifle. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970. Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment for 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.

EXPLANATION OF COLUMNS IN THE EXPENDABLE/DURABLE ITEMS LIST – Continued

Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item (e.g., "C – Operator / Crew").

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

Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). This column provides the other information you need to identify the item.

Column (5) - Unit of Issue U/M. Identifies the physical measurement or count of the item as issued per the National Stock Number shown in column (3).

Table 1. EXPENDABLE AND DURABLE ITEMS LIST

(1) Item No.	(2) Level	(3) National Stock No.	(4) Item Name, Description, (CAGEC) & Part Number	(5) U/M
1.	C	6810-00-983-8551	Alcohol, Isopropyl (Cleaning Fluid) (81348), PN TT-I-735, 1 qt can	QT
2.	C	6850-01-399-3022	Anti-Fogging Compound (9T321), PN EXS-002	PT
3.	C	6515-01-234-6838	Applicator (Q-Tips), (5L934), PN 362, 100 per pk	EA
4.	C	8125-00-824-9058	Bottle (for containing isopropyl alcohol), (58536), PN A-A-685, 1 oz. bottle	EA
5.	C	8020-00-224-8010	Brush, Artist (Cleaning), (58536), PN A-A-391	EA
6.	C	1005-00-556-4174	Brush, Bore, (19204), PN 5564174	EA
7.	C	1005-00-690-8441	Brush, Chamber, (19204), PN 7790463	EA
8.	C	1005-00-494-6602	Brush, Cleaning Small Arms, (19204), PN 8448462	EA
9.	C		Rifle Bore Cleaning Compound (RBC) Solvent, (81349), PN MIL-PRF-372	
		6850-00-224-6656	2 oz. can	EA
		6850-00-224-6657	6 oz. can	EA

Table 1. EXPENDABLE AND DURABLE ITEMS LIST - Continued

(1) Item No.	(2) Level	(3) National Stock No.	(4) Item Name, Description, (CAGEC) & Part Number	(5) U/M
10.	C	9150-01-102-1473	Cleaner, Lubricant Preservative (CLP), (81349), PN MIL-PRF-63460, 1/2 oz. bottle	BT
11.	C	9150-01-260-2534	Lubricant, Solid Film, (34227), PN MIL-L-23398	CN
12.	C	9150-00-292-9689	Lubricating Oil, Weapons (LAW), (81349), PN MIL-PRF-14107, 1 qt. can	QT
13.	C	 9150-00-935-6597 9150-00-889-3522	Lubricating Oil, Weapons (LSA) Semi-Fluid, (81349) 2 oz. plastic bottle MIL-46000 Oil Bottle, PN 8436793	 BT BT
14.	C	6640-00-663-0832	Paper, Lens (Cleaning Tissues), (25518), PN 65-4900, 50 sheet pk	BK
15.	C	7920-00-205-1711	Rag, Wiping, (58536), PN A-A-351, 50 lb. bdl.	BE
16.	C	1005-00-288-3565	Swab, Small Arms Cleaning, (19204), PN 5019316, 200 per bl.	PG

(1) Item No.	(2) Level	(3) National Stock No.	(4) Item Name, Description, (CAGEC) & Part Number	(5) U/M
17.	C	9920-00-292-9946	Cleaner, Tobacco Pipe: Cotton Tuft, Wire Core, (89855), PN 840507, (32 per pk)	BX
18.	C	6135-01-398-5922	Battery, PN DL 1/3 N (90303)	EA
19.	C	6650-01-495-1058	Lens Cleaner, Pen (OSPF5), PN LP-99	EA
20.	C	6640-01-104-3368	Bottle, Plastic, (80063), PN SM-C-804739	EA

END OF WORK PACKAGE

INDEX

By Order of the Secretary of the Army:

Official:

Official:

JOYCE E. MORROW
Administrative Assistant to the Secretary of the Army
0616303

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

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PIN: 083336-000