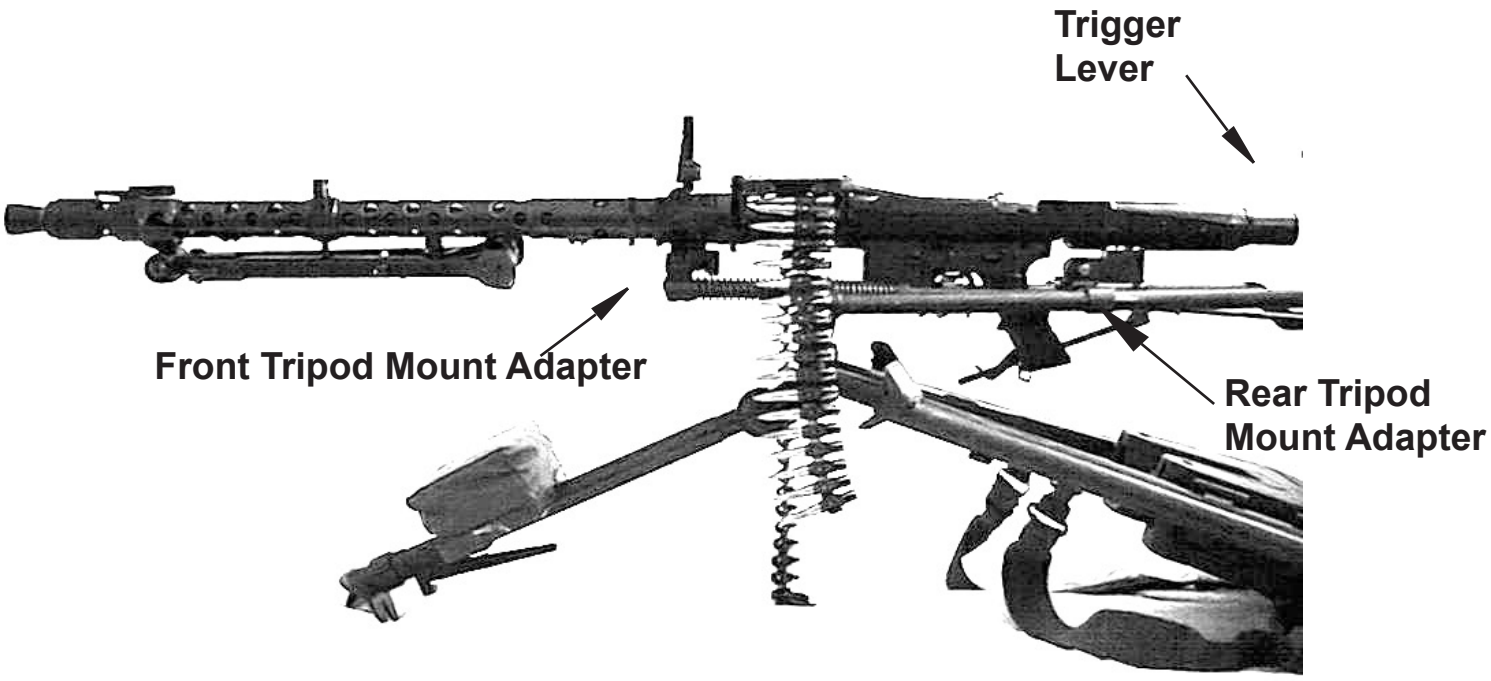
XMG BELT-FED CONVERSION AR/M16 OPERATOR'S MANUAL

BRP CORP

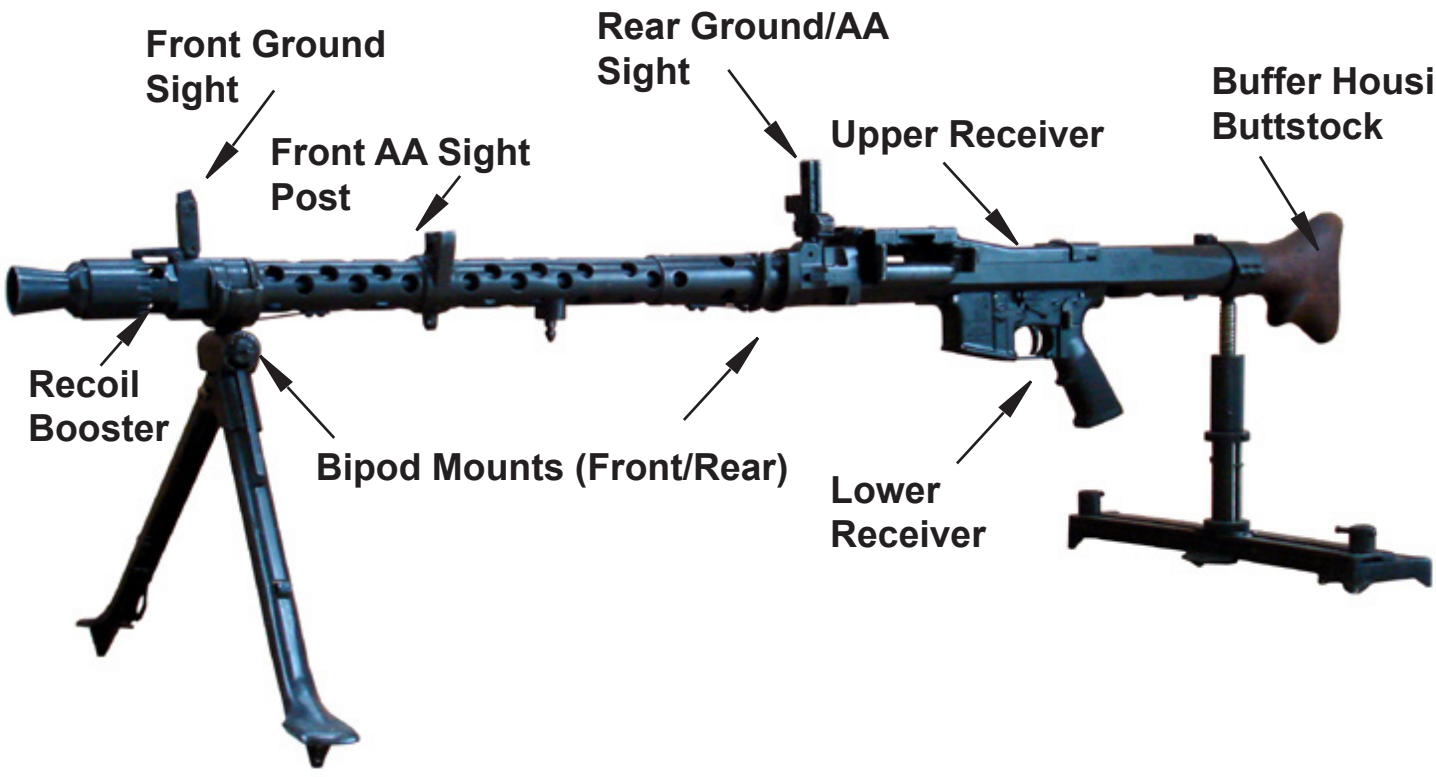
www.brpguns.com

Shown on MG-34
Sustained Fire Kit

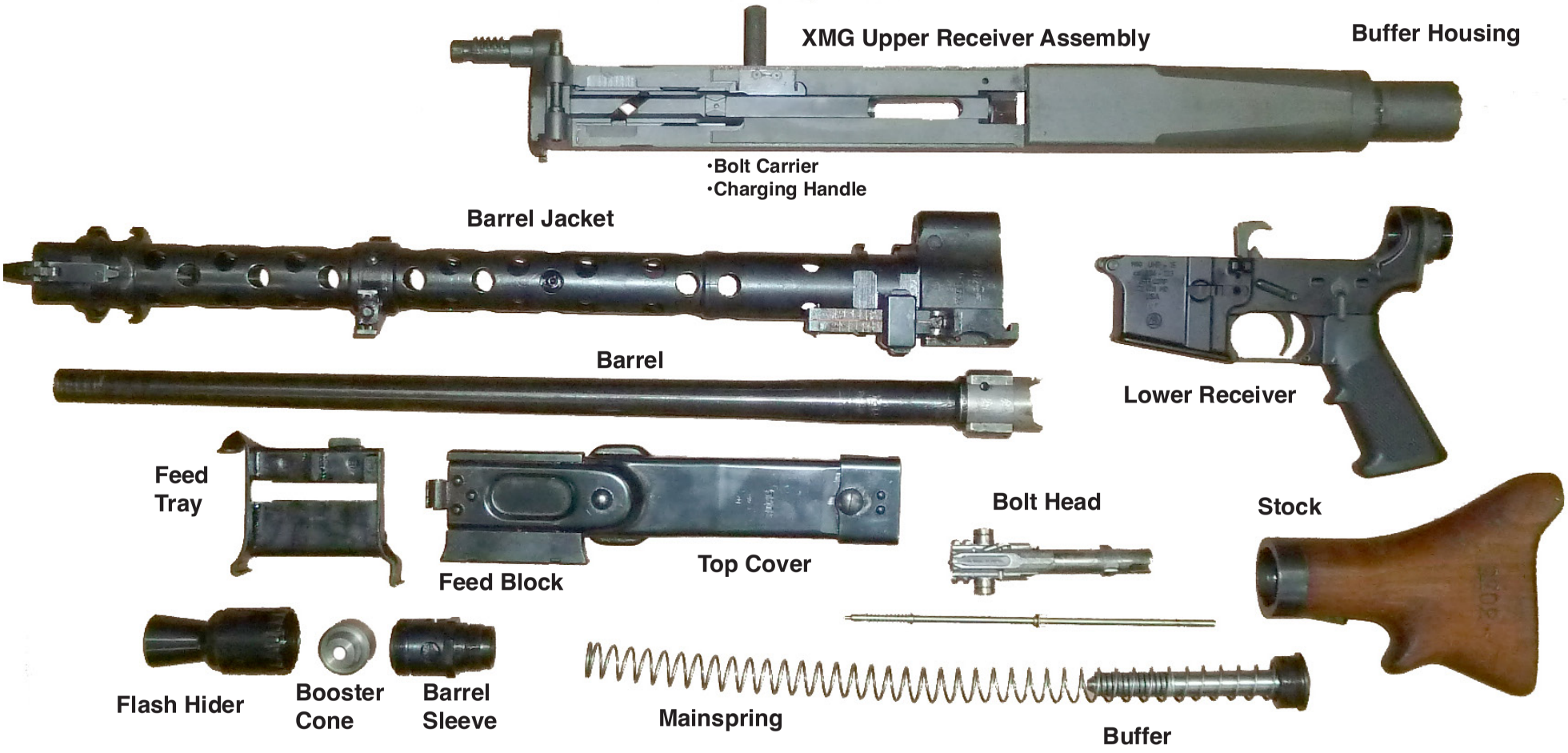
XMG Set on Low-Position Tripod (rear legs not extended)



XMG With Bipod and Rear Sustained Fire Kit



Basic Disassembly



Data

Weight of XMG, with bipod	31 lb
Overall length	52 in
Length of barrel	24.5 in
Caliber	308 NATO and/or 8-mm Mauser (7.92mm X 57)
Sight radius	20 15/16 in
Cyclic rate of fire*	700-800 rounds per min (With M16 and variant weapons only)

The Essentials of Running The XMG:

Following these steps will help you use this complex system reliably, prevent malfunctions, dangerous operation, and damage.

1) Training: All current or prospective customers are encouraged to make an appointment to come to our shop in Maryland for training. We will show you how to properly use and care for the XMG.

2) Correct Ammo: (See pages 40-41 of this manual) There have been a wide variety of 8mm weapons produced in the 20th Century by numerous countries. Much of this ammunition is not suitable to run in an automatic belt-fed firearm. *Note: the XMGs are tuned for Romanian and Olympic ammo from the factory. We have found these makes to be the best for use in just about all 8mm automatic firearms. Before using any ammunition, make certain the ammunition and belt are clean and free of all traces of sand and dust.

3) Correct Belts: During the 20th Century there were dozens of belt-fed machinegun designs that have been produced by numerous countries. Belts designed for one type of machinegun often look a lot like those of another. Many companies in the US sell belts for the MG-34, MG-42, and M-53 that are not actually belts designed for use in these weapons. We have seen numerous VZ, MG-3, and Swiss MG belts in the US market that will not function in firearms designed to run with the German-type MG-34/42 belt. Running an incorrect belt will likely result in damage to the feed mechanism.

4) Lubrication: Be sure to used a type of lubricant that doesn't attract dirt or residue. Avoid using any flammable lubricant/cleaners in the chamber area.

5) Cleaning: (See pages 36-39 of this manual) When cleaning the XMG, pay special attention to cleaning the bolt head, barrel, entire booster assembly and surrounding receiver area. Pay special attention to the front of the XMG. This is the exit point for all of the gasses and residue. This includes the flash-hider, booster cone, barrel sleeve, barrel crown, and receiver bushing. These parts must be thoroughly and aggressively cleaned after extended used because the corrosive residue becomes 'baked-on.'

6) Inspection: After cleaning, fully inspect and reassemble the XMG. Once fully reassembled, load and cycle some dummy rounds through the system to check for proper function.

7) Tuning: (See page 19 of this manual) Given the extreme variance in 8mm ammo, making sure that the XMG is properly tuned for a specific type of ammo is critical to running the XMG without slam-fires or lite-strikes.

8) Correct Hammer: Only use hammers without the notched top as in some semi-auto AR-15 variants.

9) Only close the Upper Receiver and Barrel Jacket with the Barrel installed. The Recuperator Piston protrudes from the front of the Upper Receiver and will prevent disconnecting the Receiver from the Jacket. If you did join the 2 parts without the barrel installed, you must depress the Recuperator Piston slightly to disconnect the 2 parts. The best way to do this is by mean of a cleaning rod through the front of the Jacket.

10) It is dangerous to investigate a feed stoppage or malfunction by raising the feed cover without first cocking the gun or retaining a hold on the cocking handle. Should a live round remain in the chamber, the raising of the feed cover would allow the bolt to continue forward and increase the chance of an accidental discharge, thus endangering the operator and damaging the gun. Should a stoppage occur during firing, set the selector to SAFE, cock the gun, retain hold on the cocking handle, and retain the bolt using the Bolt Hold-Open. Notice if a round ejected. Remove the barrel and inspect thoroughly.

11) Always unload the gun before transporting it from one place to another.

12) Always load the belt from back to front. The bolt will crush an empty belt loop if it is fed through the system.

13) Always unload the gun before transporting it from one place to another.

14) Keep hands and obstructions away from externally-accessible moving parts; namely, the cocking handle, the ejection area, bolt, and the belt-feed mechanism.

XMG Manual

This manual contains adaptations from the United States War Department Technical Manual (TM E9-206A) for ***German 7.92-mm Dual Purpose Machine Gun MG-34***.

The XMG is a highly complex, sophisticated, and experimental system that requires knowledgeable and competent operators. Full and complete adherence to the following instructions is an absolute necessity for safe and responsible use of the XMG. This conversion is NOT meant for anyone other than individuals knowledgeable in the safe operation of belt-fed systems and who have a thorough understanding of semiautomatic and automatic firearms. If you are not such an individual, DO NOT USE THIS SYSTEM, you pose a danger to yourself and those around you by using this system.

The following MG34 parts and accessories will not function with the XMG:

- Tripod Mount
- Buffer
- Bolt Carrier and Internal Parts
- Firing Pin
- Trigger Housing and Fire Control

The following MG34 parts and accessories will function with the XMG:

- Belts and Belt Drums
- Slings
- Front Anti-Aircraft Sight
- Ejector Plate
- Complete Bolt Head Assembly
- Complete Barrel Jacket Assembly with Bipod
- Buttstock
- Feed Cover and Feed Tray
- Anti-Aircraft Tripod

Introduction

This durable upper receiver alters the method of feed from magazine-only to belt-only and the caliber from .223 to 8mm Mauser. It requires no modification to your lower receiver. Each XMG comes complete with all parts except for the lower receiver. It is capable of semi-auto-fire-only operation with AR-15 and variant weapons and selective-fire with M16 and variant weapons. It has a cycle rate of 700-800 rounds per minute. Original MG34 selective fire components and bolts cannot be introduced into the XMG configuration. The XMG is fed from MG34/42 50-round flexible, metal belts, two or more of which can be joined end-to-end.

This high-performance system is well-designed for use with full-auto lower receivers. The system is especially gentle on your lower receiver for two reasons: 1) The buffer system is attached to the upper receiver rather than to the lower receiver. 2) The bolt ramp is higher than the original M-16 so that the hammer will not over-depress and stress the mount holes in the lower receiver.

Its design is based on the MG-34 and it utilizes some parts from the MG-34. Most important are the bolt head, barrel, feed cover/tray, and muzzle parts.

Recommended Accessories for Your Lower

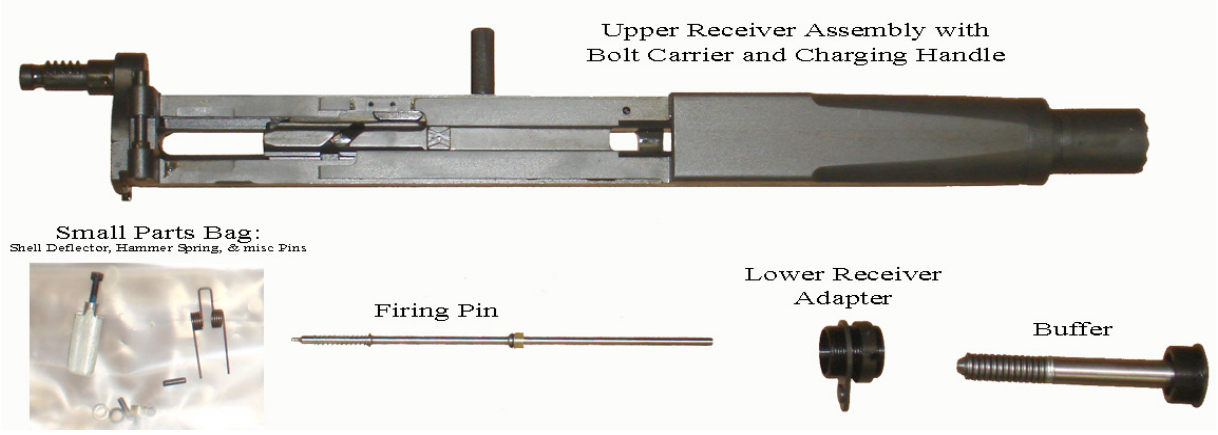
KNS Non-rotating Trigger,Hammer, and Sear Pins

Accu-Wedge or BRP / UHP Lower Receiver with Tightening Screw

Buffers AR-15/M-16 cycling system to reduce wear and provide a more solid feel by eliminating play in the receiver. Easy to install, requires no weapons modifications.

In your Spare Parts Bag:

1) Shell Deflector: Install this part behind the magazine housing to protect the front of your AR receiver.
2) Firing Pin Hardware:
    a) Front Spring: installs at front of firing pin to prevent slam fire
    b) Conical Washer: the first spacing washing for firing pin timing that sits against the firing pin shoulder
    c) Polyurethane Bumper: the last part to be installed on the back of the firing pin for spacing and cushioning firing pin movement.
    d) Round Washers: spacing washers that sit between the Conical Washer and Polyurethane Bumper for precise spacing
3) Belleville Disc Spring: spare buffer spring to add to buffer stack if it ever gets loose.
4) Hammer Spring: This is a heavy hammer spring necessary to provide enough force to fire the rounds. An extra-heavy hammer spring is also available for especially hard-primmered ammo.
5) 1/8 X 1/2 Roll Pin: This roll pin in used in both the short-recoil/recuperator and charging handle retainers. If your charging handle is loose in the bolt carrier, this pin should be replaced. Heavy-duty coiled and solid pins are also available.



Shell Deflector (obsolete)

Safety – *Your Responsibility*

SAFETY MUST BE THE FIRST AND CONSTANT CONSIDERATION OF EVERY PERSON WHO HANDLES FIREARMS AND AMMUNITION. This manual is designed to assist you in learning how to use and care for this system properly.

Only when you are certain you fully understand the manual and can properly carry out its instructions, should you practice loading, unloading, etc. with live ammunition.

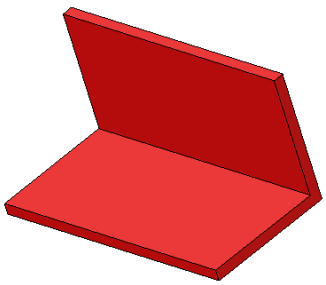
If you have doubts about your ability to handle or use this particular system safely, then you should seek supervised instruction. Such personalized instruction is often available from gun dealers, gun clubs or police departments. If none of these sources can help you, contact the National Rifle Association. You are also encouraged to contact BRP CORP for assistance in locating a source near you.

The person with a gun in his possession has a full-time job. He cannot guess; he cannot forget. He must know how to use his firearm safely. Do not use any firearm without having a complete understanding of its particular characteristics and safe use. Remember: There is NO such thing as a foolproof gun.

Basic Safety List

- A loaded firearm has the potential to kill. Intelligently handled, it is safe.
- An accident is always the result of basic safety rules neglect.
- Accident prevention is a user responsibility.
- Before handling a firearm, be sure to use correct and undamaged ammunition.
- Be sure your firearm is clean – before loading inspect the barrel to insure it is perfectly clean and free of foreign objects. Shooting with an obstruction in the barrel such as dirt, mud, grease, lodged bullet or jacket, residues, etc., can cause serious injury or death and damage to the firearm.
- Avoid alcoholic beverages or drugs before and during shooting.
- Avoid hard hitting or dropping of a loaded firearm.
- Store firearms and ammunition separately, beyond the reach of children. Be sure the cartridge chamber is empty.
- Thoroughly clean the firearm to prevent corrosion, especially in the muzzle components.
- Wear eye and ear protection.
- A Firearms Safety Course is recommended.
- Handle your weapon with respect, not fear.
- Install gun locks in jurisdictions which mandate such use.
- Always wear eye and ear protection.

- Never point a firearm at anything you don't want to shoot.
- Never assume that the chamber is empty, visually inspect it every time you handle the gun.



Bolt Hold-Open / Range Safety Device:

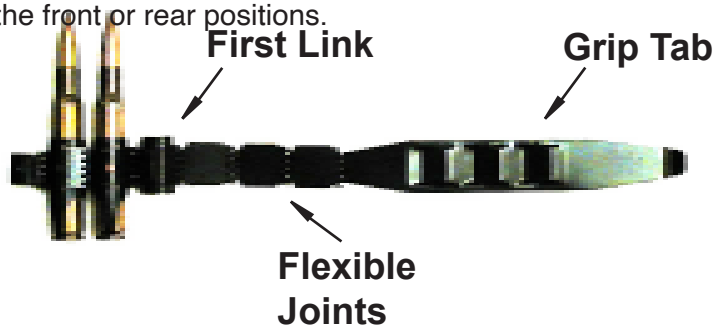
Retract the bolt and insert this piece through the ejection port then release the bolt forward against it. This will allow you to change barrels and also signal that the XMG is SAFE. To remove, retract the bolt and it will fall to the ground.

Mounts

The XMG can be used as a light machinegun mounted on the bipod or as a heavy machinegun mounted on modified MG-3 ground tripods. The XMG comes equipped with an original MG-34 bipod. These bipods are exceptionally versatile enabling the gunner to traverse the XMG while firing in the prone position. Since the XMG is very heavy in the front due to the steel barrel jacket, it is very stable firing in the prone position. The bipod can be mounted in either the front or rear positions.

Pull-Through Starter

With a pull-through starter tab, you only have to push the tab between the feed cover and feed tray, and pull.



Traversable Bipod

The ability to traverse is absolutely necessary and is what has made machineguns so effective since WWI. In that era, heavy machineguns on tripods (see exhibit 1) traversing zones of the battlefield created interlocking 'sweeps' of fire and an often-impenetrable curtain of steel. With the advent of tactics emphasizing mobility, light and general purpose machineguns were developed to advance with the infantry. Thus, the heavy tripods that provided a stable firing platform with sophisticated traverse and search mechanisms could no longer keep up with fast moving infantry. In an effort to compensate for the lack of a tripod, traversable bipods were developed to replace the cumbersome tripods without a substantial loss in machinegun effectiveness (see exhibit 2).

Traversable bipods have been used on many general purpose and light machineguns. The most reliable, most extensively tested, and best mechanism to date for a traversing bipod was first used on the German MG13 and is still used on the modern MG3 as well as many other general purpose and light machineguns in the world. This mechanism enables traversing of 360º or +/-30º (depending on the axis pintle). It uses a spring to center the bipod at 0º for quick setup, maximum control, and stability. Once the bipod is released from its retainer latch, another set of springs forces the legs out to 'ready' position in only one motion. Its flexibility also enables gunners to use the bipod legs as an effective forward grip.

Exhibit 1: Maxim Machinegun 1908 on Tripod

Exhibit 2: The Traversable Bipod

Center

Traverse Left 30º

Traverse Right 30º

Legal Information

ATF Ruling on the XMG Device:

DEPARTMENT OF THE TREASURY
BUREAU OF ALCOHOL, TOBACCO AND FIREARMS
WASHINGTON, DC 20226

MAR 30 2001

This is in reply to your letter dated December 6, 2000, and submitted sample of the XMG-99 prototype rifle. You have detailed the modifications performed to ensure this firearm could not be converted a machinegun.

The submitted sample resembles a German MG-34 machinegun and it incorporates certain MG-34 components including the barrel, barrel jacket, feed mechanism, and buttstock assembly. The receiver is newly fabricated from aluminum alloy and it incorporates a closed bolt firing mechanism. The receiver has been manufactured to a dimension that is incapable of accepting an MG-34 bolt or trigger housing. A semiautomatic AR-15 style receiver containing a standard AR-15 hammer, trigger, and disconnector is attached to the bottom of the XMG-99 receiver.

It is our opinion that the XMG-99 as provided, is not designed to shoot automatically and it is not a machinegun as defined in section 5845(b) of the National Firearms Act. Due to its design and construction, we also find that the upper receiver is a firearm as defined in section 921(a)(3), of Title 18, United States Code. The fact that it uses an AR-15 receiver as a trigger housing does not preclude classification of the upper receiver as a receiver. As assembled, this firearm has two receivers.

Firearms manufactured by a licensed manufacturer must be marked in accordance with Title 27, Code of Federal Regulations, section 178.92(a)(1). Section 178.92(a)(1), requires that a licensed manufacturer must place the following marks on the firearm:

1. A serial number not duplicating any serial number placed by the manufacturer on any other firearm.
2. The model (if assigned).
3. The caliber or gauge.
4. The name of the manufacturer.
5. The city and State of the manufacturer.

We trust that the foregoing has been responsive to your inquiry. If we can he of any further assistance, please contact us.

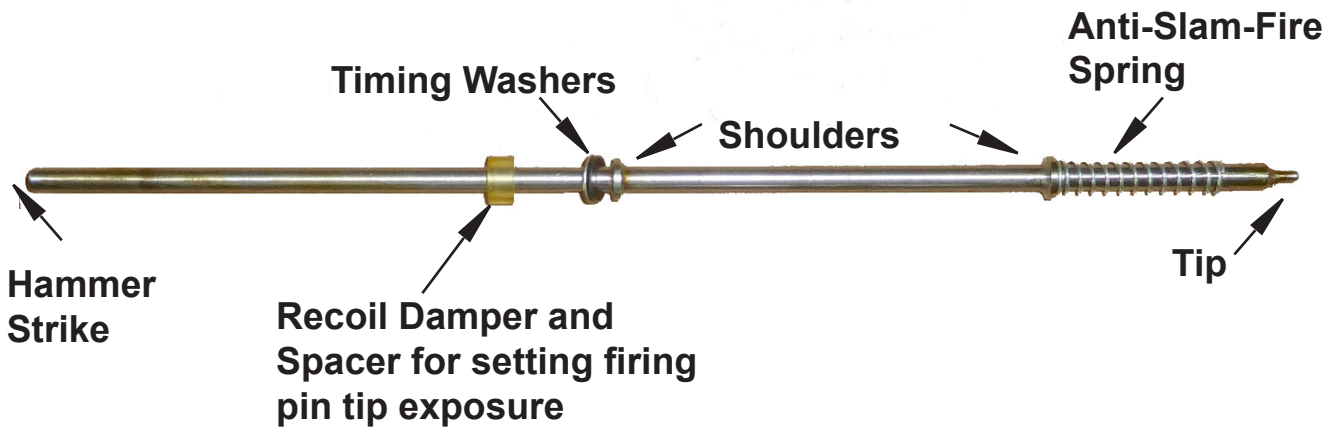
Sincerely,

Curtis H.A. Bartlett
Firearms Technology Branch

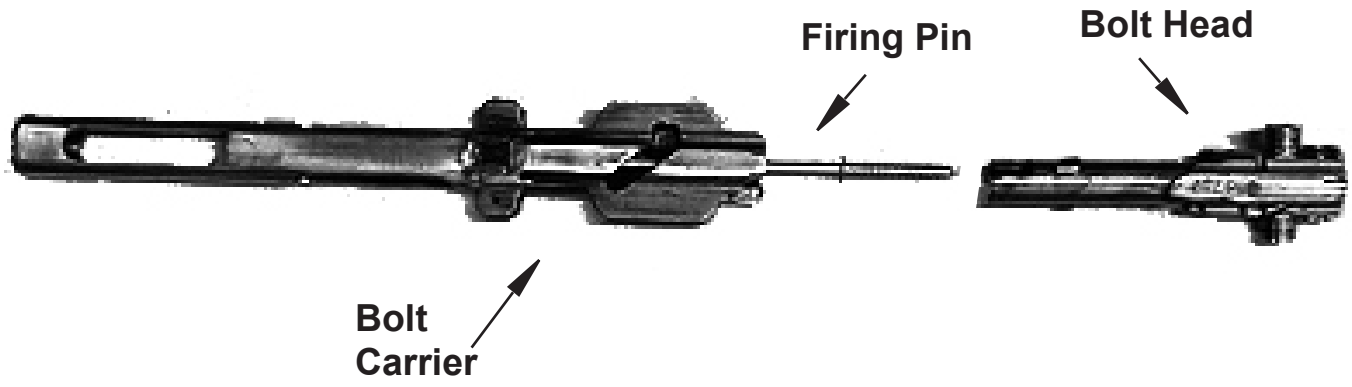
The 75 Round Saddle Drum will function on the XMG. However, by altering the method of feed from belt to detachable magazine, the assembly used in conjunction with an AR-15 type lower receiver may be considered an assault weapon under various state and federal statutes.

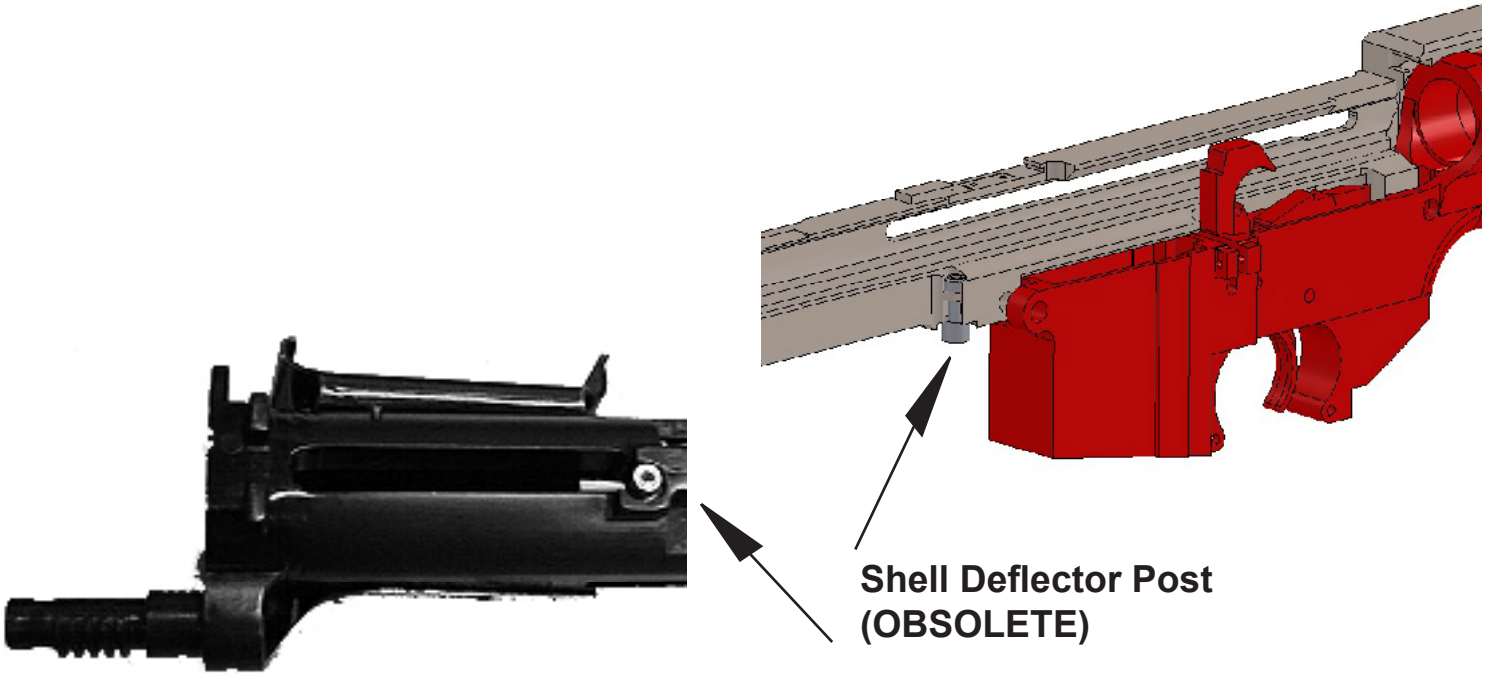
XMG Bolt and Firing Pin Reference

XMG Firing Pin Assembly

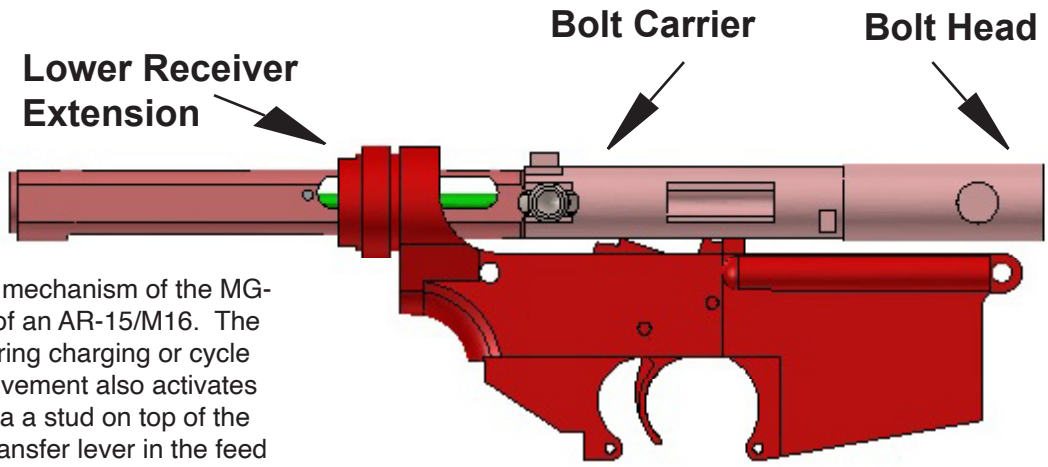


XMG Bolt Assembly



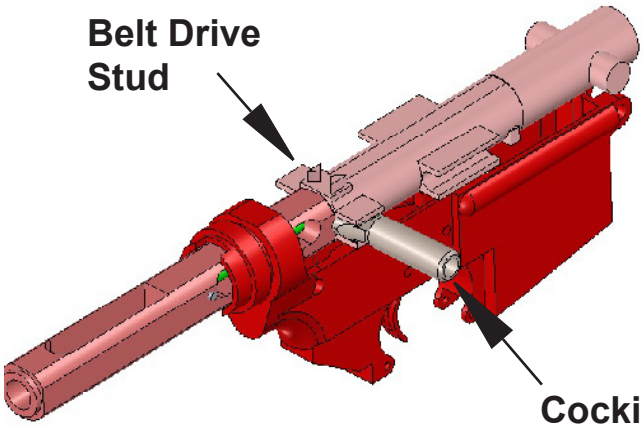


How it Works



The XMG uses the belt-feed mechanism of the MG-34 with the striking system of an AR-15/M16. The reciprocation of the bolt during charging or cycle cocks the hammer. This movement also activates the belt feed mechanism via a stud on top of the bolt which connects to the transfer lever in the feed cover. The movement of the bolt advances the belted ammunition through the system.

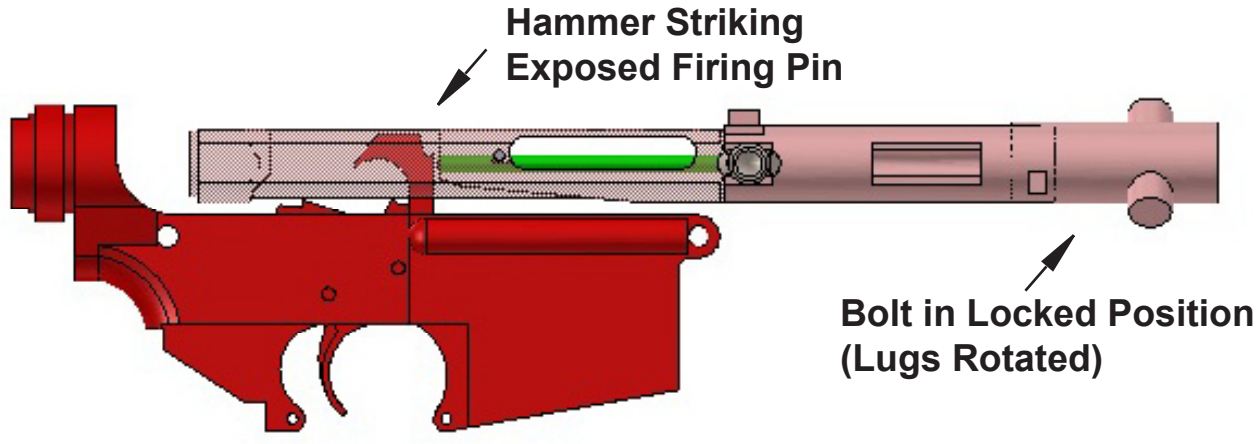
In this position the ejector on the bolt head is pushed forward by the ejector plate in the receiver thus expelling the round through the ejection port. A spring-loaded feed lip on the forward upper part of the bolt head acts to strip the next round from the belt and chamber it in the barrel.



WARNING

The cocking handle is connected to the bolt and reciprocates with the bolt during cycle. Keep hands and obstructions away from externally accessible moving parts; namely, the cocking handle, the ejection area, and the belt feed mechanism.

The XMG uses the multiple-lug 'twist-lock' mechanism of the MG-34. As the bolt 'twists and locks' into the barrel, it also telescopes, thereby revealing the firing pin to the hammer for striking. The hammer drives the firing pin tip into the primmer to set-off the round. When the round reaches the muzzle, the recoil and excess propellant gases drive the barrel rearward against the mainspirng and recuperator piston. This movement forces the roller lugs on the head of the bolt against the cams to unlock the bolt and allow it to reciprocate in the body of the receiver.



XMG Cycle Processes

1. **Operating the belt-feed mechanism:** The continuous movement of the bolt during operation causes the belt to move and ready the round to be stripped from the belt and chambered. This operation is the only one that occurs continuously during the entire cycle.

2. **Charging:** The rearward movement of the bolt cocks and retains the hammer so that the hammer will not fall until the bolt returns to its most forward position.

3. **Stripping:** A spring-loaded feed lip on the forward upper part of the bolt head acts to strip the next round from the belt and chamber it in the barrel.

4. **Chambering**: The process of securely locking the round in the chamber done by the rotation of the bolt head.
   NOTE: The first 'strip,' 'chamber,' and belt movement must be performed manually by the operator using the cocking handle. NEVER 'ride' the handle forward. With the bolt forward and the first round in the center of the feed slot, close the top cover making sure the transfer lever is aligned with the drive channel atop the bolt carrier, charge the handle fully rearward, then let go. Tap the rear of the handle just to make sure the bolt assembly is fully forward.

5. **Firing:** The hammer drives the firing pin tip into the primmer to set-off the round.

6. **Short-Recoil:** When the round reaches the muzzle, the recoil and excess propellant gases drive the barrel rearward against the mainspring and barrel return piston (recuperator). This movement forces the roller lugs on the head of the bolt against the cams to unlock the bolt and allow it to reciprocate in the body of the receiver.

7. **De-chambering/Extracting:** The short-recoil movement forces the roller lugs on the head of the bolt against the cams to unlock the bolt and allow it to reciprocate in the body of the receiver. During this operation, the case is connected to the bolt.

8. **Barrel Return:** Once unlocked from the bolt, the barrel returns to its forward position via the barrel return spring.

9. **Ejecting:** As the bolt travels rearward the ejector contacts the ejector plate, and expels the round through the ejection port directly under the feed tray.

10. **Buffering:** The rearward force of the bolt is buffered by a spring to limit the shock of the impact and reflect the rearward force of the bolt to accelerate it forward.

(The cycle process repeats itself via the mainspring)

Process From Chambered Position

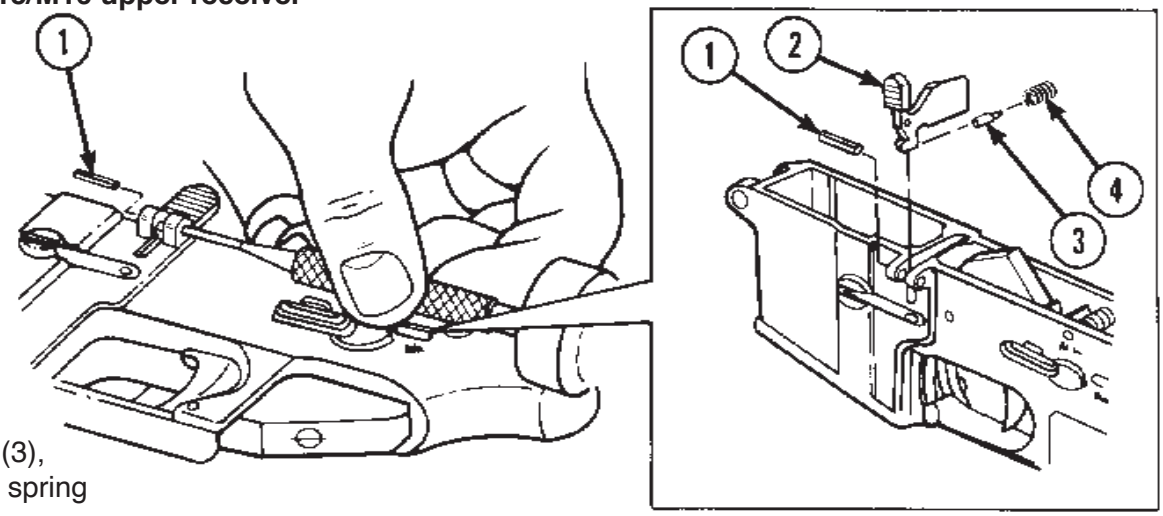
1. **Firing**
2. **Short Recoil**
3. **De-chambering/Extracting**
4. **Barrel Return**
5. **Ejecting**
6. **Buffering**
7. **Charging**
8. **Stripping**
9. **Chambering**
1. **Firing**

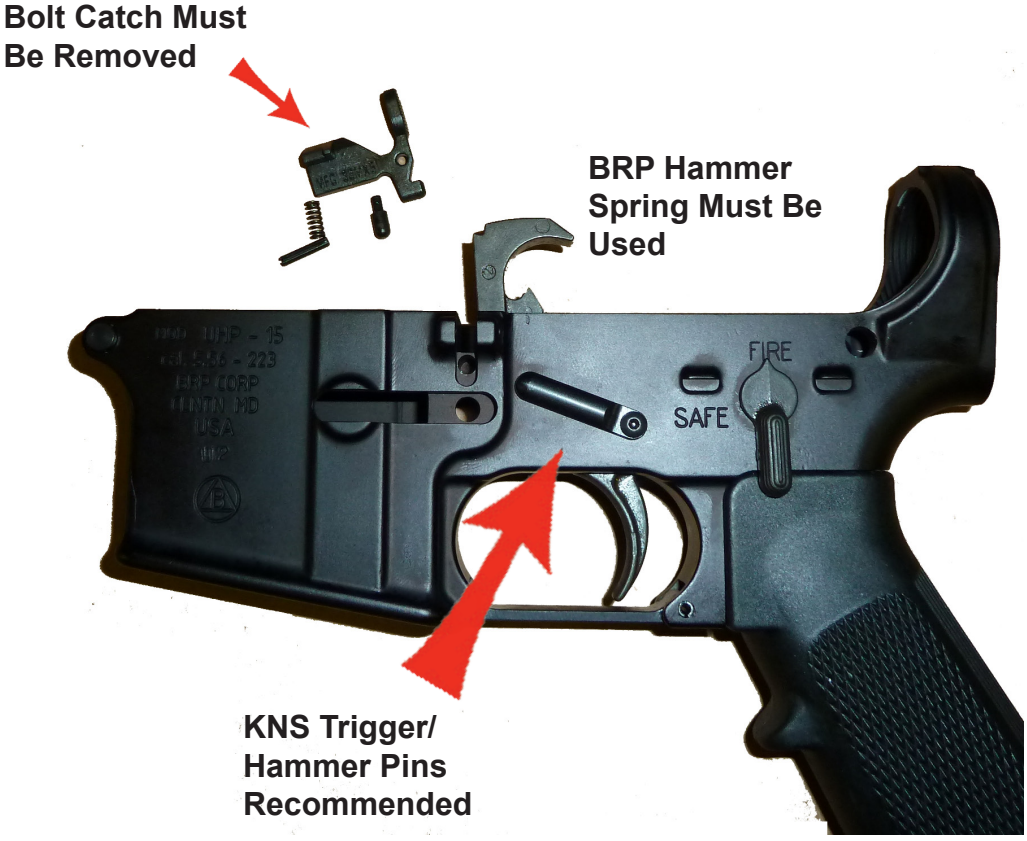
Installation Instructions

Prepare Your Lower Receiver

(use care and wear eye protection when removing spring-loaded parts)

1. **Remove the AR-15/M16 upper receiver**
2. **Remove the Bolt Catch Assembly**
   a. Remove spring pin (1) using 3/32 inch drive pin punch and hand hammer.
   b. Remove bolt catch (2), bolt catch plunger (3), and bolt catch spring (4).





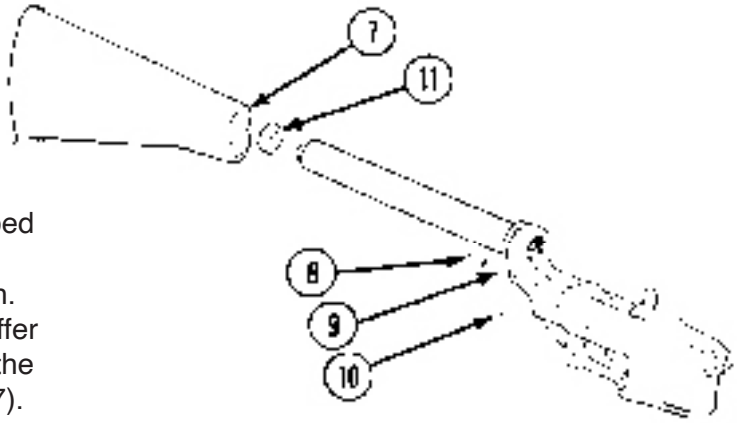
3. Remove the Buttstock Assembly

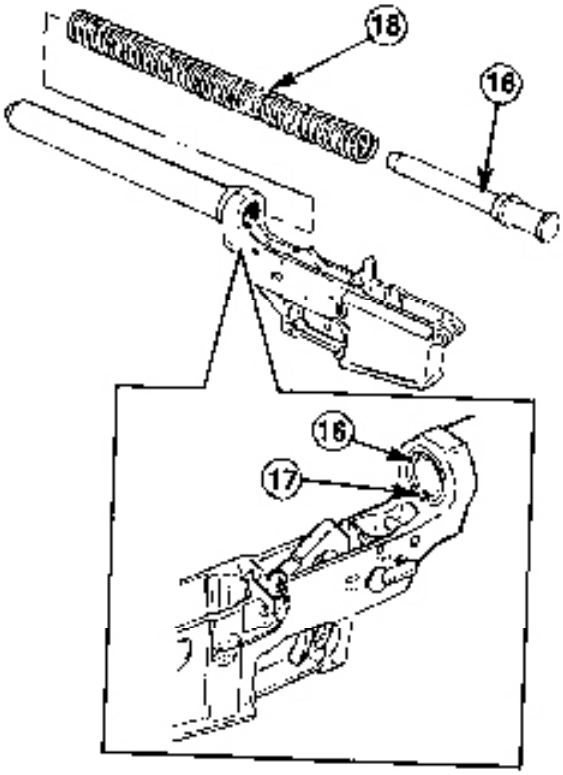
a. Remove self-locking screw

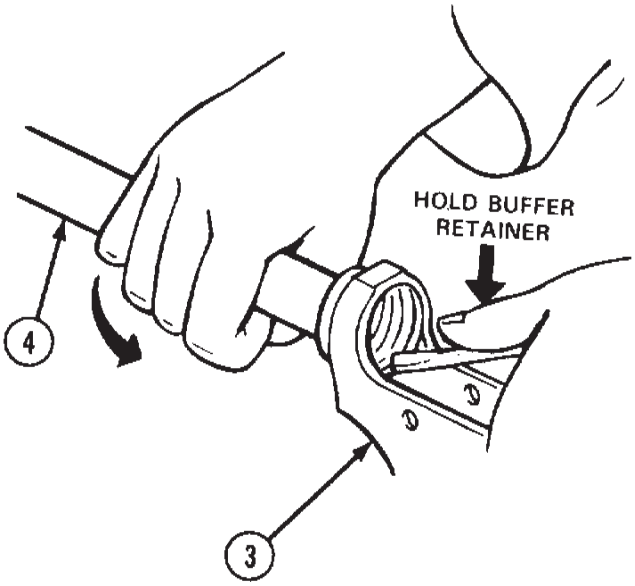
b. Remove buttstock assembly (7) carefully and catch helical spring (8), takedown pin detent (9), takedown pin (10), and stepped spacer (11) to prevent loss.

c. Press buffer assembly (16) in about 1/4 inch. Depress buffer retainer (17) and release buffer assembly (16) /and action spring (18) from the receiver while depressing buffer retainer (17).

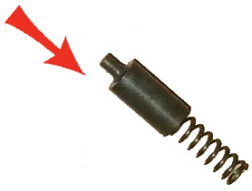
d. Unscrew the buffer tube (4) from the lower receiver (3) and remove buffer retainer (17) and buffer retainer spring.



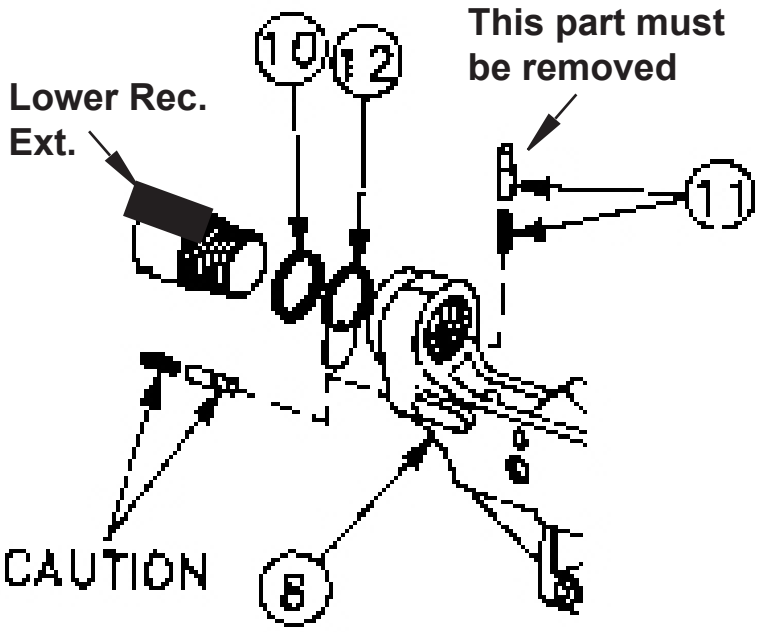


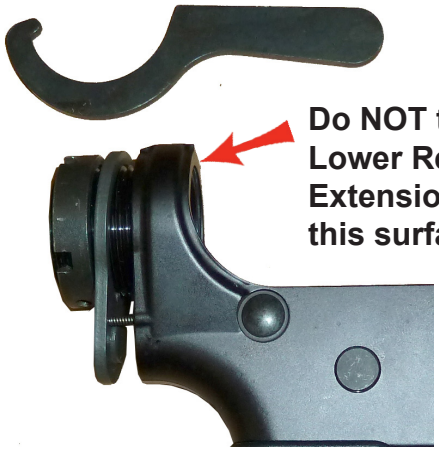


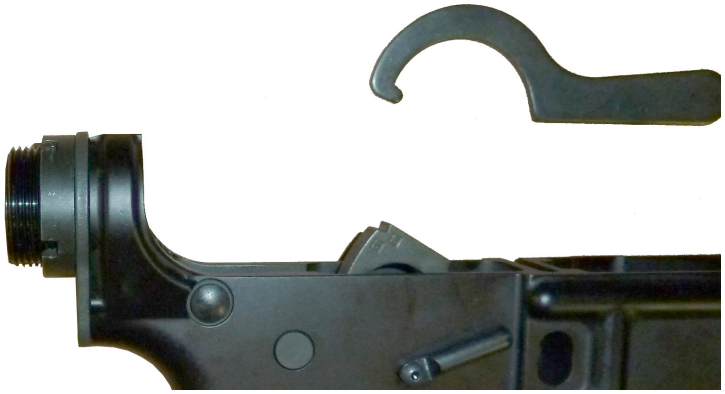
Buffer Retainer Must Be Removed



4. **Installing the XMG lower receiver extension assembly**
   a. Install takedown pin detent and helical spring (8).
   b. Install BRP lower receiver extension assembly
      1. Align the receiver end plate (12) onto the lower receiver extension with the lug of the rear receiver end plate facing forward.
      2. Preposition takedown pin, detent, and spring in lower receiver assembly.
      3. Screw the BRP lower receiver extension in until it reaches flush with the start of the buffer retainer hole.
      4. Align the lug of the receiver end plate (12) into the rear of the lower receiver. Screw the locking nut (10) forward until it contacts the receiver end plate.
      5. Using the special collapsible stock tool or your hand, tighten the locking nut (10) until snug (approximately 40 inch pounds).







5. Preparing the Upper Receiver

1. Make sure the barrel jacket with barrel is attached to the upper receiver.

Typically, the bolt carrier does NOT have to be removed to adequately clean the XMG. You may leave the bolt carrier and cocking handle attached to the receiver. The bolt head and firing pin can be quickly removed from the front of the receiver when detached from the barrel shroud assembly.

6. Installing the XMG Upper Receiver

1. Make sure the Bolt/Changing Handle Assembly is fully forward.
2. Attach the upper and lower receivers via the front and rear takedown pins on the lower receiver. If you have a BRP lower receiver your can tighten the set screw behind the grip to solidify the Upper/Lower attachment.

BRP Lower Receiver Tightening Screw

3. Attach the buffer housing without the buffer by screwing it into the rear of the upper receiver extension.
4. Insert the mainspring with the buffer by screwing it into the rear of the buffer housing. Make sure that the mainspring is firmly against the rear of the buffer bottom and bolt carrier, and that it surrounds the buffer spring.

5. Attach the Buttstock by inserting it into the rear of the Buffer Housing and turning it until it snaps. Rack the Bolt a few time to make sure the system is moving well.

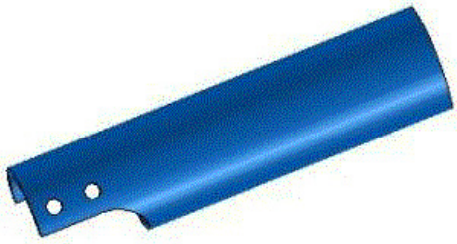
7. Installing the Tripod Adapters

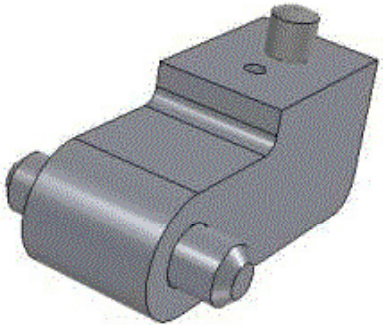
Trigger Puller:

This adapter enables the original MG-3 trigger actuator to pull the trigger of an M-16. Use the two set screws to clamp this adapter to the trigger-pulling surface of the trigger actuator.

Belt Guide:

This adapter is an optional part you can bolt onto the tripod to aid in supporting the belt. To install this part, drive out the two roll pins at the front of the left main tripod rail. The holes in this part will line up with the holes on the main tripod rail. Drive the enclosed long screws through the top of the belt guide and left main tripod rail. This part will be cocked slightly upward when installed.





Rear Mount:

This mount attaches to the XMG Receiver Extension and sits in the rear claws of the tripod. Attach this part to the underside of the receiver extension using the aligning dowel and socket head screw. It is designed to fit very tightly in your receiver extension in order to hold the XMG steady on the tripod for maximum accuracy. Once you attach this part there is no need to remove it.

Tuning

The XMG can be adjusted to deliver different firing pin strike pressures to compensate for variations in ammo and variation in original MG-34 parts. Points of adjustment:

1) Rear Shoulder: We use A/N steel, nylon, Bellville, and polyurethane buffers to space the firing pin tip relative to the face of the bolt when the bolt and carrier in lock-up position (fully compressed). This is accomplished by adding or removing washers on the rear shoulder of the firing pin. *Always check your firing pin exposure set by compressing the bolt and carrier to check your firing pin tip location when the bolt is in lock-up. This check can be done by removing the barrel jacket assembly, pushing the bolt carrier and cocking handle assembly forward in the receiver, and compressing the bolt while holding the cocking handle and bolt carrier in its most forward position. The firing pin tip should be slightly recessed in the face of the bolt, approx. .02 in. **If the firing pin tip is flush or beyond the face of the bolt, the gun may fire when you rack the bolt or slam-fire during cycle. Occasionally, these washers compress, and need to be replaced and reset.**

2) Anti-Slam-Fire Spring: The firing pin can be fitted with light version of the anti-slam-fire spring for hard-primered ammo. **This creates less resistance for the firing pin during cycle and may result in slam-fire with light-primered ammo.**

3) Heavy Hammer Spring: By using a heavy hammer spring, you can increase the force of you hammer strike. **This is the preferred adjustment to remedy a consistent lite-strike problem because it will not cause the XMG to slam-fire.**

***Note: the XMGs are tuned for Romanian and Olympic ammo from the factory. We have found these makes to be the best for use in just about all 8mm automatic firearms.**

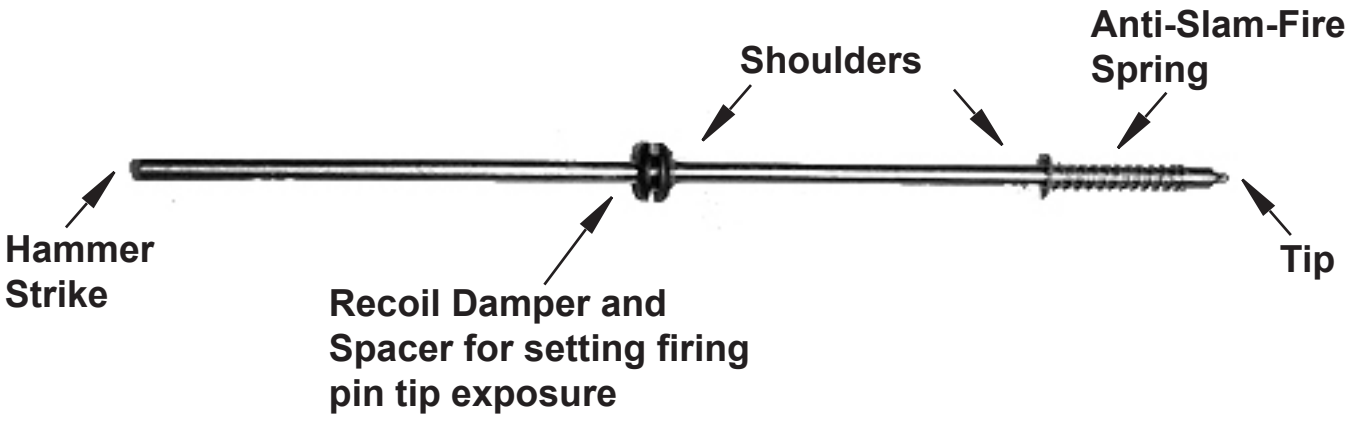
The goals of these adjustments are to make sure that the XMG consistently fires without light strikes or slam-fires.

If you are using unfamiliar ammo in the system, fire single shots and examine the primers for unusual deformation or weak hits.

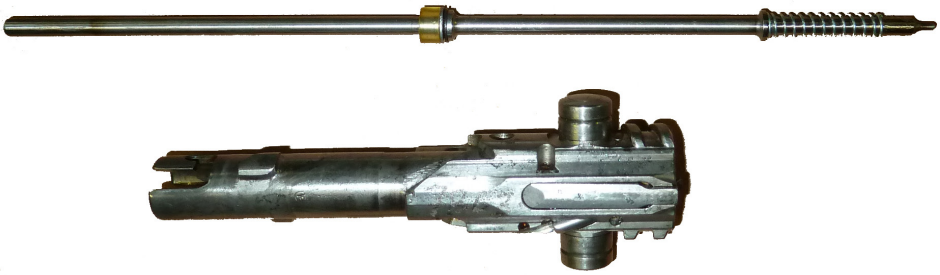
Typically, merely changing the hammer spring is the best way to remedy light-strikes. However, avoid over-striking light-primered ammo.

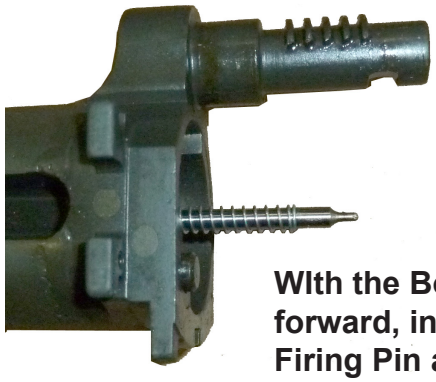
Also, removing a washer or adding a heavier anti-slam-fire spring is the best way to remedy a slam-fire problem.

XMG Firing Pin Assembly

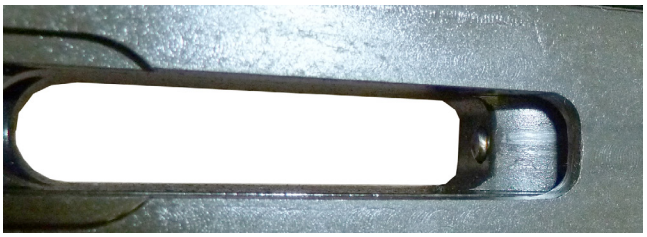


Firing Pin Timing

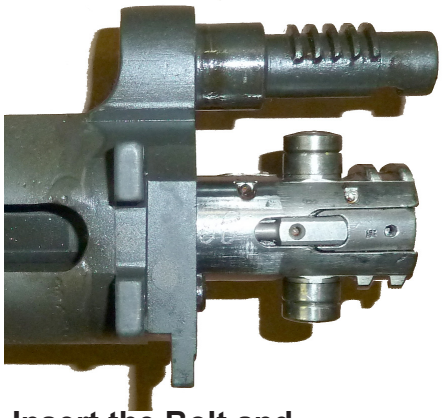




WIth the Bolt Carrier forward, insert the Firing Pin assembly.



Through the bottom of the Upper Receiver, the rear of the Firing Pin protrudes slightly from the Bolt Carrier Hammer Slot.

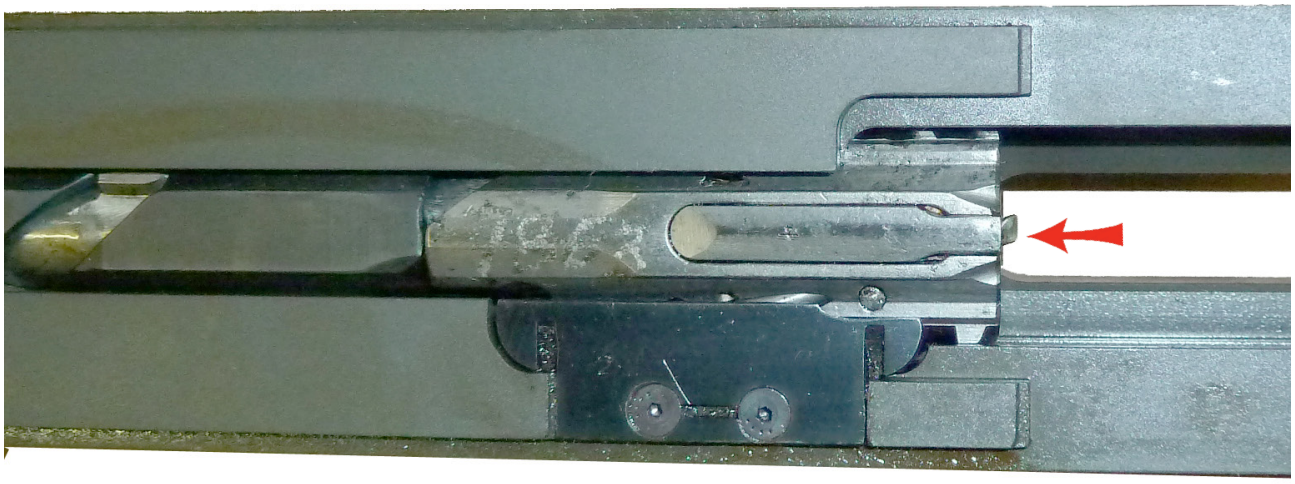


Insert the Bolt and twist into the Bolt Carrier making sure the Extractor is facing 'down' and the Roller Lugs are aligned with bolt slot in the Upper Reciever.

With one hand, grab the Upper Receiver and hold the Changing Handle/Bolt Carrier assembly forward so the bolt is protruding from the front of the Upper Receiver. WIth your other hand, twist the Bolt to simulate 'locked' position. Adjust the should spacers as necessary to position the Firing Pin Tip slightly recessed from the Cartridge Seat on the Bolt Face.

Ejector Timing

Retract the Bolt Assembly to the rear of the Ejection Port. At this point the Ejector Tip should protrude beyond the face of the Bolt (pictured). If it does not protrude at this point, the gun may fail to eject and the Ejector Plate or ejector should be replaced.

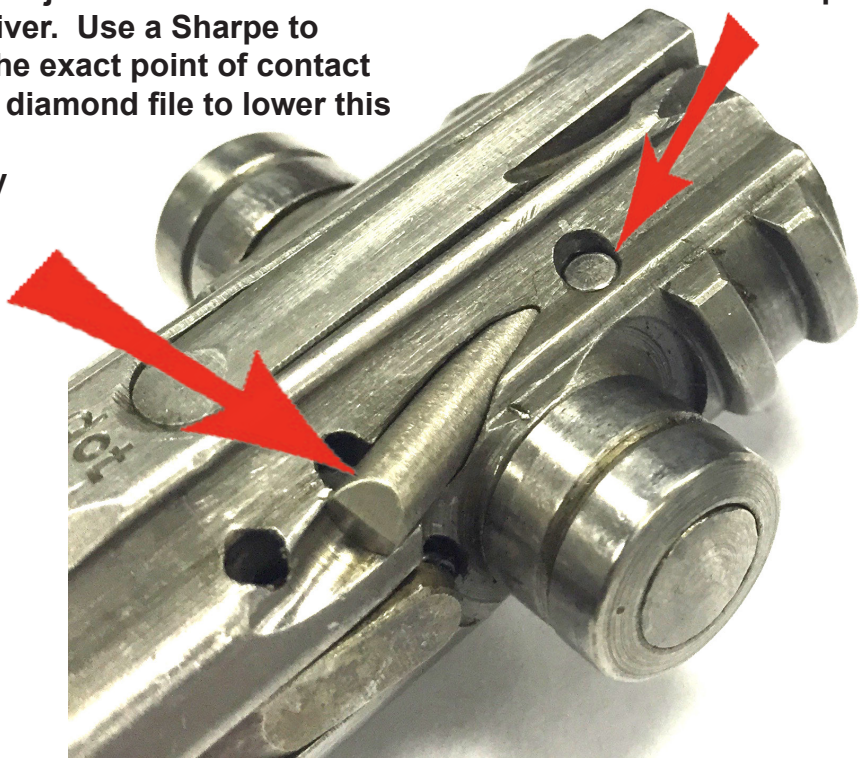


If the ejector is too long, the bolt will drag and jam in the receiver causing significant damage. The contact surface on the ejector to the plate must be filed or ground down at the same angle to ensure smooth operation. Cycling the gun with dummy rounds to check proper ejector fit and function is critical.

EJECTOR PLATE CONTACT TIMING:

This is the area where the ejector contacts the ejector plate on the receiver. Use a Sharpe to color this area and see the exact point of contact in your gun. Next, use a diamond file to lower this surface as necessary so the tip of the ejector only protrudes into the bolt face upon contact with the ejector plate. Be very careful not to lower this surface too much as it will decrease overall ejector tip protrusion. As the bolt continues to move rearward the ejector tip should protrude beyond the front of the bolt as pictured above.

The ejector retaining pin is driven out bottom to top



Operation

1. **Mounting the gun**
2. **Dismounting the gun**
3. **Filling the belt and magazines**
4. **Loading the gun**
5. **Firing the gun**
6. **Unloading the gun**
7. **Changing barrels**

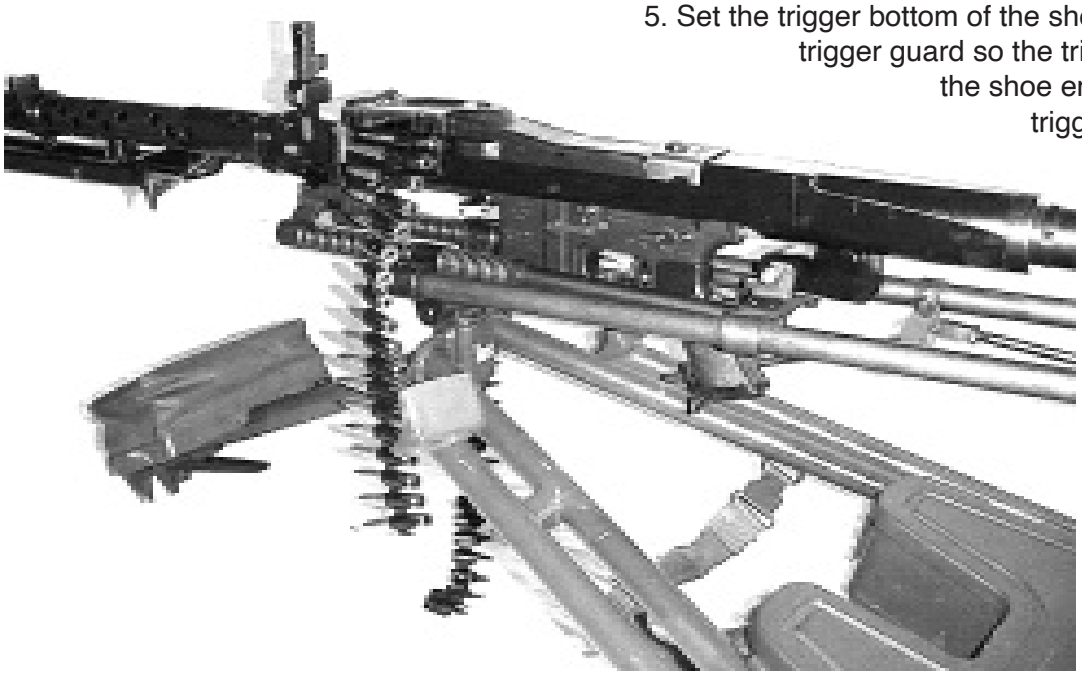
1. **Mounting the gun**

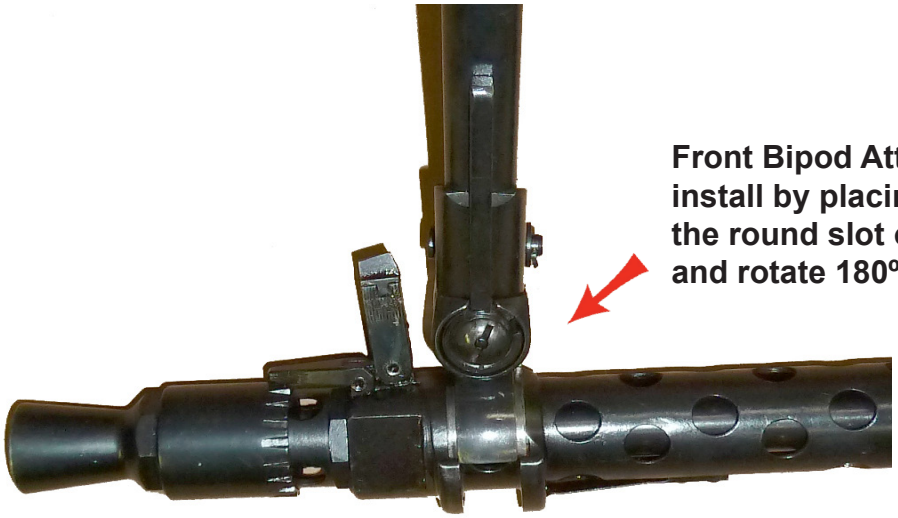
a. **On the Bipod.** Slide the curved head of the bipod into the front mounting guide on the barrel jacket. Depress the bipod catch spring on the underside of the barrel jacket, and rotate the bipod in the guide until the spring snaps into position. Turn the bipod legs toward the muzzle and set them on the ground. To adjust the spread of the legs, rotate the thumbscrew at the junction of the legs. The bipod may also be mounted on the rear of the barrel jacket for a longer horizontal traverse area. NOTE: If the gun is to be carried, collapse the bipod legs, fold them backward against the barrel jacket, and secure them to the knob on the jacket

b. **On the Anti-Aircraft Tripod**. Place the gun on the tripod so that the curved head on the tripod slides into the rear mounting guide on the barrel jacket. Depress the tripod catch spring and rotate the gun until the spring snaps into position. The tripod legs are both hinged and telescopic, to permit large adjustments in the height of the firing position. Smaller adjustments can be made by means of the adjustable support at the top of the tripod.

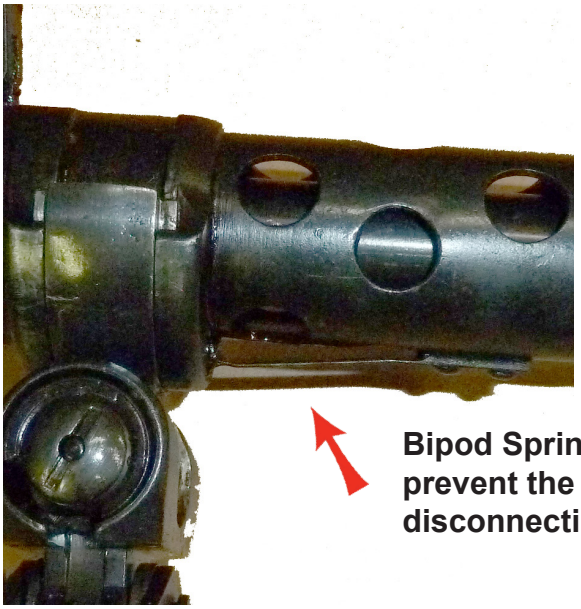
c. **On the Tripod Mount**. If the tripod mount is folded, it should be unfolded and erected as follows.

1. Release the clamping lever on the front leg, extend the front leg to the required position, and then lock the clamping lever.
2. Use the clamping lever to adjust the rear legs so that the mount is level. Make use of the bubble leveler built into the tripod when adjusting the front and rear legs.
3. Depress the Traverse and Elevation (T&E) cradle release buttons with one hand and lift the cradle with the other. Reattach the T&E assembly to the tripod base in its upright/functioning position.
4. To mount the gun you must first remove the buttstock while leaving the buffer assembly in place. Attach the rear tripod mount adapter to the upper receiver extension. Seat the rear projections into the claws on the cradle of the tripod (muzzle end up). Swing the forward tripod latch outward, lower the muzzle, and release.
5. Set the trigger bottom of the shoe on the base of the trigger guard so the trigger actuator part of the shoe engages the center of the trigger.
6. Elevate the tripod to the 90 setting on the elevation mechanism for level shooting.



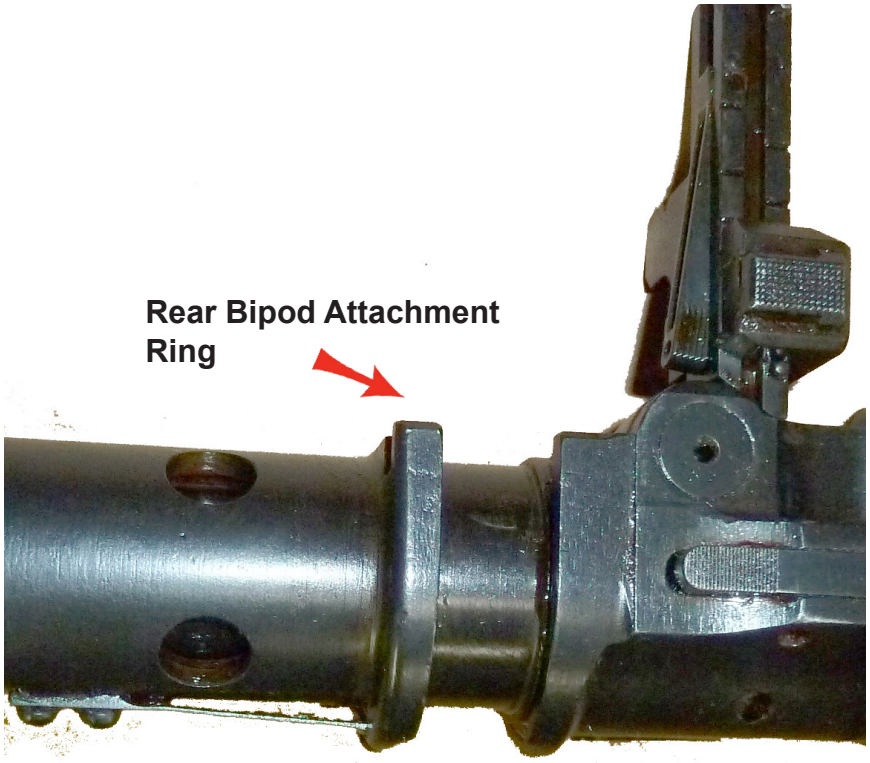


Front Bipod Attachment Ring: install by placing the bipod in the round slot on the jacket and rotate 180º



Bipod Spring Latch: This latch prevent the bipod from rotating and disconnecting from the jacket

Rear Bipod Attachment Ring



2. **Dismounting the Gun**
   a. To dismount the gun, proceed in the reverse order of mounting (par. c).

3. **Filling the Belts and Magazines**
   a. Belts
      1. Make sure that the belt is sufficiently tight to hold the round but sufficiently loose for the rounds to be stripped. Often, new belts will be too tight, requiring the belts to be loosened. Loosen the belt by pushing dummy rounds through each of the belt loops. NEVER USE LIVE ROUNDS TO LOOSEN BELTS.
      2. Place a 50-round belt on a flat surface, with the leading tab to the right and the tongues up. Insert a round into each link, and push it forward until the tongue snaps into the groove at the rear of the cartridge case. NOTE: Do not insert a round into the first three links unless you are using a short leading belt (e.g. starter tab). This is a precaution to prevent the belt from falling from the feed assembly. **Always load the belt from end to front. The bolt will crush an empty belt loop if it is fed through the system.**
      3. The 50-round belt can be extended by joining it to 50-round extension belts. Fill a 50-round extension belt, but do not fill the first link. Insert the tongue at the end of the leading belt into the rectangular opening in the first link of the leading belt into the rectangular opening in the first link of the extension belt, and join belts by inserting a round. It is common practice to join as many as four extension belts to a 50-round leading belt.
      4. Instead of a 50-round leading belt, it is possible to join five 50-round extension belts to a short leading belt (e.g. starter tab).
      5. If a starter tab is not available, and extension belt (or belts) can still be used. However, when loading the belt do not insert rounds into the first three links.
   b. 50-Round Belt Drum Magazine
      1. Fill an extension belt and turn it over with tongues on the bottom and an empty link to the right. Roll up the belt from the left end and insert it into the belt drum magazine with the empty link on the outside.
      2. If the magazine is to be used immediately or within a short time, fill a short leading belt and attach it. If the magazine is not to be used for some time, do not join a short leading belt. Instead, close the magazine slide and the cover to keep the dust out.
      3. The magazines are transported in carriers.
   c. Spring-Operated 75-Round Drum Magazine.
      1. Apply tension to the magazine springs by turning the two tensioning ratchets on the magazine. Place the magazine with the mouth up and insert one round after another until the magazine is filled.

4. Loading the Gun

a. **General.** Belt feed can be employed when the gun is mounted on the bipod, anti-aircraft tripod, or tripod mount. The 50-round belt drum magazine, and the 75-round spring-operated drum magazine, can be employed when the gun is mounted on the bipod, or anti-aircraft tripod, but not on the tripod mount.

b. **Loading the Gun with a Belt.**

1. The bolt must be fully home (in its most forward position), before the belt can be loaded. If the bolt is retracted, disengage the bolt hold-open and release it to its most forward position. Set the selector to SAFE.
2. Push the feed cover catch forward and open the feed cover.
3. Place the loaded belt on the feed block, so that the first round is on the slot of the feed block, and the leading tab is to the right.
4. Close the feed cover, making certain that the three pawls on the underside of the feed cover engage the first round, that is, the three pawls are between the first and second rounds.
5. After the operator has become proficient in loading the gun, he may keep the feed cover closed while loading the belt. In that case, make certain the bolt is fully home. Then, insert the leading tab into the feed opening on the left side of the gun, and pull it to the right until the three paws on the underside of the feed cover engage the first round.

AN OLD GERMAN TRICK: ***Fast Loading Without a Leading Tab***

Completely fill a 50 round extension belt. Load the belt in the feed mechanism by pushing the first rounds between the feed cover and feed tray. Using the stiffness of the rounds and belt, keep pushing until you hear two clicks. These are the sounds of the feed paws engaging the first two rounds.

5. Firing the Gun

Caution:	**The cocking handle moves with the bolt. Keep clear when firing!**

a. Before carrying out the following instructions, make certain that the gun has been loaded with a belt or magazine

b. **Firing on Bipod or Anti-Aircraft Tripod.**

1. With one hand, grasp the cocking handle in its most forward position and retract it until the bolt is in its most rearward position. Then **release** the cocking handle so that it chambers the first round with significant force.
2. Give the cocking handle a push forward to ensure that the bolt is locked.
3. Make sure that your keep your off-hand away from the moving parts and be sure to utilize the off-hand hook on the buttstock. NOTE: The rounds will eject from the underside of the gun directly in front of the lower receiver and the cocking handle will cycle along the right side of the XMG receiver.
4. Always have your selector set to SAFE during lulls in firing.
5. **Support the Belt** - An unsupported belt will flap during fire. This flapping stresses the feed system and even slows the cycle rate for the last 10 rounds. Since the weight of the belt decreases as rounds are fired, the unsupported belt flaps even more violently as it is pulled by the feed mechanism. Belts should be supported during normal firing of any full-auto, belt-fed weapon. Supporting a belt is usually done by a gunner's assistant, belt drum attached to the feed tray, feeder box, or flexible feed chute - as on most helicopter mounts. Although this belt-feeding device is strong enough to pull a heavy, unsupported belt, this type of use will eventually damage the system.

c. **Firing the Gun on the Tripod Mount**.
   1. With one hand, grasp the cocking handle in its most forward position and retract it until the bolt is in its most rearward position. Then release the cocking handle so that it chambers the first round with significant force.
   2. Give the cocking handle a push forward to ensure that the bolt is locked.
   3. Always have your selector set to SAFE during lulls in firing.
   4. Traverse and Elevation (T&E)
      a. The front end of the cradle is carried on a swivel mounting at the junction of the three tripod legs, while the rear end is supported by the elevating gear. The front leg is telescopically adjustable, and is provided with a clamping lever for fixing the telescopic parts after they have been adjusted. A traversing arc, on which the elevating gear is carried by a traversing slide, acts as a brace between the two rear legs which are jointed, each joint being fitted with a clamping lever.
      b. Elevation is adjusted by a handwheel centered along the elevation screw, while adjustments for line are made by shifting the traversing slide along the traversing arc by means of the handle on the T&E gear. A wing nut is provided for clamping the elevating gear and a lever for locking the traversing slide. Adjustable elevating and traversing stops are also provided to enable the gun to be elevated and traversed between predetermined limits. The traversing stops are arranged for the traversing arc, which is graduated to facilitate adjustment of the stops.
      c. Fire the XMG by using the lever on the rear right of the T&E mechanism. You can set the trigger lever to *up*, *down*, or *out* depending on your shooting position and preference.
      d. **Support the Belt** - An unsupported belt will flap during fire. This flapping stresses the feed system and even slows the cycle rate for the last 10 rounds. Since the weight of the belt decreases as rounds are fired, the unsupported belt flaps even more violently as it is pulled by the feed mechanism. Belts should be supported during normal firing of any full-auto, belt-fed weapon. Supporting a belt is usually done by a gunner's assistant, belt drum attached to the feed tray, feeder box, or flexible feed chute - as on most helicopter mounts. Although this belt-feeding device is strong enough to pull a heavy, unsupported belt, this type of use will eventually damage the system.

6. Unloading the Gun

a. **Removal of the Belt**. Set the selector is set to SAFE. Push the feed cover catch forward and raise the feed cover. Lift out the belt. Cock the gun to dechamber the round and set the bolt hold-open to retain the bolt. Inspect to see that there is no round in the chamber.

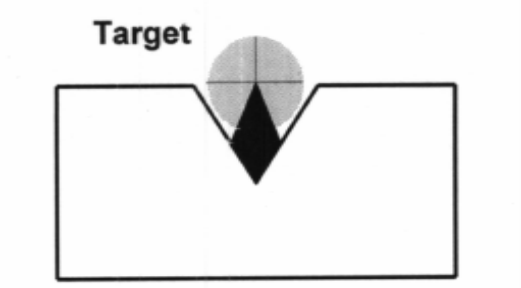
b. **Removal of the 50-round Belt Drum Magazine**. Set the selector to SAFE. Push the feed cover catch forward and raise the feed cover. Lift out the belt and disconnect the magazine from the gun. Cock the gun to dechamber the round and set the bolt hold-open to retain the bolt. Inspect to see that there is no round in the chamber.

7. Changing Barrels

a. **General.** The barrel must be changed after about 250 rounds have been fired continuously or with only short intervals between bursts.
   1. Unload the gun (par. 6). Retract the bolt and use the bolt hold-open to retain the bolt in a rearward position disengaged from the barrel.
   2. Depress the receiver catch by means of the cranked lever, and rotate the barrel casing nearly 180 degrees. Be careful not to disrupt the cocking handle because it will drop the bolt hold-open.
   3. Remove the barrel with the leading tab or any other convenient tool or heat resistant pad. Insert a fresh barrel and rotate the barrel jacket until the receiver catch snaps into position. Return the bolt to its fully home position by pulling back on the cocking handle to disengage the bolt hold-open.

Sights and Optics

1. **Fixed sights**. The sights on this system are original MG34 sights. These sights consist of a blade front sight and a "V" notch adjustable rear sight. The following is the proper sight picture. These open sights can be folded down when not in use.



2. The sights are calibrated in meters for ranges out to 2000 meters.
   a. Conversion table.

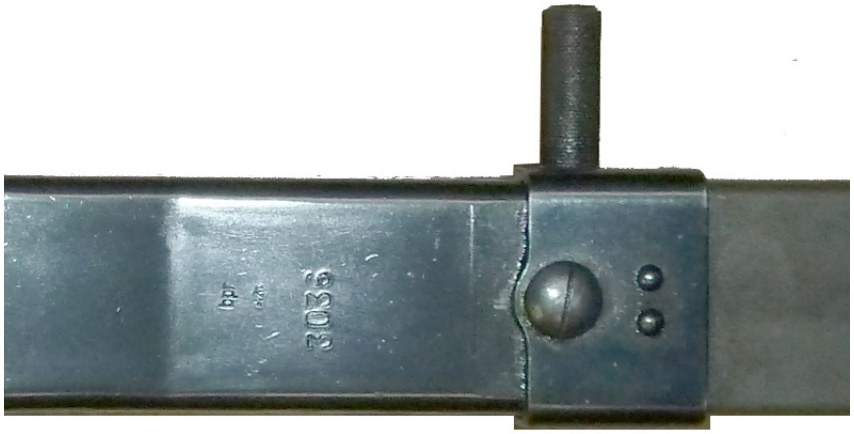
Meters	Feet	Yards
1	3.28	1.09
50	164	55
100	328	109
200	656	218
300	984	327
400	1312	436
500	1640	545
600	1968	654
700	2296	763
800	2624	872
900	2952	981
1000	3280	1090
1100	3608	1199
1200	3936	1308
1300	4264	1417
1400	4592	1526
1500	4920	1635
1600	5248	1744
1700	5576	1853
1800	5904	1962
1900	6232	2071
2000	6560	2180

3. **Anti-Aircraft sights**. For anti-aircraft firing, the blade sight is not used. A speed-ring sight, can be mounted on the bracket especially for this purpose on the barrel jacket. With the speed-ring sight, an aperture rear sight is used. This aperture is hinged to the pillar of the standard rear sight and can be folded away when not in use. The anti-aircraft sights are offset to the left while the ground sights are directly above the axis of the bore. **(DO NOT SHOOT AT AIRCRAFT)**

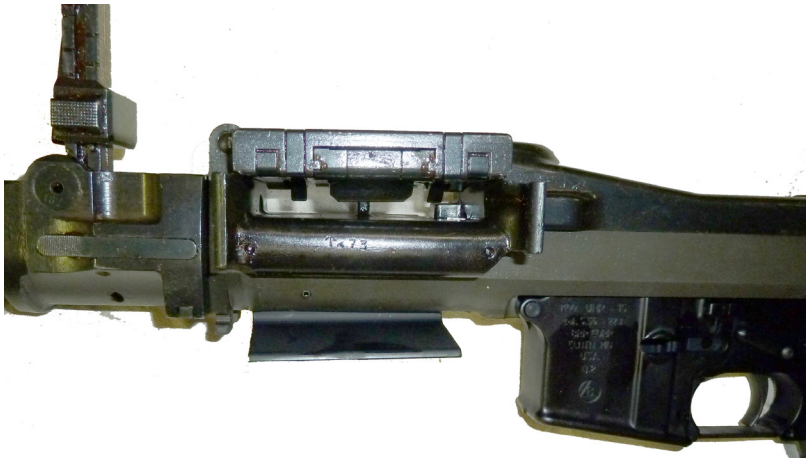
4. **Tripod Optics:** This periscope optic is mounted on the left of the T&E cradle. It's ***zero*** is set by screws on the T&E cradle. The reticle is European 'post style' and can be adjusted from 0 to 1600 meters. However, the ranging feature is calibrated for 7.62 NATO ballistics. It also features setting for low-light and high-light conditions. Some units are equipped with an illuminator box to illuminated the reticle for low-light shooting.

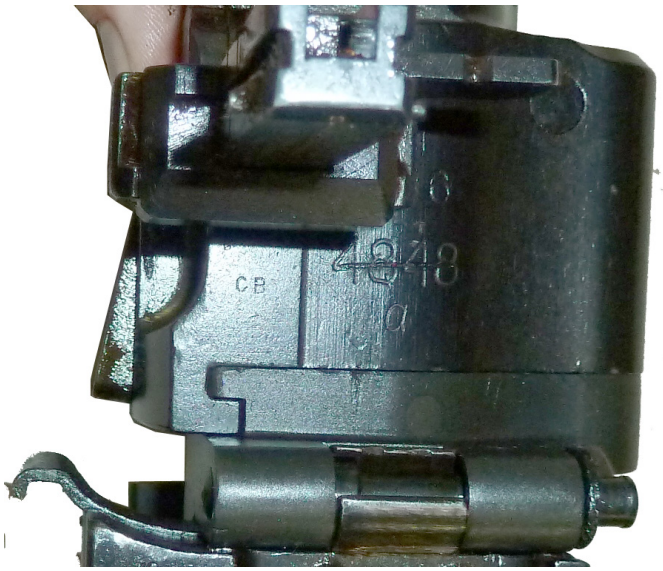
Barrel Change

1) Retract the Bolt Assembly by pulling the Charging Handle to its rearward position.



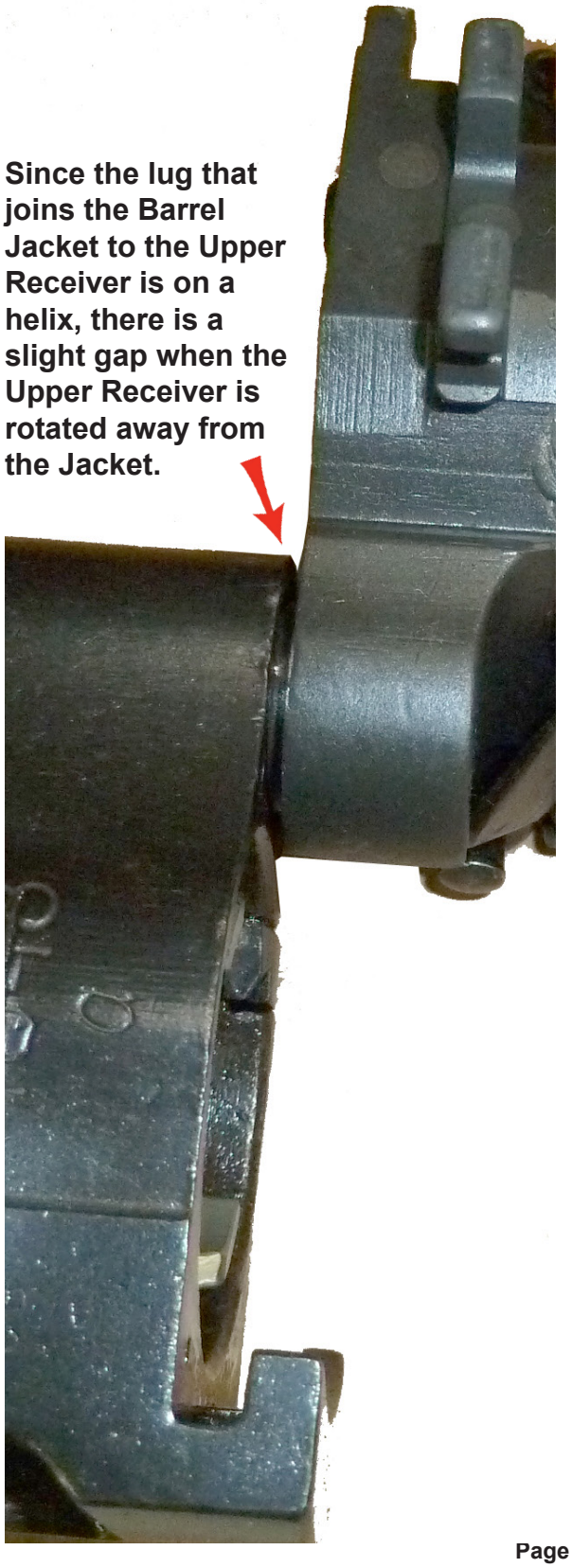
2) With the Charging Handle held rearward, insert the Bolt Hold-Open devise through the Ejection Port and release the Changing Handle to allow the Bolt to rest on the Hold-Open.





3) Press the Barrel Jacket Release Lever on left side of the Barrel Jacket. With your other hand, grasp the Upper Receiver and twist 'down' to rotate the Upper Receiver counter-clockwise from the Barrel Jacket. Be very careful to keep the Barrel Jacket level so the Barrel does not fall out.

Since the lug that joins the Barrel Jacket to the Upper Receiver is on a helix, there is a slight gap when the Upper Receiver is rotated away from the Jacket.



4) At this point, the Barrel can be Removed by tilting the Barrel Jacket or pulling it out using a Starter Tab or other suitable tool. See the "Disassembly" section of this manual for instructions on separating the Upper Receiver and Barrel Jacket.

Section IV
Trouble Shooting

1. General

a. This section is intended to provide necessary instructions in immediate action, and malfunctions and corrections. These instructions should be studied before any firing is done by the operator.

2. Immediate Action

a. Immediate action is the immediate and automatic application of a remedy. It is to be applied immediately and automatically to a gun that jams, or otherwise malfunctions. When stoppage occurs during firing, perform the immediate action described below, or such portions thereof as are required to remedy the stoppage.

b. **Failure of the Gun to Fire**. If the loaded gun fails to fire when the trigger is squeezed, proceed immediately as follows:

1. Wait 30 seconds before opening the chamber.
2. Cock the gun by a quick pull on the cocking handle. Release the cocking handle so that it chambers the next round with significant force. Push the cocking handle forward to make sure it's locked in place.
3. If a round is ejected, unload the gun (Section II) and analyze what went wrong. It may require a firing pin and/or hammer adjustment.
4. If the round is not ejected, set the selector at SAFE, and unload the gun (Section II).
5. Inspect the gun to determine if the source of the malfunction was other than a defective round. For example, new belts must be broken-in and loosened. Also, re-check that you followed correct loading and firing procedures (Section II)
6. Load the gun and resume firing.

3. Malfunctions and Corrections

a. Proper care of the gun before, during, and after firing will usually eliminate most stoppages. Stoppages or other malfunctions which cannot be remedied by the application of immediate action should be dealt with in accordance with instructions described in the following paragraphs.

4. Feed Stoppage or Malfunction. It is dangerous to investigate a feed stoppage or malfunction by raising the feed cover without first cocking the gun or retaining a hold on the cocking handle. Should a live round remain in the chamber, the raising of the feed cover would allow the bolt to continue forward and increase the chance of an accidental discharge, thus endangering the operator and damaging the gun. Should a stoppage occur during firing, set the selector to SAFE, cock the gun, retain hold on the cocking handle, and retain the bolt using the bolt hold-open on the underside of the receiver. Notice if a round ejected. While maintaining hold of the cocking handle with your right hand use your left hand to open the feed cover and lift out the belt. Inspect the chamber to make sure no round is present. If the gun cannot be cocked, set the selector to SAFE and apply a backward pull on the cocking handle and, at the same time, raise the feed cover and remove the belt. The gun can then be cocked.

5. Failure to Fire.

1. CAUSES. Failure to fire is generally caused by:
   a. Defective ammunition.
   b. Defective firing pin or lower receiver problem
   c. Bolt not fully closed
2. REMEDIES.
   a. If the primer of the round is deeply indented, the round is defective and must be discarded
   b. If the primer is not indented or only slightly indented, the firing pin or hammer portion of your lower receiver may be worn or broken, or the bolt may not have been fully home. Check for dirt or any other obstruction on/in the bolt and upper receiver, and in the breech end of the barrel. Check for a ruptured case in the chamber. Remove all obstructions.
   c. If driving spring is too weak to drive the bolt fully home, it is worn or broken and should be

replaced with an original MG34 drive spring. If a firing pin is worn or broken, it should be replaced with a BRP CORP manufactured firing pin. Do not attempt to use an original MG-34 firing pin.

6. Failure to Feed.

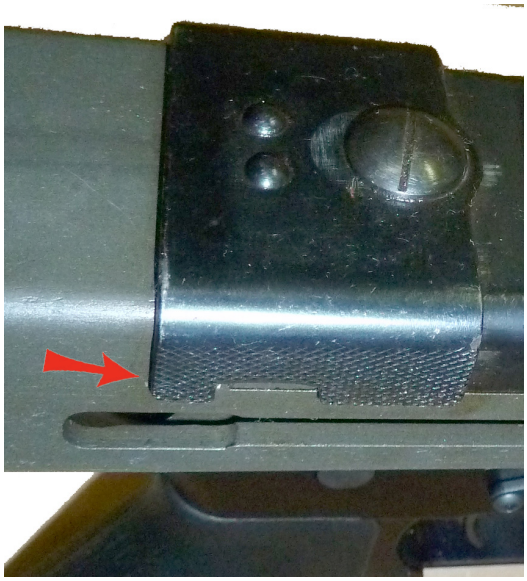
1. CAUSES. Failure to feed may be caused by:
   a. Defective belt
   b. Insufficient recoil of bolt to pick up new round
   c. Broken feed piece on top of belt
   d. Broken feed cover or feed tray
2. REMEDIES.
   a. If the belt does not feed cartridges into gun because it is deformed or broken, it should be fixed by a skilled individual or discarded. Alternatively, the belt may be too tight and must be loosened as described in Section II, 3.
   b. Insufficient recoil may be due to reduced blast boosting or to obstruction in receiver or bolt. Adjust the blast booster the required number of notches until sufficient recoil is obtained. Remove the receiver from gun and eliminate obstruction.

7. Failure to Extract.

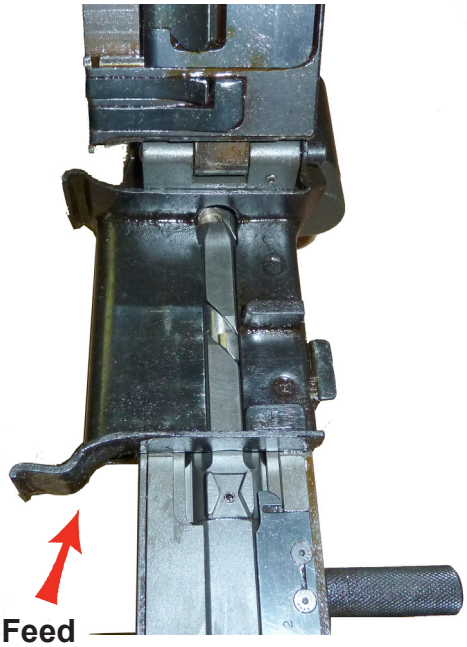
1. CAUSES. Failure to extract is generally caused by:
   a. Dirty chamber
   b. Dirty ammunition
   c. Broken extractor.
2. ACTION.
   a. When a failure to extract occurs, the bolt may be found fully home with a spent case in the chamber. Generally, most failures to extract can be remedied by pulling the cocking handle smartly to the rear. If this does not remove the case, use a cleaning rod.
   b. Sometimes the empty case will be left in the chamber, the extractor ripping through the base of the cartridge. When this occurs, the bolt generally will attempt to feed a fresh cartridge into the chamber. It will then be necessary to remove this round before the spent case can be removed.
   c. Where a dirty chamber or dirty ammunition is indicated, clean the chamber and discard or clean the dirty ammunition. The presence of even nearly invisible particles of dust or sand in the chamber or on ammunition will cause failure to extract. **It is advisable to lubricate the belt with paraffin wax if cartridges are to be left in it for more than a short period.** A belt once lubricated can be used 10 times before lubricating again.

Disassembly and Assembly

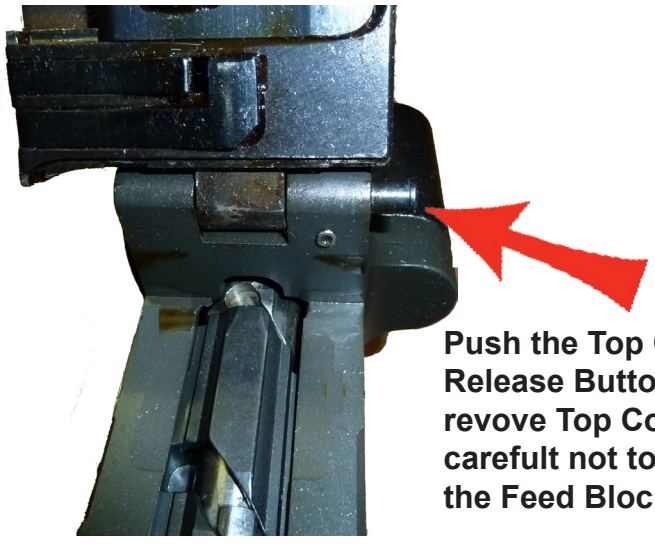
1. **General**
   a. Before performing the following operations, make certain that the gun has been unloaded and removed from any mount. See Section II,1 for dismounting instructions.
2. **Disassembly**
   a. **Butt Stock**. Press the butt catch below the butt, rotate the butt 90 degrees and remove it.
   b. **Feed Cover and Feed Block**. Before proceeding, make certain the bolt is forward and fully home, and no round is in the chamber. Then press the feed cover catch forward and raise the cover. Press the feed cover axis pin to the left and remove the feed cover. Raise the feed block and remove it.



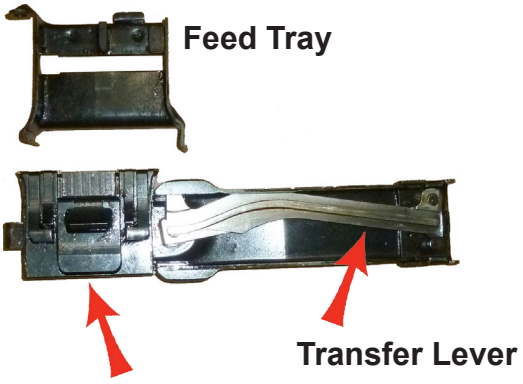
Push the Top Cover Latch forward, and lift Top cover



Lift rear of Feed Tray and remove



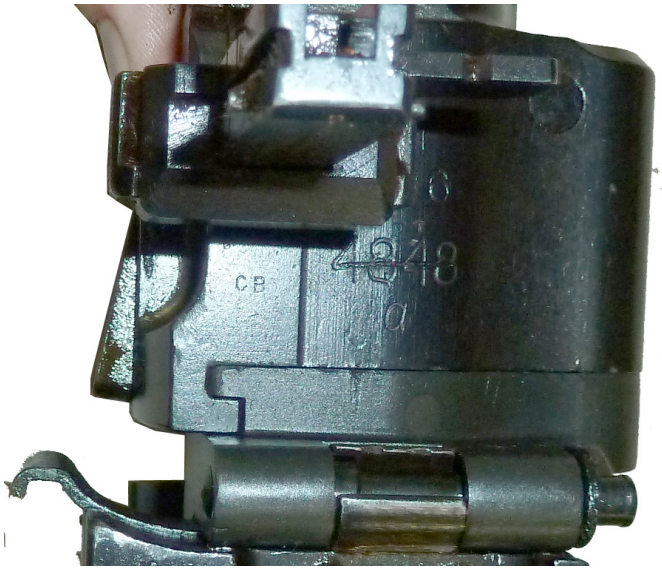
Push the Top Cover Release Button and revove Top Cover. Be carefult not to drop the Feed Block.

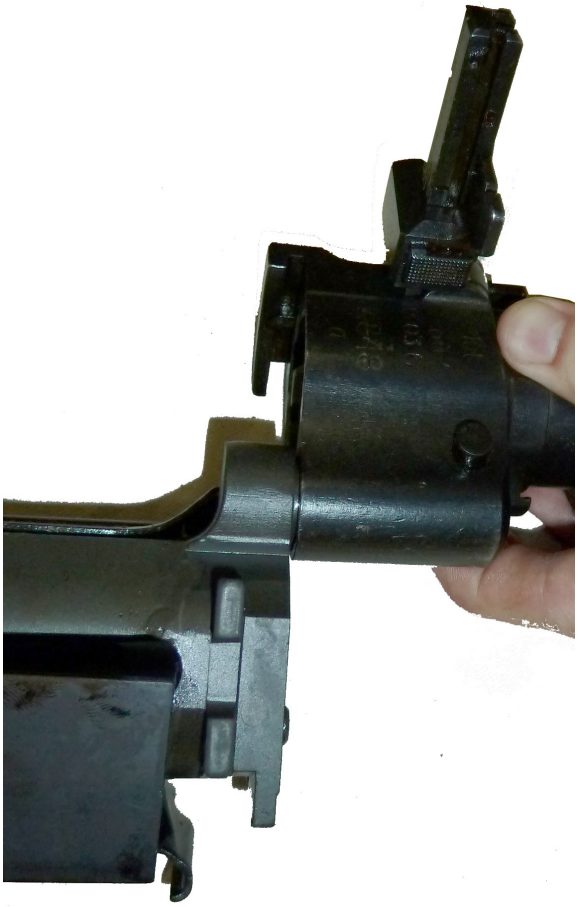


c. **Buffer Cap.** Unscrew the buffer at the rear end of the receiver, and remove the buffer taking care not to let the spring rapidly decompress.
d. **Remove the Mainspring**.

e. **Remove the Lower Receiver**. Disconnect the two takedown pins and remove the lower receiver.

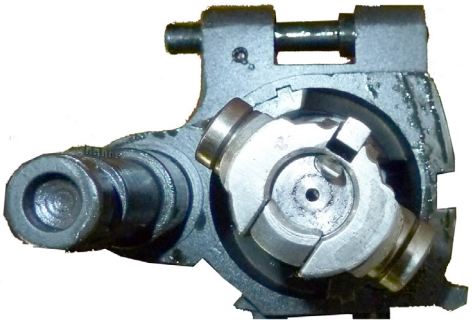
f. **Removal of Barrel**. With the Bolt retracted, depress the receiver catch, rotate the body about 170 degrees and remove the barrel.
i. **Removal of Barrel Jacket**. Depress the receiver locking pin catch and remove the barrel jacket from the receiver.

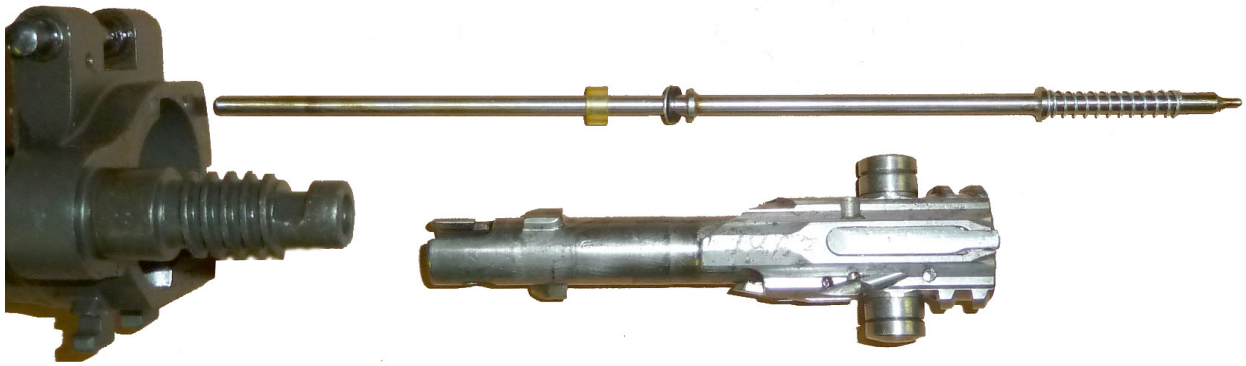


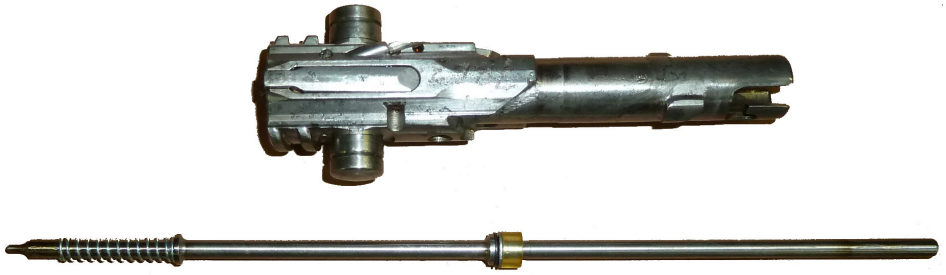


j. **Flash Eliminator and Recoil Booster**. Raise the front end of the flash eliminator catch and unscrew by hand the flash eliminator with the recoil booster. The threads are right-hand.

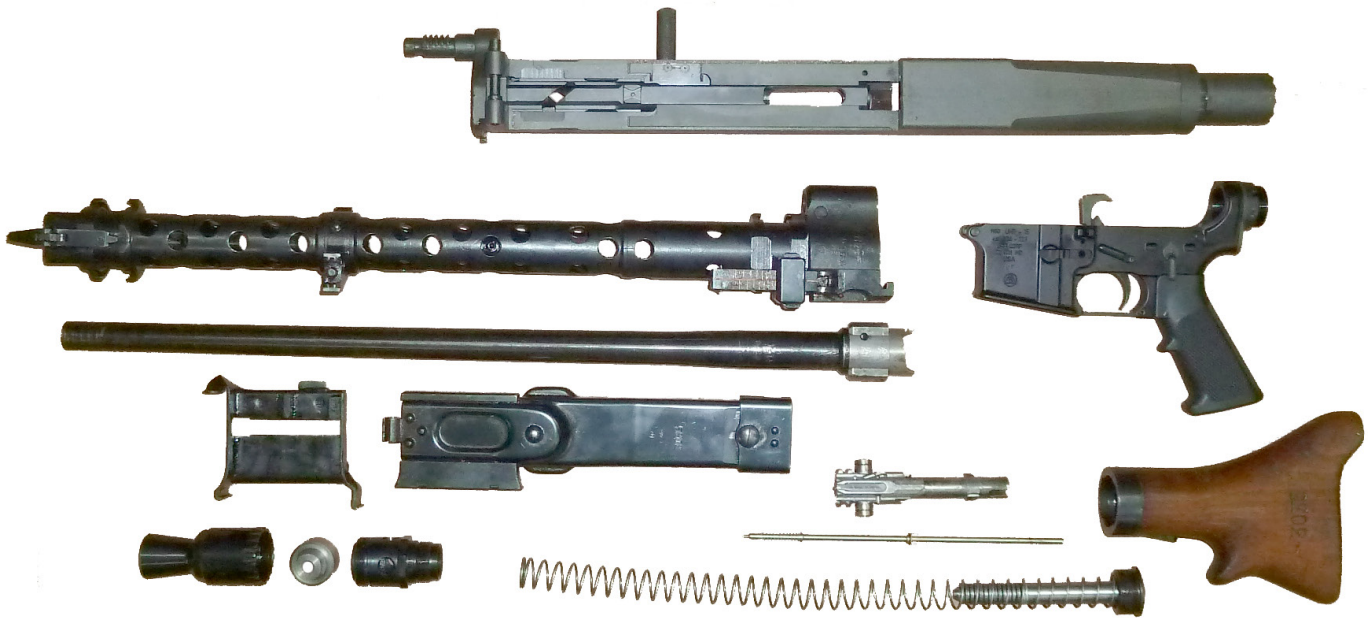
k. **Disassembly of Bolt Assembly**. Remove the bolt head and remove the firing pin. Rotate the bolt head clockwise and remove it from the bolt carrier. Pull the Firing pin forward and out making sure that the spacers do not fall from the rear of the Firing Pin assembly







***Typically you do not have to remove the Buffer Housing, Bolt Carrier, or Cocking Handle from the Receiver for standard cleaning. Remember, the Bolt Head and Firing Pin can be removed and re-installed from the front of the Receiver. As the unit, the Receiver, Upper Receiver Extension, Buffer Housing, Bolt Carrier and Cocking Handle should remain assembled for routine cleaning. Only the forward six inches of the Receiver is exposed to powder residue that must be thoroughly cleaned.**



3. Assembly

a. Prior to assembly, all groups must be free of dirt, rust, and other extraneous matter. Metal parts in contact must be covered with a light film of CLP. Assembly is in the reverse order of disassembly. Also, refer to the **Installation Instructions** at the beginning of this booklet.

Care and Preservation

1. General

a. Proper functioning and accuracy of firing depend largely on care, cleaning, and oiling. The weapon should be always checked for cleanliness and lubrication before use. The following instructions should be carefully observed.

2. Cleaning of Gun Received from Storage

a. Guns and mounts which have been properly stored will be coated with Cleaner, Lubricating, Preservative (CLP), or rust-preventative compound. Guns received from storage will usually be coated with heavy, rust-preventative compound. Use SOLVENT, dry-cleaning, to remove all traces of compound. Apply the solvent with rag swabs to large parts, and as a bath for small parts. Take care to remove the compound from all recesses in which springs or plungers operate. After removing all traces of the compound, allow the parts to dry and then wipe with a clean, dry rag.

b. Persons handling parts during and after such cleaning should wear gloves to avoid leaving finger marks which are acidic and usually start corrosion.

3. Normal Care

a. Normal care includes care of the gun necessary to preserve its appearance and condition during periods when no firing is being done. Anytime after the gun is handled, it should be inspected for proper condition and cleanliness.

b. **Bore**.
   1. Remove the barrel.
   2. Assemble a cloth patch to a cleaning rod and insert the rod into the bore through the breech end. Run the patch back and forth several times through the entire length of the bore and chamber. Repeat with several patches until the patch comes out clean. DO NOT USE A BRUSH IF THE BORE IS CHROME LINED – ONLY USE PATCHES.
   3. Impregnate a patch with CLP. Run the patch through the bore several times.

c. **Wood and Metal Surfaces**. Use a small cleaning brush to clean screw heads and crevices. With a clean dry cloth, remove all moisture, perspiration, and dirt from the metal surfaces, and then wipe with a cloth lightly oiled with CLP. This protective oil film should be maintained at all times. To clean the outer wood surfaces, wipe a cloth lightly oiled with CLP. Then clean with a soft dry cloth.

d. After cleaning and protecting the gun as described above, store the gun. Muzzle covers, gun covers, plugs, and rack covers should not be used because they collect moisture and promote rusting.

4. Care Preparatory to Firing.

a. Before firing, the following instructions should be carefully observed in order to assure proper functioning of the gun.

b. Disassemble the gun into its main groups.

c. Run clean patches through bore and chamber to remove all dirt and oil.

d. Thoroughly clean all metal parts and lightly oil with CLP.

CAUTION: Do not oil the bore and chamber before firing because dangerous pressures may develop.

e. Lubricate the following with a drop of low viscous oil such as ***Bob Marvel's Custom Gun Oil***.
   1. Ejector groove on bolt.
   2. Plunger at rear of extractor.
   3. Firing pin shaft.
   4. Crevices around feed piece.
   5. Underside of the 3 belt feed pawls.
   6. Groove for cocking handle on receiver.

f. Lubricant should be applied lightly because oil has a tendency to collect dirt which may act as an abrasive on the operating parts.

g. After gun groups have been oiled as described above, assemble the gun and wipe all outer surfaces with a lightly oiled rag.

h. DOUBLE CHECK you Firing Pin protrusion.

5. Care on the Range and in the Field

a. The gun must be kept free of dirt and lubricated to obtain proper efficiency during firing. The following instructions should be followed carefully.

b. **Before Loading**

1. Check that the bore is free from dust, dirt, mud, snow, or other debris.
2. Check that the chamber is clean and free from oil.
3. Test the trigger mechanisms at SAFE and FIRE.
4. Work the bolt back and forth to see that it is clean and well oiled, and that it works freely.
5. Examine the belts to see that they are free of dirt and properly loaded.

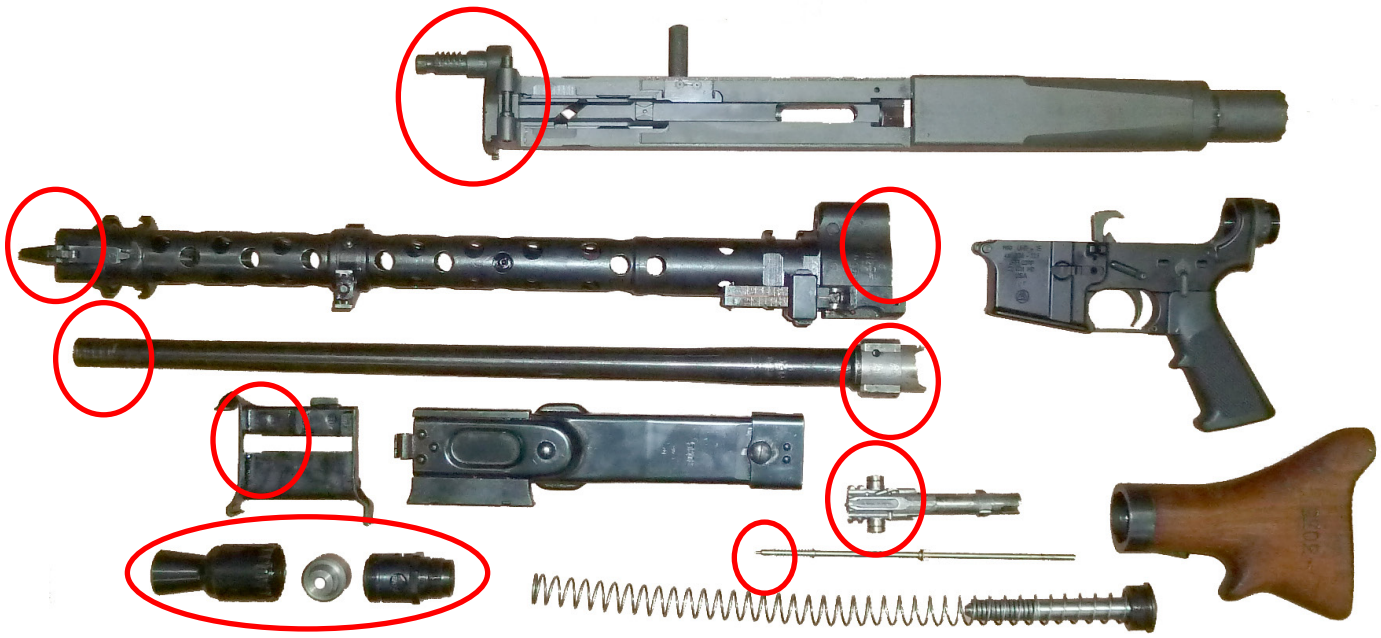
c. **During Fire**. In general, it should not be necessary to disassemble the machine gun in the field for cleaning. However, if the mechanism becomes very dirty or functions sluggishly, disassemble the gun into its groups, and clean as instructed in Sections V and VI.

6. Care After Firing (The weapon should be cleaned IMMEDIATELY after each session of firing and not later than the evening of the day on which it was fired.)

If corrosive ammo was used, CLEANER should be something like a standard cleaner/degreaser such as Castrol Super Clean, Simple Green, etc. These 'soapy' cleaners will neutralize the corrosive residue. Oils or solvents will not neutralize the corrosive residue. After using the cleaner/degreaser, the parts should be thoroughly dried with heat and/or compressed air, then oiled with CLP to prevent rust.

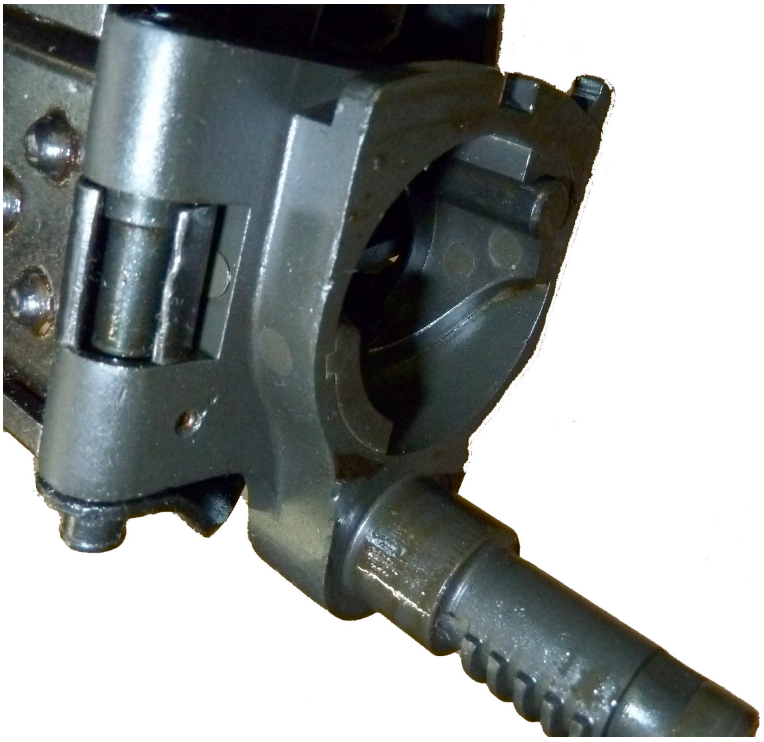
Disassemble per instructions to the following state:

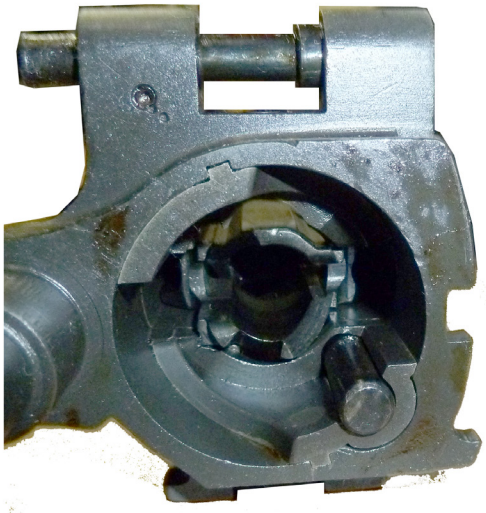
• Areas to thoroughly clean are circles. Neglecting any of these areas with result in permanent damage.



b. **Barrel:** Immediately after firing or as soon as possible, remove the barrel and run several wet patches impregnated with CLEANER, rifle bore, through the bore. If CLEANER, rifle bore is not available, use warm soapy water or warm water alone (in the absence of these, cold water). Remove the patch from the cleaning rod and attach a cleaning brush. Run the brush through the bore several times. DO NOT USE A BRUSH IF THE BORE IS CHROME LINED – ONLY USE PATCHES. Make certain the brush goes all the way through the bore before reversing the direction. Remove the brush and run several patches wet with clean water through the bore and chamber again. Follow this with dry patches until they come out clean and dry. Finally, run a patch impregnated with CLP through the bore and chamber.
   - The froward outside ribbed parts of the barrel must be thoroughly brushed. A nylon M16 cleaning brush will typically work. If the residue is not coming off, a stainless steel bristle brush may be necessary to remove all of the residue.
   - The inside grooves of the collar must be brushed and wiped clean of all residue.

c. **Booster Area:** Soak and wipe the flash hider, booster cone and barrel sleeve in CLEANER. A stainless steel bristle brush may be necessary to remove all of the residue.
d. **Bolt:** Soak and wipe the Bolt with CLEANER. The face and grooves of the collar must be brushed and wiped clean of all residue. Compressed air should be used to clean our the internal areas, extractor pocket, and ejector slot.
e. **Barrel Jacket:** The front and rear inner surfaces should be wiped clean with CLEANER, dried then oiled.
f. **Upper Receiver:** The front inner surfaces should be wiped clean with CLEANER, dried then oiled. Special attention must be paid to the cams and recuperator pistol

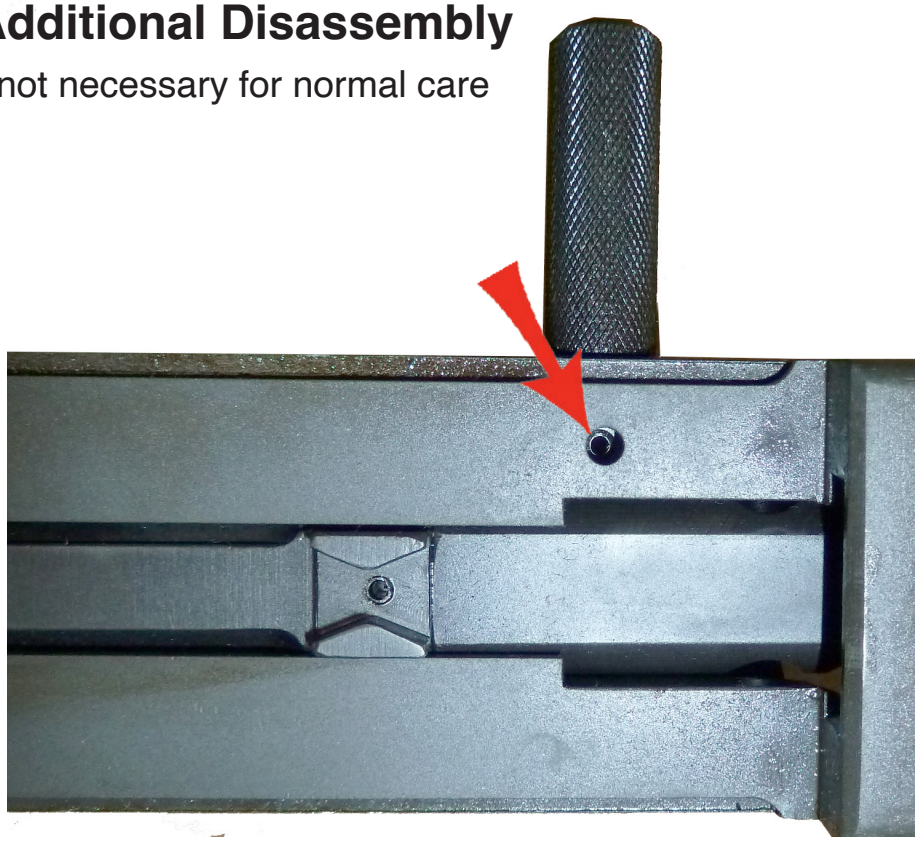




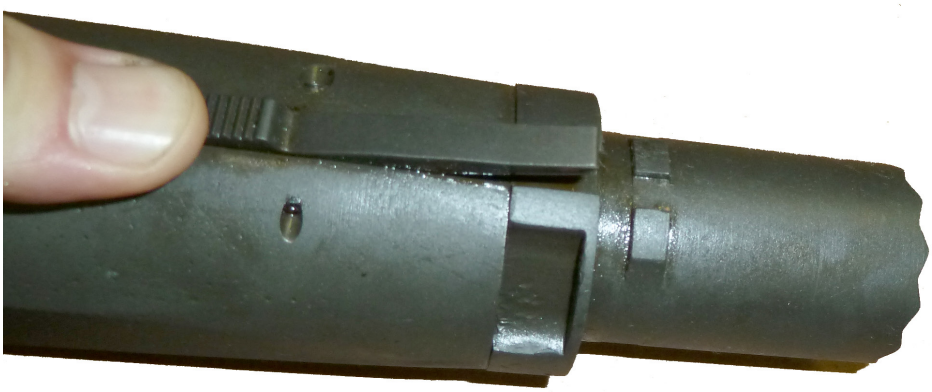
Additional Disassembly

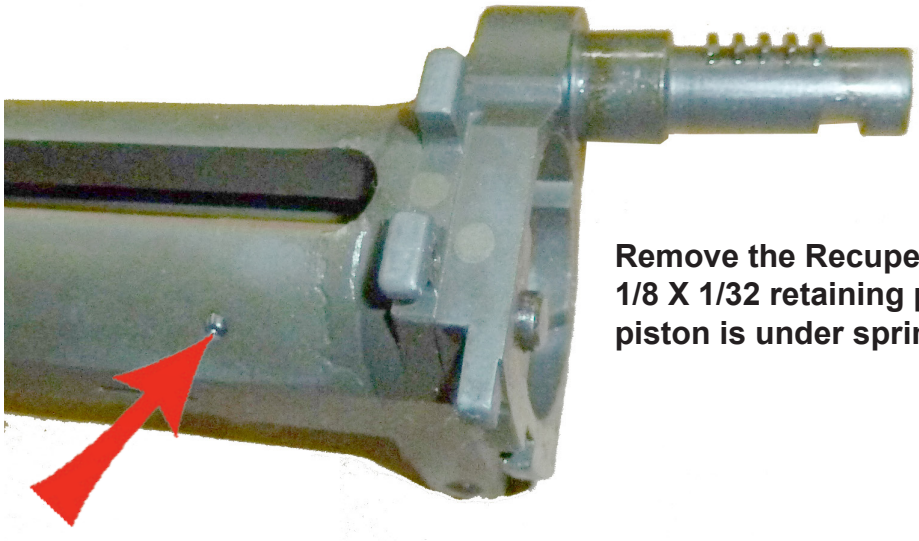
not necessary for normal care

Near the rear of the Charging Track there is a 'knock-out' hole for removing the 1/8 x 1/2 roll pin that retain the Charging Handle in the Bolt Carrier. This hole allow you to use a 3/32 pin punch to drive the role pin from the bottom through the top. The Charging Handle can be removed at the end of the Charging Track.



Depress the Buffer Latch and unscrew the Buffer Housing. With the Buffer Hosing Removed, the Bolt Carrier can be removed from the rear of the Upper Receiver.





Remove the Recuperator by driving the 1/8 X 1/32 retaining pin. BEWARE: This piston is under spring pressure.

Ammunition

General

a. The common commercial designation for the round used in this gun is 8mm Mauser. However, the exact dimensions are 7.92mm X 57mm. Be certain that the ammo you purchase have the exact dimensions because there are many ammunition configurations that look and sound similar to 8mm Mauser ammunition. ABSOLUTELY NO OTHER TYPE OF AMMUNITION IS TO BE USED WITH THIS SYSTEM. EXPERIMENTS TO ASCERTAIN INTERCHANGEABILITY ARE FORBIDDEN.

b. The following is a list of common ammunition:

- 7.92 X 57mm German Military
- 7.92X57JS German Military, European hunting ammo
- 7.90X57 Portugal, Spain, Middle East, South America
- 8X57JS European hunting/sporting ammo
- 8mm Mauser Common commercial designation
- 8X57 Mauser Common commercial designation
- 7.92 Mauser Yugoslav designation
- 7.92mm BESA British manufactured
- 7.92-mm Chinese

The best surplus ammo to run is Romanian Steel Cased 155 gr. The best commercial ammo to run is Olympic 196 gr. FMJ.

That being said, we have used Portuguese, Yugoslavian, and FN with very good reliability and consistency. One special note: the Yugoslavian Ammo tends to have harder primers usually requiring a heavier firing-pin strike.

ONLY RUN FMJ AMMO. The MG-42 SA, MG-42, MG-34, and XMG will not cycle soft point ammo reliably.

Improper, aged, defective, or weak ammo will not work in the XMG as well as most other 8mm automatics, and should be considered unsafe to use in all firearms, especially automatics. However, you can get away with running just about anything through a bolt action rifle. The M-48 is certainly the most rugged 8mm bolt action rifle on the market.

Specific Ammo to Avoid:

- Anything made prior to 1950
- Turkish
- German WWII (steel case) - The cases are corroded ON THE INSIDE from the powder. Brass is usually OK but has hard primers. Collect this ammo, DON'T shoot it!
- Ecuadorian
- Nigerian
- Anything south of the border or from a 'third-world' nation
- Any ammo suspected of being dangerous should not be used

Reasons to avoid these types of ammunition:

Primers - Primers harden as ammo ages. Excessive primer hardness will lead to dangerous misfires and hang-fires.

Strength - Much of the 8mm ammo currently available was made for bolt-action rifles. This ammo suffers from thin brass and loosely fitted bullets. Simply, the rounds just fall apart or deform during the harsh chambering and extraction in automatics.

Damage - The last batch of Ecuadorian 8mm we received was green due to corrosion. Don't trust anything from a 'third-world' nation. Most never had to make ammo strong enough to deal with the harsh chambering and extraction of an automatic, especially a 'pusher-type' MG-34 & XMG versus the 'puller-type' 1919.

Corrosion - If the ammo is steel cased, it has a much shorter shelf-life due to the corroding of the INSIDE of the case caused by corrosive powder.

Pressure - All automatic weapons rely on the pressure generated from the round to cycle the weapon. In aged, defective, or poorly made ammo the pressures are often inconsistent and will lead to an unreliable cycle. It will result in jamming, case head separations, primer blowouts, and lots of other nasty malfunctions that can significantly damage the gun and the shooter. Just because the sales person says that it 'runs in my 1919,' does not mean it's good and safe ammo.

Dimensions - There's a lot of poorly made ammo that will not seat properly in the standard 8mm chamber. Headspace is critical in the MG-34 & XMG. You will notice this in a bolt action where you sometimes have to force the round into the chamber. Poorly dimensioned ammo results in major headspace issues yielding pressures malfunctions listed above.

Bottom line: If you just bought a Ferrari, don't expect it to run like Ferrari if you fill it with bad gas.

Inspection

1. General

a. Inspect the gun before firing for operation and functioning. In all such inspections, use dummy ammunition. The use of live ammunition is **prohibited**. Ammunition must not be present during inspection.

2. Gun as a Unit

a. Note if the butt is firmly secured.
b. Retract the bolt and note any sluggish movement or binding. Remove the feed cover and feed block and see that the chamber is clear. Grasp the cocking handle and pull it to the retracted position and slowly let it forward on an empty chamber. Note any binding or sluggish movement.
c. Check the functioning of the belt feed pawls, using dummy rounds in a belt. DO NOT use live ammunition.
d. With one hand, grasp the cocking handle in its most forward position and retract it until the bolt is in its most rearward position. Then release the cocking handle to send the bolt forward with significant force to chamber the dummy round. Set the selector to SAFE, then pull the trigger to check the safety. Set the selector to FIRE, then pull the trigger and make sure the hammer falls.
e Retract the bolt and note any difficulty or failure to extract or eject.
d*. **(FULL AUTO LOWERS ONLY)**. With one hand, grasp the cocking handle in its most forward position and retract it until the bolt is in its most rearward position. Then release the cocking handle to send the bolt forward with significant force. Set the selector to SAFE, then pull the trigger to check the safety. Set the selector to AUTO, then pull the trigger and make sure the hammer falls. Maintain hold on the trigger, cock the gun to the rear, note any difficulty or failure to extract or eject, release it forward with significant force to chamber a dummy round, and make sure the hammer falls when the bolt carrier engages the auto sear.
e*. **(FULL AUTO LOWERS ONLY)**. Retract the bolt and note any difficulty or failure to extract or eject the second round.
f. Unscrew the muzzle parts and verify that the short recoil system is functional by pressing on the barrel to determine that this movement unlocks the bolt.

3. Barrel Jacket and Barrel

a. Note whether front sight is properly secured. Check whether the bipod catch springs at the front and rear of barrel jacket are unset or broken.
b. Note if recoil booster is properly secured to the jacket. If loose, tighten (the threads are right-hand).
c. Remove the barrel, hold it up to the light, and inspect the chamber and bore for wear, pits, or bulges. To facilitate inspection, place a piece of white paper in the breech end of the barrel slowly so that the light follows the circumference of the bore. If the barrel has pits or bulges, it should be examined by a gunsmith or replaced.
d. Make sure that the bolt engages the bolt lock on the underside the barrel jacket.

4. Bolt and Spring

a. Examine the bolt surface for rust, roughness, or foreign matter. Inspect all notches, edges, corners and grooves for burs and wear.
b. Inspect firing pin point and rear surface for wear and deformation.
c. Inspect the extractor and ejector for deformation or breakage.
d. Check the driving spring for kinks, fracture, and lost tension.

5. Belts and Magazines

a. **Belts**. Examine the belts for deformation or torn links. Note whether the belts are clean and free from rust.
b. **Belt Feed Drum Magazines**. Examine the 50-round belt feed drum magazines for deformation and for malfunction of the slide and cover. Deformed magazines should be repaired or replaced.