

Part # BFIMANA20P
Revision of 2005

*For all BUSHMASTER
XM15 and C15 Models*

**PLEASE
PRACTICE
SAFE FIREARMS
HANDLING!**



**BUSHMASTER
OPERATING
AND SAFETY
INSTRUCTION
MANUAL**



**WARNING: BEFORE USING THIS FIREARM,
READ AND FOLLOW THESE INSTRUCTIONS.**

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PLEASE PRACTICE SAFE FIREARMS HANDLING!



WARNING: IF THIS FIREARM IS CARELESSLY OR IMPROPERLY HANDLED, UNINTENTIONAL DISCHARGE COULD RESULT AND COULD CAUSE INJURY, DEATH, OR DAMAGE TO PROPERTY.



CAUTION: CAREFULLY READ THIS INSTRUCTION MANUAL PRIOR TO LOADING AND FIRING THIS FIREARM. FOLLOW ALL INSTRUCTIONS ON THE PROPER HANDLING AND SAFE USE OF THIS FIREARM - LIVES MAY DEPEND ON IT!



CAUTION: USE ONLY CLEAN, DRY, HIGH QUALITY COMMERCIALY MANUFACTURED AMMUNITION IN GOOD CONDITION which is appropriate to the 5.56mm NATO / .223 Remington caliber of your firearm. Bushmaster does not recommend the use of remanufactured or hand loaded ammunition because it may damage your rifle.



WARNING: THIS WEAPON COULD CHAMBER A ROUND if it is dropped or jarred with a loaded magazine in place - either with the Bolt Carrier Assembly locked to the rear, or in its forward position.

FUNDAMENTAL RULES FOR SAFE GUN HANDLING

ALWAYS KEEP THE GUN POINTED IN A SAFE DIRECTION.

NEVER LOAD THE GUN UNTIL READY TO USE.

KEEP YOUR FINGER OFF THE TRIGGER UNTIL READY TO SHOOT.



WARNING: BEWARE OF DANGEROUS PROCEDURES

- Be sure Cam Pin is installed in the Bolt Group. If it isn't, your rifle can still fire and **WILL EXPLODE**.
- When using a **Blank Firing Attachment, NEVER FIRE ANYTHING EXCEPT BLANKS!** For your safety, we recommend the visible, military style blank firing attachment (BFI Part# RAY-008).
- If your rifle stops firing with a live round in the chamber of a hot barrel (a misfire), **REMOVE THE ROUND FAST!** However, if you cannot remove it within 10 seconds, remove magazine and wait 15 minutes **with the Rifle Pointing in a SAFE DIRECTION!** This way you won't be hurt by a possible round "cooking-off" (i.e. the round detonating just from the heat of the barrel). In any event, keep your face away from the ejection port while clearing a hot chamber.
- If your bolt fails to unlock, and you try to free it by tapping the buttstock on the ground while pulling on the charging handle, **keep yourself clear of the Muzzle!**
- If there is water in the barrel, do not fire the rifle. **IT COULD EXPLODE!**
- If you hear a noticeable difference in sound or recoil is experienced, **STOP FIRING!** Either condition could indicate an incomplete powder burn and/or a bullet stuck in the bore.
- **NOTE:** With the bolt carrier assembly locked to the rear, or in its forward position, if the weapon is dropped or jarred with a loaded magazine in place, a live round could be chambered.

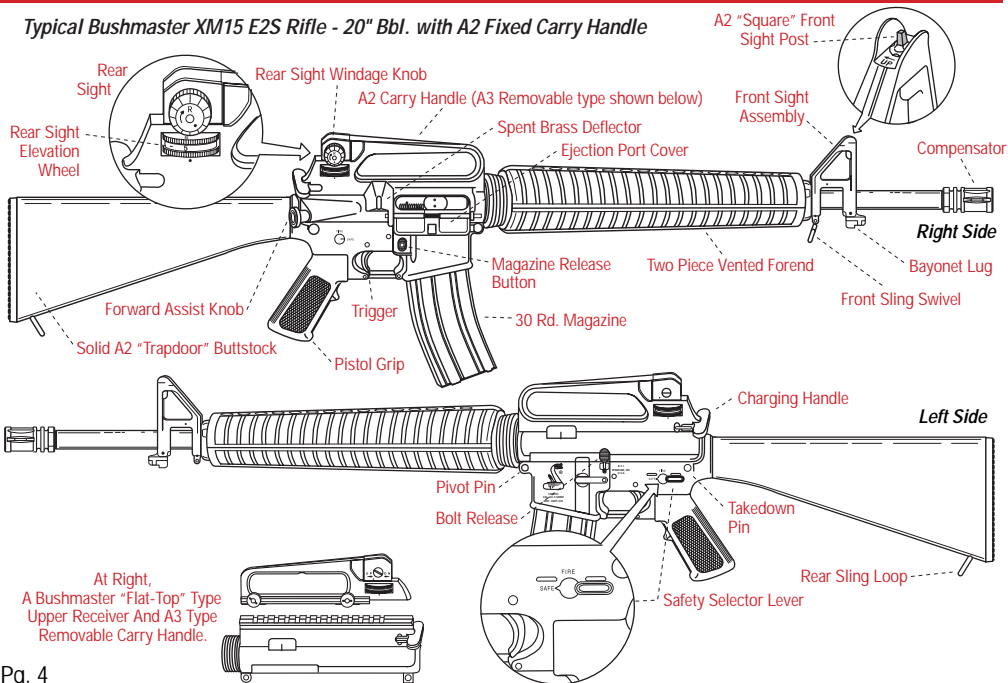
ALWAYS PRACTICE SAFE FIREARMS HANDLING!

ABOUT YOUR BUSHMASTER RIFLE...

- This Operating Manual covers all *Bushmaster XM15 E2S* and *Carbon 15* models chambered for 5.56mm NATO/.223 Remington ammunition. They are lightweight, gas operated, air-cooled, magazine-fed rifles, carbines or pistols that are *Semi-Automatic* in operating mode (i.e., a single round will fire each time the trigger is pulled). **Note:** For Law Enforcement and Military markets, Bushmaster makes similar models in either Full-Automatic (continuous fire as long as the trigger is pulled) or Three Round Burst (a group of 3 shots will fire as long as the trigger is pulled) configurations. Sales of these models require special permits and are regulated by ATF.
- On all models, the Upper And Lower Receivers are easily opened for cleaning and inspection. XM15 Models have forged aluminum Upper and Lower Receivers. Carbon 15 Models have Receivers that are injection molded from Carbon 15 Composite.
- Most Bushmaster models feature fully adjustable rear sights / elevation adjustable front sights.
- Barrels on XM15 and Carbon 15 Models are either chrome lined Chrome Moly Vanadium Steel or 416 Stainless Steel. They are usually button rifled 1 turn in 9" with a right hand twist - 6 lands and grooves. The Bolt Group locks into the Barrel Extension with 7 locking lugs.
- All models can be configured with either 6 position Telescoping Buttstocks or solid A2 "Trapdoor" Buttstocks. Forends are of removable split design and are vented to allow heat dissipation. All models feature vertical pistol grips and detachable magazines. Magazine capacity is 30 rounds standard (depending on State Regulations), but all AR-15/M-16 Type magazines of capacities from 5 to 40 rounds will fit the Bushmaster and function in it.

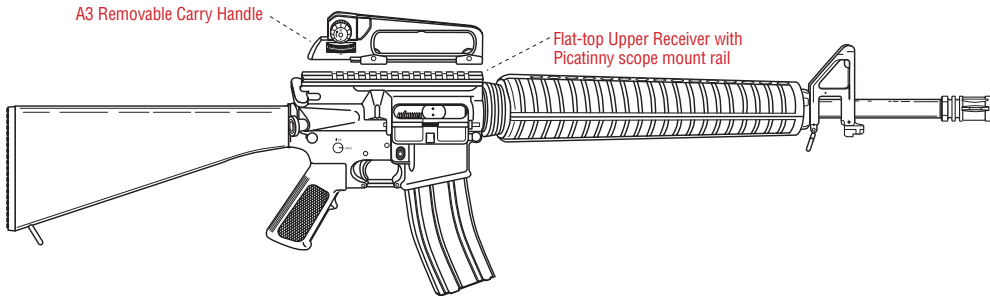
Rifle Features & Controls - Identification / Location...

Typical Bushmaster XM15 E2S Rifle - 20" Bbl. with A2 Fixed Carry Handle

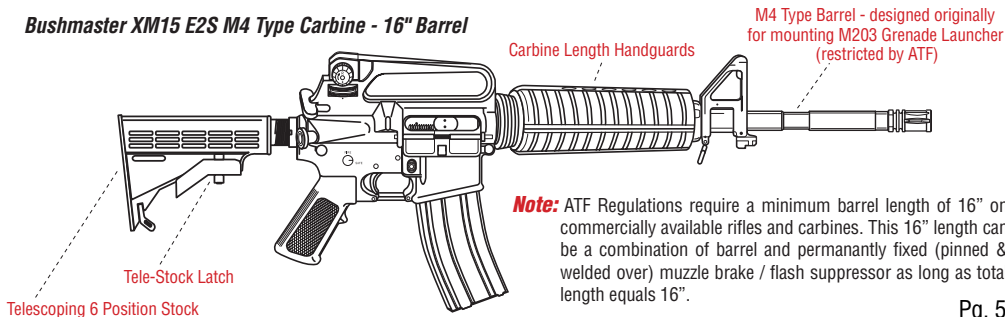


Rifle Features & Controls - Identification / Location... (cont'd.)

Typical Bushmaster XM15 E2S A3 Type Rifle - "Flat-top" Upper Receiver w. 20" Barrel & Removable Carry Handle



Bushmaster XM15 E2S M4 Type Carbine - 16" Barrel



Bushmaster Carbon 15 Models - Identification...

Bushmaster Carbon 15 M4 Type Rifle

Carbon 15 models have no Forward Assist Mechanism

Carbon 15 Models will have either a raised Picatinny Optics Mounting Rail, or "Flat-top" Upper Receiver with Detachable Rear Sight

Carbon 15 Receivers are molded of Carbon Fiber Composite

Carbon 15 models have no Ejection Port Cover



Stainless Steel Barrels on many Carbon 15 models

SEE:
Carbon 15
"Differences"
Section in
this manual
for further
information.



Bushmaster Carbon 15 R97S Rifle



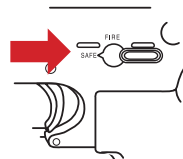
**Bushmaster
Carbon 15
R97S Rifle**

NOTE: All Operating Controls on Carbon 15 Rifles and Pistols function the same manner as XM15 E2S Bushmaster models with Aluminum Receivers. Carbon 15 Safety Lever markings are red or white inset letters: **S** = SAFE (white letters on both sides of Receiver); **F** = FIRE (red letters on both sides of Receiver)

CLEARING YOUR RIFLE...

ALWAYS FOLLOW THE RULES OF SAFE GUN HANDLING. First, assume the gun you are handling is loaded, and then proceed - according to the following steps - to **CLEAR YOUR RIFLE...**

1. Point Rifle in a **SAFE DIRECTION!** Place Safety Selector Lever on SAFE. **NOTE: If the rifle is not cocked, the Safety Selector Lever cannot be pointed toward SAFE.**
2. Press Magazine Catch Button and pull Magazine down to remove.



3. To Lock Bolt Open, Pull Charging Handle rearward. Press bottom of Bolt Catch and allow Bolt to move forward until it engages Bolt Catch. Return Charging Handle to forward. If you haven't before, now place Safety Selector Lever on **SAFE.**



PREVENTATIVE MAINTENANCE CHECKS & SERVICES...

CHECK BEFORE YOU FIRE! ...

1. Check to see that there is **NO EXCESSIVE OIL** in the Bore. If there is, swab it out with a patch and the cleaning rod. **ALWAYS CLEAN A NEW RIFLE BEFORE FIRING.**

WARNING! If the rifle is fired with oil - or water - in the barrel, excessive pressure will be created causing the rifle to explode.

2. Retract the Bolt to ensure free movement between Bolt Carrier and Gas Tube.
3. Perform Safety Function Check (below) to ensure that Safety Selector Lever works properly.



SAFETY FUNCTION CHECK...

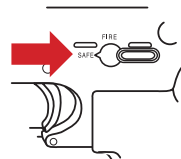
UNLOAD RIFLE - REMOVE MAGAZINE - CHECK CHAMBER

1. Remove Magazine if installed. Pull Charging Handle assembly to rear. Check that Chamber is clear. Let the Bolt and Bolt Carrier close. Do not pull Trigger. Leave Hammer in cocked position.

WARNING: If Rifle fails any of the following tests, continued use of the Rifle could result in injury to, or death of, people around you.

2. Place Selector Lever in **SAFE** position, point rifle in a safe direction, and pull Trigger.

THE HAMMER SHOULD NOT FALL.



SAFETY FUNCTION CHECK... (Continued)

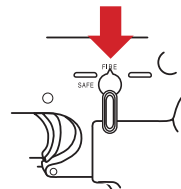
3. Place Selector Lever in **FIRE** position. Pull the Trigger. **THE HAMMER SHOULD FALL.**

NOTE: For purposes of the following check, "SLOW" is defined as one fourth to one half the normal rate of trigger release.

4. Hold Trigger to the rear, pull Charging Handle to the rear and release Charging Handle. Then release pressure on the Trigger with a slow, smooth motion, without hesitations or stops, until the Trigger is fully forward.

AN AUDIBLE CLICK SHOULD BE HEARD - THE HAMMER SHOULD NOT FALL.

5. Repeat the **FIRE** position test **FIVE TIMES**. The Rifle must not malfunction during any of these five tests. If the Rifle malfunctions during any of these five tests, have the Rifle checked by a qualified gunsmith.



PREPARING TO FIRE - LOADING A MAGAZINE...

1. Use only quality 5.56mm or .223 Remington Ammunition suitable for your firearm. Examine each Cartridge - particularly around the primer. Look for dents, scratches, and other signs of damage.

DO NOT LOAD DAMAGED AMMUNITION!

2. With the Magazine facing forward as shown in the illustration, place a Round between the Feed Lips of the Magazine with the Bullet Tip forward. Push the Round down until it is held by the Magazine Feed Lips.

3. If necessary, give the Round a slight push backward to seat it against the inside back edge of the Magazine Feed Lips. Place next Round on top of the previous Round and repeat steps until desired number of Rounds are loaded into Magazine.

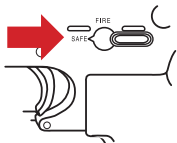
CAUTION: Safe Firearms Handling dictates that you **ONLY LOAD LIVE AMMUNITION INTO YOUR RIFLE WHEN YOU ARE ABOUT TO SHOOT.**



OPERATION OF YOUR RIFLE... LOADING

CAUTION: ALWAYS POINT THE MUZZLE IN A SAFE DIRECTION!

1. With the Hammer cocked, place Selector Lever on **SAFE**.



2. Open Bolt and check Firing Chamber. Make sure it is **CLEAR!**



INSERTING A MAGAZINE...



1. Return Charging Handle to forward, locked position. Push Magazine up into Magazine Well until Magazine Catch engages and holds the Magazine.

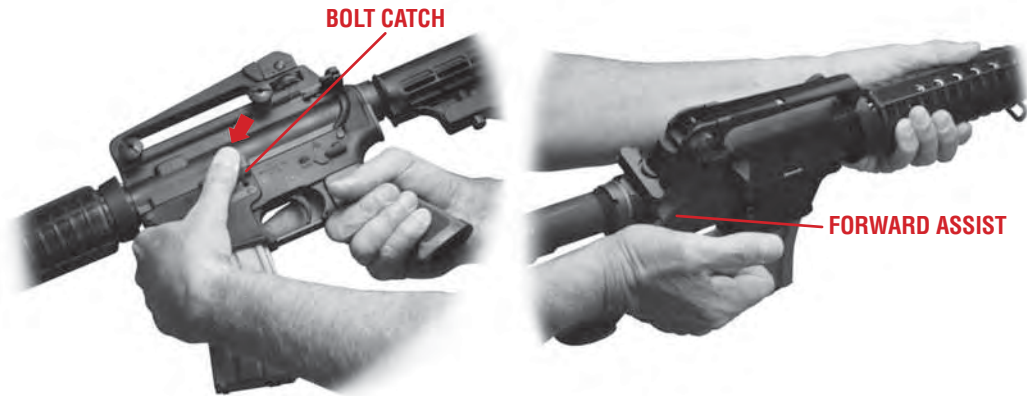


2. Slap upwards on Magazine bottom to make sure it is seated correctly.

OPERATION OF YOUR RIFLE... (Continued)

CHAMBERING A ROUND FROM AN OPEN BOLT...

NOTE: The Magazine may be inserted into the Rifle with the Bolt Assembly Open or Closed.



- 1.** Depress upper portion of Bolt Catch. Bolt should spring forward. This will chamber a round from the Magazine.
- 2.** TAP the Forward Assist with the heel of your hand to ensure that the Bolt is fully forward and locked.

RIFLE IS NOW READY TO BE AIMED AND FIRED!

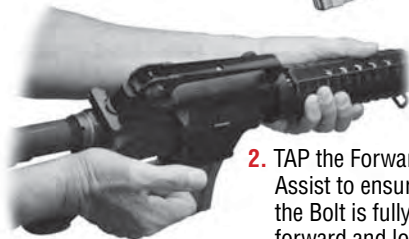
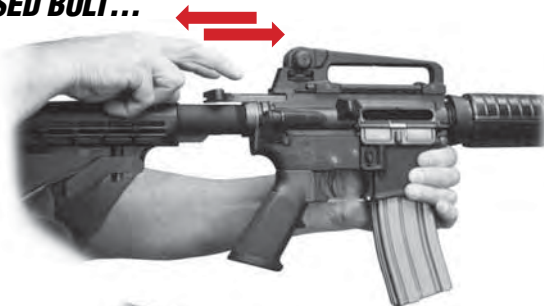
OPERATION OF YOUR RIFLE... (Continued)

CHAMBERING A ROUND FROM A CLOSED BOLT...

1. With a Magazine in the Rifle, pull the Charging Handle fully to Rear.

Then release the Charging Handle allowing the Bolt to spring forward - chambering the first round.

NEVER "Ride" or push the Charging Handle forward (as depicted below). Let it move forward on its own.



2. TAP the Forward Assist to ensure that the Bolt is fully forward and locked.

RIFLE IS NOW READY TO BE AIMED AND FIRED!

NOTE: If Rifle is not going to be fired immediately, make sure the Selector Lever is still on **SAFE**, and close the Ejection Port Cover to keep dirt out of the Chamber and Upper Receiver.

OPERATION OF YOUR RIFLE... (Continued)

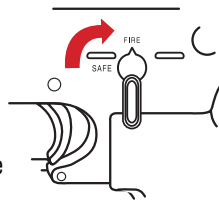
CONDITION: Rifle is now Loaded, a Round is Chambered, and Safety Selector should be on **SAFE**.

CAUTION: ALWAYS POINT THE MUZZLE IN A SAFE DIRECTION!

To **FIRE** the Rifle in **SEMI-AUTOMATIC MODE** (one Round fired with each pull of the Trigger), move the Safety Selector from **SAFE** to **FIRE**.

Aim at Target – Pull Trigger – Release.

The Rifle will automatically eject the spent Cartridge and chamber another in preparation for the next shot. The cycle of pulling the Trigger to shoot, and the Rifle automatically reloading, can be continued until the Magazine is empty.



NOTE: After the last Round is fired, the Bolt Carrier will lock in the rear position. You can then push the Magazine Release Button to drop out the empty magazine, insert a fresh Magazine, release the Bolt Catch, and a new Round will be automatically chambered in preparation for the next firing sequence.



WARNING... IF A NOTICEABLE DIFFERENCE IN SOUND OR RECOIL IS EXPERIENCED, STOP FIRING.

Either condition could indicate an incomplete powder burn and/or a bullet stuck in the bore. Retract the Bolt slowly and remove the fired cartridge case. Clear the weapon and check for unburned powder grains in the Receiver or Bore, and for a Bullet stuck in the Bore (see Page 17). Clean out any unburned powder before resuming firing. If a Bullet is stuck in the Bore, do not attempt to remove it. Take the Rifle to a qualified Gunsmith.

IMMEDIATE ACTIONS — IN CASE OF TROUBLE!

IF YOUR RIFLE STOPS FIRING: Perform the following **IMMEDIATE ACTIONS...**



- 1.** SLAP upward on Magazine to make sure it is properly seated.



- 2.** PULL Charging Handle all the way back. Observe the ejection of the Case or Cartridge. Check Firing Chamber for any obstruction.



WARNING... DO NOT LOAD WITH A HOT CHAMBER – A ROUND MAY “COOK OFF”.

“Cooking Off” means that a Round may Detonate (Fire) unexpectedly just from being exposed to the heat of the Rifle’s Firing Chamber.

IMMEDIATE ACTIONS — IN CASE OF TROUBLE! (Continued)

3. If Cartridge or Case is ejected, or Chamber is clear, **RELEASE** Charging Handle to feed a new Round. Don't "ride" the Charging Handle forward.



4. Tap Forward Assist to ensure Bolt is locked.



5. Now **FIRE**.

If the Rifle will not fire, look for trouble and apply the Remedial Actions described on the next Page.



REMEDIAL ACTIONS...

! WARNING: IF YOUR RIFLE STOPS FIRING WITH A LIVE ROUND IN THE CHAMBER OF A HOT BARREL, REMOVE THE ROUND FAST. However, if you cannot remove it within 10 seconds, remove the magazine and wait 15 minutes with the rifle pointing in a safe direction (always check that the “SAFE” direction remains safe during that time). This way you and those around you won't get hurt by the possibility of a round “cooking off”. **KEEP YOUR FACE AWAY FROM THE EJECTION PORT WHILE CLEARING A HOT CHAMBER.**



1. If your Rifle still fails to fire after performing Immediate Action Steps 1 through 5 on previous Pages, check again for a jammed cartridge case.

2. If a cartridge case is in the chamber, open the receivers, remove the bolt carrier, and try to tap out the case with a cleaning rod.



BULLET STUCK IN THE BORE...

! **WARNING:** IF AN AUDIBLE “POP” OR REDUCED RECOIL IS EXPERIENCED DURING FIRING, IMMEDIATELY CEASE FIRE: Then, (1.) Remove the Magazine, (2.) Lock the Bolt to the rear, (3.) Place the Selector Lever on the SAFE and (4.) visually inspect and/or insert a Cleaning Rod into the Bore to ensure there is not a Bullet stuck in the Bore.

1. Remove the Magazine



2. Lock the Bolt to the rear.



3. Place the Selector Lever on SAFE



4. Check for a Bullet in the Bore



DO NOT APPLY THE “IMMEDIATE ACTIONS” DESCRIBED ON PREVIOUS PAGES.

IF A BULLET IS STUCK IN THE BARREL OF THE WEAPON, DO NOT TRY TO REMOVE IT. TAKE THE RIFLE TO A QUALIFIED GUNSMITH.

FRONT SIGHT...

Adjustable for Elevation...

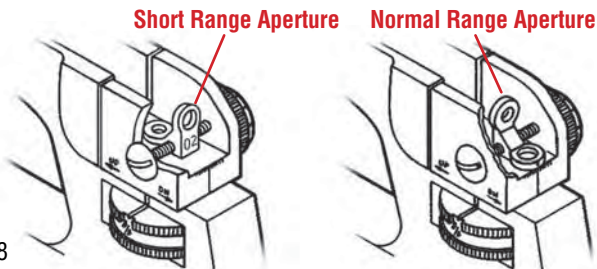
The Front Sight Post is threaded - allowing it to be moved up or down for Elevation Adjustments when “Zeroing” the Rear Sight (see “Zeroing Your Sights” on next page). Once the Rear Sight is Zeroed, the Front Sight Post should not be moved.

A2 DUAL APERTURE REAR SIGHT...

Adjustable for Elevation and Windage...

SHORT RANGE APERTURE: is used for ranges of 0 - 200 meters. In the illustration below, the sight is set to 0 - 200 meters. The larger aperture is only used when the 8/3 marking is aligned with the vertical mark on the left side of the upper receiver.

NOTE: For A3 sights on Removable Carry Handles (as on the “flat-top” model shown right), the dial setting will be marked 6/3 instead of 8/3.



NORMAL RANGE APERTURE: The smaller Aperture is unmarked and is used for most firing situations. It is used in conjunction with the Elevation Knob for 300, 400, 500, 600, 700, and 800 meter targets.

ZEROING YOUR SIGHTS...

By following the steps below to establish a Zero at 25 meters, your Bushmaster M16A2 Type Rifle Sights will be set with a 300-meter battlesight. With this procedure, only the Front Sight Post and Rear Sight Windage Knob are adjusted so that you can hit your Point of Aim at 300 meters.

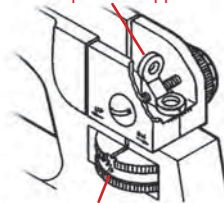
25 METER ZEROING PROCEDURES...

For M16A2 Type Iron Rifle Sights

1. Place an appropriate 25 Meter Paper Sighting Target 25 meters downrange and follow the steps below to establish a “battlesight” zero. Do not move the Front Sight Post at this time. It was set at the factory and should be very close to “Zero”. (Note: factory height setting is 5mm from “floor” of Front Sight Base to top of Front Sight Post).
2. The smaller (unmarked) Rear Sight Aperture should be in the UP position. Center the Rear Sight by turning the Windage Knob left or right (the markings on back edge of the Rear Sight Base will help you). This creates what is called “Mechanical Zero Windage”.
3. Lower the Rear Sight all the way down by rotating the Elevation Dial counterclockwise. Then rotate the elevation dial (clockwise) “UP” one click PAST the 300 Meter Mark (the mark above the 8/3 on the top of the Elevation Knob should align with the corresponding mark on the left side of the Upper Receiver). From this point on, the Elevation Knob should not be moved. Any changes in elevation required in the following zeroing steps will be made by raising or lowering the Front Sight Post only.

NOTE: The A3 (Removable Carry Handle) Type Rifle Rear Sight differs in that its Elevation Index is marked 6/3 instead of 8/3. The vertical Elevation shaft of the A3 Sight is shorter - with finer thread pitch - giving it 1/2 Minute of Adjustment clicks instead of the 1 Minute of Adjustments of the A2 Sight. The A3 Elevation Dial must be moved 2 clicks up to the “Z” (Zero) mark. Otherwise, the Windage Components and Flip-up Aperture - and their operation - are the same as on the A2 Rear Sight.

Smaller Aperture Flipped UP



Rear Sight Elevation Dial
set at 300 Meter Mark

25 METER ZEROING PROCEDURES... (Continued)

4. Check that your field of fire is clear, and that it is safe to shoot. Carefully aim and fire a group of three shots at the center of the target bullseye.
5. Inspect your target - if your shot group is not in the center of the bullseye, the squares on the target sheet will help you calculate the required “clicks” necessary to move your next shot group toward the bullseye. *(Remember! - any changes in elevation are to be made by moving Front Sight Post only.)*
6. If you need to raise your next shot group to get closer to the bullseye, rotate the Front Sight Post clockwise one click. A Front Sight Adjustment Tool (Part# RAY-005 - see Bushmaster Catalog or Website) is recommended for this but not necessary – the sight can be adjusted with the tip of a Bullet as shown at right. One click will move the the bullet strike point one vertical square on the target sheet. If you need to lower your next shot group, rotate the Front Sight Post counterclockwise. (One click - as before - equals one square.) Changes in Windage are made with the Windage Knob. (Three clicks will move the strike point of the Bullet one horizontal square on the target sheet.) To move the shot group to the left, turn the Windage Knob counterclockwise. To move the shot group to the right, turn the Windage Knob clockwise.
7. Carefully aim and fire another group at the center of the target bullseye. Repeat Steps 6 and 7 as required to get your shot groups into the bullseye.
8. Once your shot group is on target, your Sights are zeroed, or “calibrated”. To set your Rifle’s sights to a 300 meter zero, rotate the Elevation Knob one click “down” (2 clicks for the A3 Sight). The Range Pg. 20 Scale’s 300-meter mark should now be aligned with the corresponding mark on the Receiver.)



Adjust Front Sight Post Elevation by depressing Detent with Bullet Tip, and then rotating Sight Post up or down as needed.

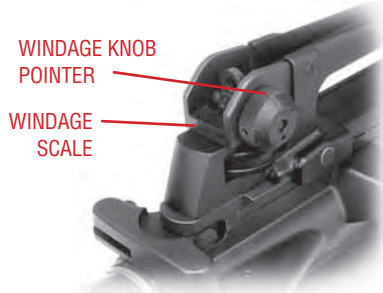
FRONT & REAR SIGHT ADJUSTMENT...

FRONT SIGHT: To adjust elevation, depress detent and rotate post. To raise strike of bullet, rotate post in the direction of arrow marked UP. Reverse the direction of rotation to lower strike of Bullet. Each graduation (notch) moves the point of impact of Bullet as indicated.

IMPACT	DISTANCE
0.9 cm (3/8 in.)	25 meters
3.5 cm (1 3/8 in.)	100 meters
7.0 cm (2 3/4 in.)	200 meters

REAR SIGHT ADJUSTMENTS... FOR WINDAGE KNOB (per click)*...

IMPACT	DISTANCE
0.3 cm (1/8 in.)	25 meters
1.25 cm (1/2 in.)	100 meters
2.50 cm (1 in.)	200 meters
3.8 cm (1 1/2 in.)	300 meters
5.0 cm (2 in.)	400 meters
6.3 cm (2 1/2 in.)	500 meters
7.6 cm (3 in.)	600 meters
8.8 cm (3 1/2 in.)	700 meters
10.0 cm (4 in.)	800 meters



*All the above values have been rounded off. To remember your correct zero windage, note location of Windage Scale and Windage Knob Pointer (heavy mark on outside of knob). Once you have established your correct zero windage leave your Windage Scale and Windage Knob Pointer on these settings at all times.

DISASSEMBLING YOUR RIFLE...

1. **CLEAR YOUR RIFLE!** (as described on Page 7). Disconnect the Sling for convenience.
2. Push in Takedown Pin (a Bullet tip can help) as far as it will go. Pivot Upper Receiver from Lower Receiver.



3. Push in Pivot Pin (a Bullet tip can help).



4. Separate Upper and Lower Receivers.



5. Pull back Charging Handle and Bolt Carrier.

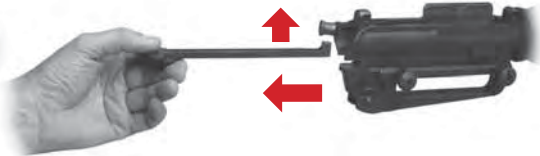


DISASSEMBLING YOUR RIFLE... (Continued)

6. Remove Bolt Carrier and Bolt.



7. Remove Charging Handle by pulling back and up until "Ears" clear cutouts in Receiver.



8. Remove Firing Pin Retaining Pin. A Bullet tip can help push it out of the Bolt Carrier.



Do Not open or close split end of Firing Pin Retaining Pin, and Do Not substitute a common cotter pin on reassembly.

9. Drop Firing Pin out of rear of Bolt Carrier.

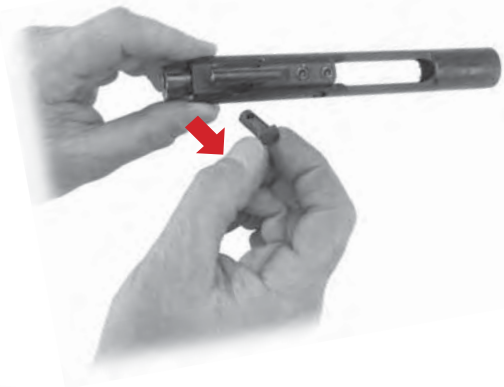


DISASSEMBLING YOUR RIFLE... (Continued)

10. Push Bolt in to locked position.



11. Remove Cam Pin by rotating 1/4 turn and lifting out.



12. Remove Bolt Assembly from Bolt Carrier by pulling straight out.



DISASSEMBLING YOUR RIFLE... (Continued)

DISASSEMBLE USING STEPS 13 THRU 16 ONLY WHEN DIRTY OR DAMAGED.

13. Remove Extractor Pin by pushing out with a punch or the tip of a Bullet.

PUSH EXTRACTOR PIN OUT...

Don't lose it!



NOTE:

Press rear of Extractor to check Spring function.

14. Remove Extractor with Spring.



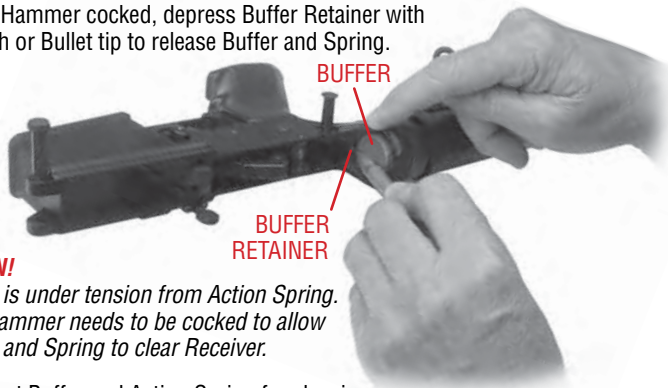
CAUTION:

Extractor Spring may pop out and get lost!

DISASSEMBLING YOUR RIFLE... (Continued)

DISASSEMBLE USING STEPS 13 THRU 16 ONLY WHEN DIRTY OR DAMAGED.

15. With Hammer cocked, depress Buffer Retainer with punch or Bullet tip to release Buffer and Spring.



CAUTION!

Buffer is under tension from Action Spring.

NOTE: Hammer needs to be cocked to allow Buffer and Spring to clear Receiver.

15. Pull out Buffer and Action Spring for cleaning.



The Handguards may be disassembled at any point in your cleaning procedures as necessary - see "Buddy System" tip in Reassembly Section.

If your Rifle is equipped with the A3 Type Removable Carry Handle, remove for cleaning by loosening the 2 thumbnuts. Clean as per instructions for aluminum Upper and Lower Receivers. Lightly lubricate the thumbnut threads and the Rear Sight mechanism (as described in Lubrication - Adjustable Rear Sight).

BUSHMASTER DOES NOT RECOMMEND ANY FURTHER DISASSEMBLY.

INSPECTION — CLEANING — LUBRICATION...

AFTER FIRING YOUR RIFLE, clean it as soon as possible to make the job easier and to avoid allowing the development of any corrosion.

When your firearm has not been fired, you should clean it at least once or twice a year if you live in a temperate climate, or as often as once a week in a tropical climate.

If you get your firearm wet, clean it as soon as possible to avoid the onset of corrosion or rust.

Use a high quality rifle cleaning kit that includes a cleaning rod; swab holder; cotton flannel bore patches; pipe cleaners; a small toothbrush; brass wire bristle bore and chamber brushes and a Cleaner/Lubricant/Preservative (CLP in Army terminology).

After you have disassembled the rifle, thoroughly clean, inspect and lubricate all parts according to the techniques described on following pages.



***Cleaning Kit with Patch Holder,
Bore & Chamber Brushes***



***A Quality Gun Oil /
Cleaner / Preservative***

***Cotton Flannel
Bore Patches***



PLUS, an old toothbrush for cleaning parts and dislodging dirt build-up, and pipe cleaners or Q-tips for cleaning Gas Key and Gas Tube and other hard to reach areas.

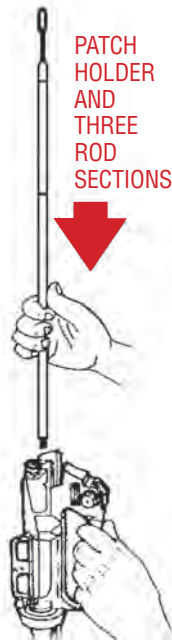
DETAILED CLEANING TECHNIQUES...

NOTE: The procedures below describe cleaning with a standard military issue multi-piece rod cleaning kit. Other commercial cleaning kits may include alternate cleaning instructions which may be just as effective.

CLEANING THE BORE: The bore of your Bushmaster rifle has Lands and Grooves called rifling. Rifling makes the bullet spin very fast as it moves down the Bore and down range. It is difficult to **push** a new, stiff Bore Brush through the Bore. You will find it much easier, and more effective, to **pull your Bore Brush through the Bore**. Also, because the brush will clean better if the bristles follow the grooves (this is called tracking), you want the Bore Brush to be allowed to turn as you pull it through.

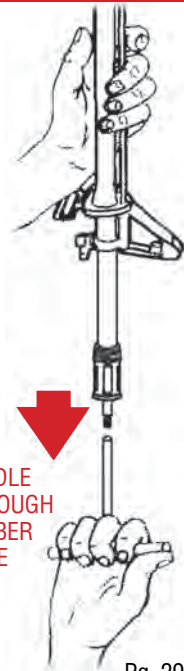
ALWAYS CLEAN FROM FROM CHAMBER TOWARD THE MUZZLE. Follow these steps:

1. Attach three Rod Sections together but leave each one about two turns short of being tight. Attach the Patch Holder but leave it two turns short of tight also.
2. Point Muzzle down. Hold the Upper Receiver in one hand while inserting the end of the Rod with Patch Holder attached into the Chamber. Guide the Rod carefully through the Bore. **CAUTION:** Do not let the Rod or its threaded end scratch the Chrome Lining of the Bore or Firing Chamber. About 2 - 3 inches of the Rod should protrude out of the Muzzle.
3. Attach the Handle Section of the Cleaning Rod to the end of the Rod sticking out of the Muzzle, and swab out the Bore with a patch moistened with "CLP".
4. Remove Patch Holder and attach Bore Brush (leaving it two turns short of tight).
5. Pull the Brush through the Bore and out the Muzzle. You should be able to see the Rod twisting as you pull it - this is the Brush "tracking" in the rifling.



DETAILED CLEANING TECHNIQUES... (Continued)

6. After one pull, take off the handle section and repeat the process. After three or four pulls, the three rod sections and the Bore Brush may become screwed tightly together. Loosen them up and repeat the process.
7. Send a patch through the Bore occasionally to help clean out the crud that the brush is getting loose. Just replace the Bore Brush with the Rod Tip (Patch Holder) and a wet patch. Pull it through. If you leave the rods loose again, the patch will "track" in the rifling as before. But remember, always have the Bore **wet with cleaner** before trying to pull a brush through.



CLEANING THE UPPER RECEIVER...

NOTE: Check to ensure that there is no looseness between the Barrel and the Upper Receiver - if you detect any movement by twisting with your hands, the Barrel Nut must be retorqued. Bring the Rifle to your Armorer.

1. Using a "CLP" type product, clean all areas (inside and out) of Powder Fouling, Corrosion and Dirt.

Never use a wire brush or any type of abrasive to clean the Aluminum Upper Receiver - you'll scratch and damage the finish. A Toothbrush is good for loosening any dirt buildup, and won't scratch the Receiver.

2. Clean the Firing Chamber - dip the larger Chamber Brush in CLP and use at least 5 plunge strokes and 3 - 360° clockwise rotations. Then swab out the Bore as described previously to remove contaminated solution or loosened crud.



3. Use the Bore Brush - wet with CLP - to clean carbon and powder residue from around the Gas Tube. Run a Pipe Cleaner into the Gas Tube, clean the Bolt Locking Lugs, Bolt Rings, Firing Pin, Bolt Cam Pin, lip of the Extractor, and inside the Bolt Carrier from both front and rear.

4. Wipe all components clean and dry, and inspect for excessive wear, corrosion or mechanical damage. Have your Armorer replace any worn or defective parts before firing again (or contact Bushmaster at 1-800-998-7928 for parts needs.)



CLEANING THE UPPER RECEIVER... (Continued)

Cleaning the Bolt, Bolt Carrier & Components...

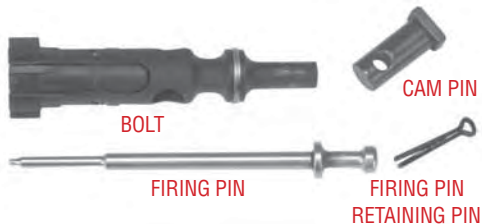
1. Clean out the Gas Key on top of the Bolt Carrier with a Q-Tip or a Pipe Cleaner. Also clean out an carbon/powder residue from vent holes in the Bolt Carrier.
2. Clean and inspect Bolt, Cam Pin, Firing Pin and Firing Pin Retaining Pin thoroughly.

CHECK THE BOLT: Look for cracks or fractures, especially in the Cam Pin hole area. Inspect Bolt Face - Bolts with any pitting extending into the firing pin hole should be replaced.

CHECK THE CAM PIN: If it is cracked, or chipped, it should be replaced. **NOTE:** Cam Pin can only be installed in Bolt from one side - so Ejector will be positioned correctly.

CHECK THE FIRING PIN: If it is bent, cracked, too blunted or too sharp, it should be replaced.

CHECK THE FIRING PIN RETAINING PIN: If it is bent, or badly worn, it should be replaced. Never use a "Cotter Pin" as a substitute for a real Firing Pin Retaining Pin. Cotter pins are not made of heat treated spring steel and their round head shape will cause damage.



WARNING: IF THE CAM PIN IS MISSING, DO NOT FIRE THE RIFLE - IT WILL EXPLODE!

CLEANING THE UPPER RECEIVER... (Continued)

Cleaning the Bolt, Bolt Carrier & Components...

- 3. CHECK THE EXTRACTOR AND EXTRACTOR SPRING:** If the Extractor is chipped, or has broken edges in the area of the lip that engages the cartridge rim, it should be replaced. Check that the rubber insert is inside the Extractor Spring. Clean off any Carbon buildup or powder residue.



Cleaning / Lubricating the Ejector...

NOTE: The design of the Ejector makes its disassembly for cleaning somewhat impractical (i.e. we don't recommend it). Make sure your Bushmaster ejects empty cases efficiently by following these steps on a monthly basis (more frequently if firing blanks).

1. With the Bolt removed from the Bolt Carrier and the Extractor installed, hold it as shown, and dribble a few drops of CLP around the Ejector to form a puddle.
2. Take a fired or dummy case and place it under the lip of the Extractor. With a rocking motion, press the case down against the Ejector. Since the Ejector is spring loaded, some resistance will be felt. Press on the case until it stops against the bolt face. Ease off with your thumb slightly and press down again. Repeat several times. Replace the CLP frequently. Once the spring action of the Ejector is smooth and strong, dry off any excess lubricant.



CLEANING THE LOWER RECEIVER...

1. Clean all areas of Powder Fouling, Corrosion, Dirt and Rust. Again, never use a wire brush or any type of abrasive to clean the Aluminum Lower Receiver.
2. Wipe any dirt from the Trigger Mechanism. Carefully clean the Magazine Release Button and the cavity for the Magazine Catch on the left side of the Receiver. Also inspect and clean the Bolt Catch Mechanism and Receiver's Takedown and Pivot Pins. Clean the Buffer, Action Spring, and inside the Lower Receiver Extension (the Buffer Tube). A piece of rag attached to the Cleaning Rod and Patch Holder can be used to wipe inside the Buffer Tube.
3. If rifle has been used in very dirty/muddy conditions, the Vent Screw in the A2 Solid Buttstock (shown) or the Vent Hole in the Telestock Receiver Extension may need to be cleaned out. Use a Pipe Cleaner or piece of wire to ensure that Vent Hole is clear.
4. Buttstocks may require cleaning as necessary. Telescoping Stock Latch can be pulled down to remove Stock. Clean the 6 Position Lock Holes, and lightly lube the Receiver Extension and Latch Mechanism to ensure proper telescoping action. A2 Solid Buttstocks may require cleaning / lubrication of Storage Compartment Door Latch and Hinge, and interior of Storage Compartment.



LUBRICATION – UPPER & LOWER RECEIVERS...

Upper Receiver...

LUBRICATE LUGS

Lightly Lubricate the inside of Upper Receiver, the Bore and Chamber (using the cleaning rod and a patch), the outer surfaces of the Barrel and Front Sight, and surfaces under the Handguards. Be sure you lubricate in and around all the Locking Lugs (as in photo above). The Forward Assist should also be lightly lubed inside the Receiver and checked for function.

Front Sight Detent: Depress and apply two or three drops of CLP to it. Depress the detent several times to work the lubricant down into the Spring.



Lower Receiver...

Lower Receiver Extension: Lightly lubricate inside the Lower Receiver Extension (Buffer Tube), the Buffer and the Action Spring. Also lightly lubricate the Telestock Latch and exterior of the Receiver Extension.

Lower Receiver: Generously lubricate **ALL MOVING PARTS INSIDE**

THE LOWER RECEIVER including the Trigger, Hammer, Safety, Bolt Catch, Magazine Release, etc), and their various Pins and Detents. Don't forget the Takedown and Pivot Pins and their Detents. Use an oiled rag to wipe off any fingerprints on the exterior surfaces (they can start the corrosion process). A black cloth

Pg. 34 is best as it won't leave visible lint.



LUBRICATION – BOLT CARRIER GROUP...

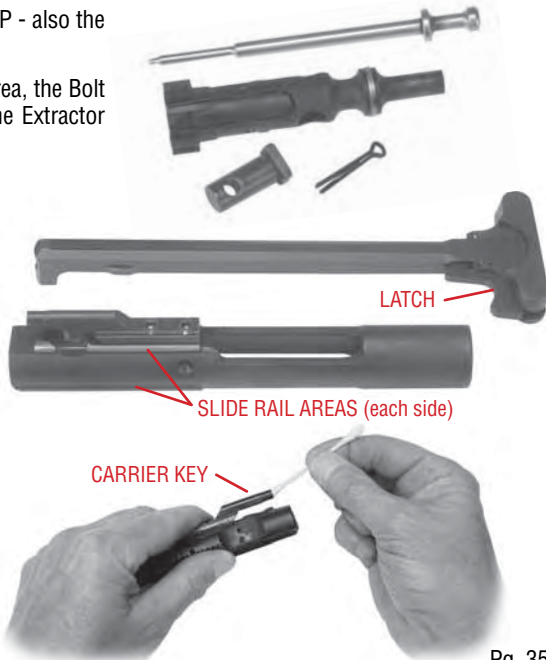
Firing Pin: Lightly lubricate the Firing Pin with CLP - also the Firing Pin recess in the Bolt.

Bolt: Generously lubricate the Bolt, its Cam Pin area, the Bolt Gas Rings. A lighter application is good on the Extractor and it's Pin.

Charging Handle: Lightly lubricate the Charging Handle and it's Latch and Spring.

Bolt Carrier: Lightly lubricate the inner and outer surfaces of the Bolt Carrier. Generously lubricate the Cam Pin area and the "Slide" Rail areas of the Bolt Carrier where they contact the inside of the Receiver.

Carrier Key: The inside of the Carrier Key on the Bolt Carrier should be dried with a Q-Tip or Pipe Cleaner - then place one drop of CLP inside.



LUBRICATION – ADJUSTABLE REAR SIGHT...

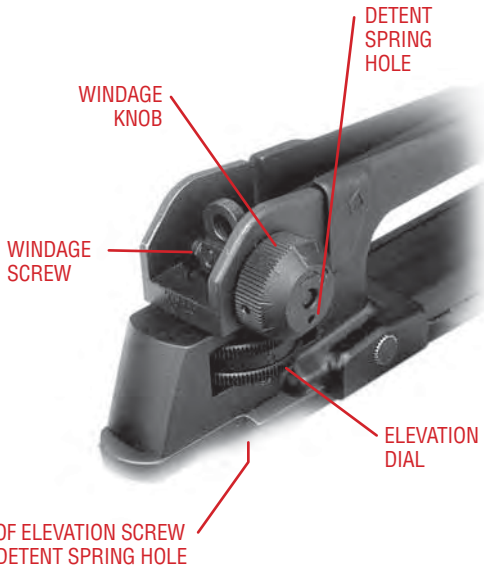
NOTE: Record how far you move the rear sight so it can be returned to its original position upon the completion of this task.

Rear Sight Moving Parts: Use 1 or 2 drops of CLP. Rotate these parts to ensure that the lubricant is spread evenly above, below and around the threads of the:

1. Elevation Knob
2. Elevation Screw Shaft
3. Windage Knob
4. Windage Screw
5. Detent Holes

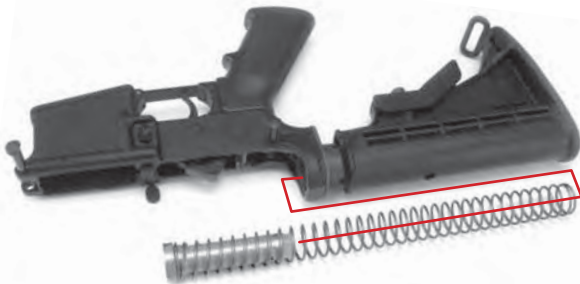
Elevation Screw Shaft: Also lube from inside the Upper Receiver as follows:

1. Turn Upper Receiver upside down.
2. Remove Charging Handle.
3. Put 2 or 3 drops on bottom of Elevation Screw Shaft and in Elevation Detent Spring Hole.
4. Rotate the Elevation Dial back and forth a few times while keeping Upper Receiver upside-down.



REASSEMBLING YOUR RIFLE...

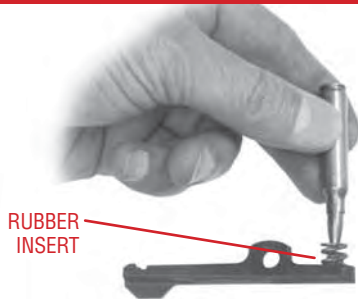
1. Insert Action Spring and Buffer (the Spring will lock onto the Buffer if you slide it on - then push and twist counterclockwise). Depress Buffer Detent and push Buffer in past the Detent, then release.



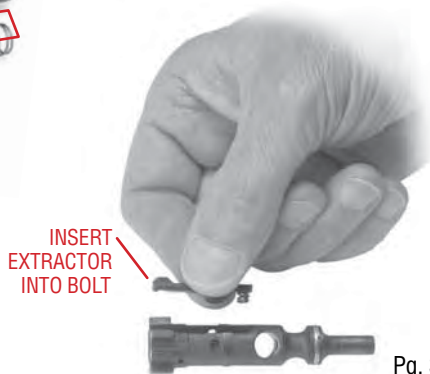
2. Insert Extractor and Spring.

NOTE: Extractor Assembly has a Rubber Insert within the Spring. Be sure not to lose it. If the Spring comes loose, put the large end of the Spring in the extractor and seat it (a Bullet tip works well).

3. Then push down on Extractor to depress Spring, and reinsert Extractor Pin.



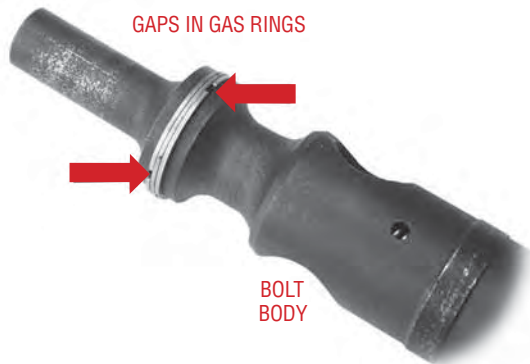
RUBBER
INSERT



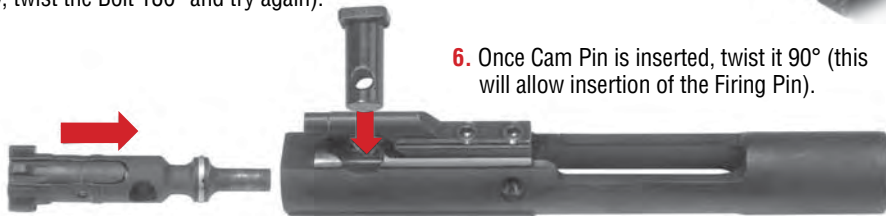
INSERT
EXTRACTOR
INTO BOLT

REASSEMBLING YOUR RIFLE... (Continued)

4. At the back end of the Bolt, stagger the Gas Ring Gaps to reduce gas pressure loss. Position the three ring gaps 120° apart around the bolt (3rd gap not seen at back side of bolt). The rings will slide around in their groove by pushing them into position with a small sharp object.



5. Insert Bolt into Bolt Carrier. Twist into position so Cam Pin can be inserted (remember Cam Pin can only be installed in Bolt from one side, so if it doesn't fit right away, twist the Bolt 180° and try again).



6. Once Cam Pin is inserted, twist it 90° (this will allow insertion of the Firing Pin).

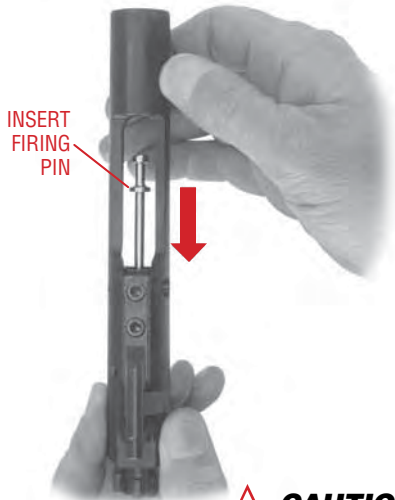


WARNING: THE CAM PIN MUST BE INSTALLED IN THE BOLT GROUP. IF IT ISN'T, YOUR RIFLE CAN STILL FIRE AND WILL EXPLODE!

REASSEMBLING YOUR RIFLE... (Continued)

7. Drop in and seat Firing Pin. Pull Bolt out, then reinsert Firing Pin Retaining Pin.

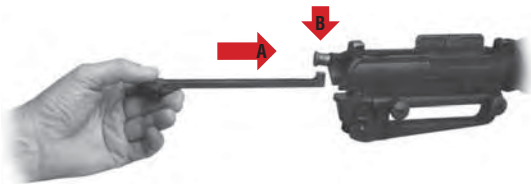
NOTE: After inserting Firing Pin Retaining Pin, Firing Pin should not fall out when Bolt Carrier Group is turned upside down.



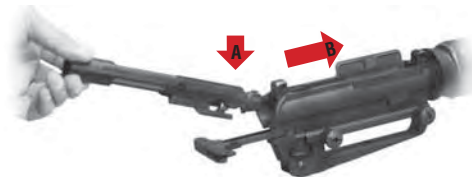
CAUTION: *BUSHMASTER DOES NOT RECOMMEND THE PRACTICE OF SWAPPING BOLTS BETWEEN DIFFERENT RIFLES. DOING SO COULD RESULT IN DAMAGE, PERSONAL INJURY OR DEATH.*

REASSEMBLING YOUR RIFLE... (Continued)

8. Insert Charging Handle into Upper Receiver and lower the “ears” at front end of Handle into cutouts in Receiver. Then slide Charging Handle partially into Receiver.



9. Lower complete Bolt Carrier Assembly into Upper Receiver. Gas Key will fit into groove in the Charging Handle. **REMEMBER**, Bolt must be pulled to “out” position in the Carrier so Cam Pin will fit into the channel in the Upper Receiver.



10. Then slide the Bolt Carrier Assembly and Charging Handle all the way into the Upper Receiver until Charging Handle Latch locks onto the Receiver.

NOTE: If Ejection Port Cover is closed, you will feel some resistance as you push Carrier and Handle in until you pop the Cover open. If Cover is already open, Handle and Carrier should slide in easily.

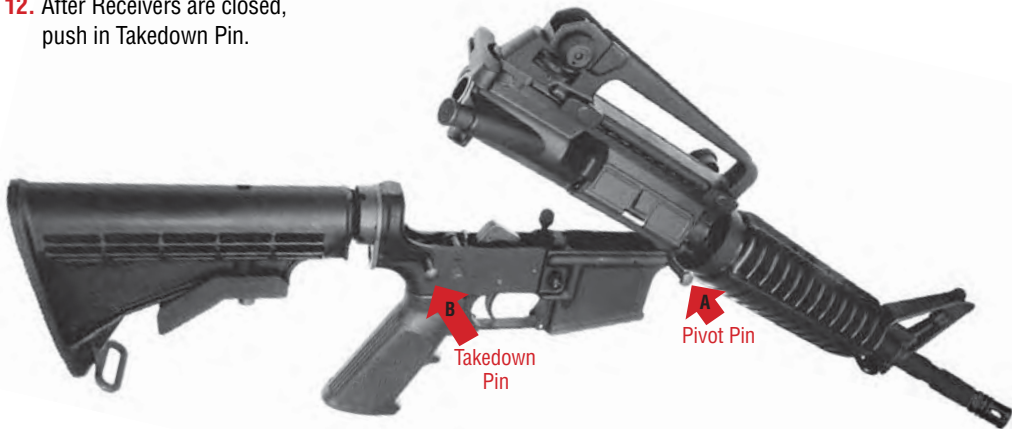


REASSEMBLING YOUR RIFLE... (Continued)

11. To join Upper and Lower Receivers, position Pivot Pin Lug of Upper Receiver into slot at front of Lower Receiver and push Pivot Pin into place.

CAUTION: ALWAYS place the Safety Selector Lever on **SAFE** before pivoting the Upper Receiver to a closed position on the Lower Receiver.

12. After Receivers are closed, push in Takedown Pin.



NOTE: Pivot Pin and Takedown Pin are “captivated” in the Lower Receiver - meaning that they are held in by their Detents and Springs so they cannot fall out and get lost.

REASSEMBLING YOUR RIFLE... (Continued)

HANDGUARD REMOVAL / REATTACHMENT - "THE BUDDY SYSTEM"...

To Remove the Handguards for cleaning, or to Reinstall them, use the "Buddy System". Because the Slip Ring (often called Delta Ring) which holds the handguards in place has a strong spring (the Weld Spring), it is necessary to have a buddy help you.

CAUTION: THE RIFLE SHOULD BE UNLOADED AND CLEARED.

1. Place the Rifle's Buttstock on the ground or a table, and press down on the Slip Ring with both hands.
2. Have your buddy remove or install one Handguard on top and the other on the bottom. There are notches designed to align and hold the Handguards on the Handguard Cap (located just behind the Front Sight Base).

NOTE: The "Half-Round" Handguards are identical and can be used interchangeably in top or bottom positions.

There are also special tools designed to aid in Handguard removal / reinstallation. See Bushmaster's website (www.bushmaster.com) or call 1-800-998-7928

SLING REATTACHMENT...

If the Sling, or any other Accessories were removed for cleaning or maintenance, they should be reattached now.



MAGAZINE DISASSEMBLY / REASSEMBLY...

Most Mil. Spec. design M-16 / AR-15 type Magazines can be disassembled for cleaning. The Magazine Spring, Magazine Follower and Magazine Baseplate can be replaced if broken or excessively worn.

1. To disassemble Magazine, pry up on bottom of Baseplate using Bullet Tip or Punch, and push indentations in Baseplate past Magazine Body
2. Slide Baseplate out of Magazine Body.



TO CLEAN and LUBRICATE: Wipe all dirt from the Magazine Body, Spring, Baseplate and Follower. Then lightly lubricate the Spring.

REASSEMBLY is the REVERSE of these steps. Make sure to slide the base under all four tabs until it snaps back under the catch.



3. Jiggle Magazine Spring and Follower out of Body.



NOTE: Do not remove Follower from Spring.

PROBLEMS / SOLUTIONS...

PROBLEM:

CHECK FOR:

WHAT TO DO:

RIFLE WON'T FIRE

SELECTOR LEVER ON **SAFE**

PUT IT ON **FIRE**

IMPROPER ASSEMBLY OF
FIRING PIN

ASSEMBLE CORRECTLY
*RETAINING PIN GOES IN BACK OF LARGE
SHOULDER ON FIRING PIN*



TOO MUCH OIL IN FIRING
PIN RECESS

WIPE OUT WITH
PIPE CLEANER



DEFECTIVE AMMUNITION

REMOVE AND DISCARD

TOO MUCH CARBON ON
FIRING PIN OR IN FIRING
PIN RECESS

CLEAN



PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:	CHECK FOR:	WHAT TO DO:
-----------------	-------------------	--------------------

BOLT WON'T UNLOCK

DIRTY OR BURRED BOLT

CLEAN, OR SEE YOUR GUNSMITH

WON'T EXTRACT

BROKEN EXTRACTOR SPRING

SEE YOUR GUNSMITH

DIRTY OR CORRODED AMMO

REMOVE STUCK ROUND
PUSH OUT WITH CLEANING ROD

CARBON IN CHAMBER

CLEAN CHAMBER

FOULING OR CARBON IN EXTRACTOR RECESS OR LIP

CLEAN EXTRACTOR



PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:	CHECK FOR:	WHAT TO DO:
WON'T FEED	DIRTY OR CORRODED AMMO	CLEAN
	DIRTY MAGAZINE	CLEAN
	DEFECTIVE MAGAZINE	REPLACE
	TOO MANY ROUNDS IN MAGAZINE	TAKE OUT EXCESS
	ACTION OF BUFFER ASSEMBLY IS RESTRICTED	TAKE OUT BUFFER AND SPRING - CLEAN THEM
	MAGAZINE NOT FULLY SEATED	ADJUST MAGAZINE CATCH: PRESS MAGAZINE CATCH BUTTON ON RIGHT SIDE



PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:

CHECK FOR:

WHAT TO DO:

WON'T FEED
(continued)

TURN CATCH CLOCKWISE TO TIGHTEN AND
COUNTERCLOCKWISE TO LOOSEN

DOUBLE FEED

DEFECTIVE MAGAZINE

REPLACE

WON'T CHAMBER

DIRTY OR CORRODED
AMMO

CLEAN

DAMAGED AMMO

REPLACE

CARBON IN CHAMBER OR
ON GAS TUBE

CLEAN



PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:

CHECK FOR:

WHAT TO DO:

WON'T LOCK

DIRT, CORROSION, OR
CARBON BUILDUP IN
BARREL LOCKING LUGS

CLEAN LUGS



CLEAN

WON'T EXTRACT

FROZEN EXTRACTOR

REMOVE AND
CLEAN

RESTRICTED BUFFER
ASSEMBLY

REMOVE
AND
CLEAN

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)



PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:

CHECK FOR:

WHAT TO DO:

SHORT RECOIL

CORRECT ALIGNMENT OF
GAPS IN BOLT GAS RINGS

“GAPS” IN THE 3 GAS RINGS SHOULD BE
STAGGERED 120° AROUND THE BOLT BODY FOR
MAXIMUM EFFECTIVENESS

TIP: Gas Rings should be
replaced every 3,000
Rounds

Note: Third Gap
not visible in this
picture - position
on back side of bolt

CARBON OR DIRT IN
CARRIER KEY OR ON
OUTSIDE OF GAS TUBE

CLEAN CARRIER KEY
OR AROUND THE GAS TUBE



PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:

CHECK FOR:

WHAT TO DO:

SHORT RECOIL
(continued)

Q-TIP, PIPE CLEANER
PIECES, OR OTHER DEBRIS
STUCK INSIDE CARRIER
KEY

CLEAN OUT IF POSSIBLE OR HAVE RIFLE
CHECKED BY YOUR GUNSMITH



BOLT FAILS TO LOCK
AFTER LAST ROUND

DIRTY OR CORRODED
BOLT LATCH

CLEAN - OR REPLACE - BOLT CATCH
CHECK FOR BUFFER ENDCAP BACKOUT
OR OBSTRUCTION
CHECK FOR FULL TRAVEL OF BOLT CARRIER

FAULTY MAGAZINE

REPLACE

SELECTOR LEVER
BINDS

NEEDS OIL

LUBRICATE WITH CLP

DIRT OR SAND UNDER
TRIGGER

CLEAN

PROBLEMS / SOLUTIONS... (Continued)

PROBLEM:

CHECK FOR:

WHAT TO DO:

BOLT CARRIER "HUNG UP"

ROUND JAMMED
BETWEEN BOLT AND
CHARGING HANDLE
AND/OR DOUBLE FEED

1. REMOVE MAGAZINE.
2. PUSH IN ON THE BOTTOM OF THE BOLT LATCH.
3. WHILE PULLING DOWN ON CHARGING HANDLE, TAP THE RIFLE BUTT ON THE GROUND. BOLT SHOULD LOCK TO THE REAR.
4. WHILE BOLT IS HELD TO THE REAR, ROUND SHOULD FALL THROUGH THE MAGAZINE WELL.

NOTE: IF THIS PROCEDURE FAILS, USE A SECTION OF CLEANING ROD TO PUSH THE BOLT FULLY TO REAR THROUGH THE EJECTION PORT.

**WARNING:
KEEP CLEAR
OF MUZZLE**

**CAUTION:
AFTER ROUND
IS REMOVED,
BOLT IS UNDER
TENSION**



COLD WEATHER SHOOTING...

If cold weather requires it, your Bushmaster can be shot with gloved or mittened hands. The Trigger Guard is designed to open and swing down allowing better access to Trigger when the shooter is wearing gloves or mittens.

1. Push in Forward Trigger Guard Pin with Bullet tip to release Trigger Guard.



2. Swing Trigger Guard down for shooting with gloves or mittens.



CAUTION:

Be careful of accidental discharges when inserting gloved fingers into Trigger Guard area.

MAINTENANCE IN EXTREME WEATHER...

EXTREME COLD: Clean and lubricate Rifle in a warm room with Rifle at room temperature. Do not lay a warm Rifle directly on snow or ice. Moving Rifle from cold into warmth will cause condensation which could keep Rifle from functioning.

HOT, WET CLIMATES: Clean and lube Rifle more frequently in moist climates. Inspect hidden surfaces of Bolt and Carrier Assembly, Upper Receiver, and Chamber / Barrel Extension (Locking Lugs), and Lower Receiver and Receiver Extension Assembly (Buffer Tube) for rust or corrosion. Also pay close attention to the Spring Loaded Detents on the rifle. Wipe off any hand / finger prints on the Rifle as they can accelerate the onset of rust or corrosion.

HOT, DRY CLIMATES: Take extra care with cleaning and lubrication as rifle will be exposed to blowing sand and fine dust, and extreme temperature shifts (hot in the daytime, freezing at night). Corrosion is less likely to form on metal parts in a dry climate. Lightly lube functional parts only - too much lubrication can attract and hold dust and sand.

RAINS: DO NOT FIRE THE RIFLE IF WATER IS PRESENT IN THE BARREL. Excess pressure can cause the Rifle to explode. Pg. 52 **ALWAYS** drain any water from Barrel prior to firing. Dry the Bore with a Swab and Cleaning Rod if wet.

COMPONENT VARIATIONS... *within the Bushmaster Weapon System*

This manual is intended to instruct the Bushmaster Rifle Operator in all necessary aspects of Maintenance, Disassembly, Reassembly, Operation and Troubleshooting of any Bushmaster Rifle. Within the Bushmaster Weapon System, there can be infinite variations of Barrel Length, Stock Type, Receiver, Forend and Sights.



For purposes of this manual, the most common Bushmaster Model sold - the M4A3 Type Carbine - has been illustrated and photographed. A Parts Schematic for this model is shown on the next two pages - many parts are common to all models in the Bushmaster System. The Bushmaster you own, or are using, may vary in appearance from the photographs and illustrations in this Manual, but the concepts, procedures and practices recommended in this Manual are universal to the Bushmaster Weapon System.

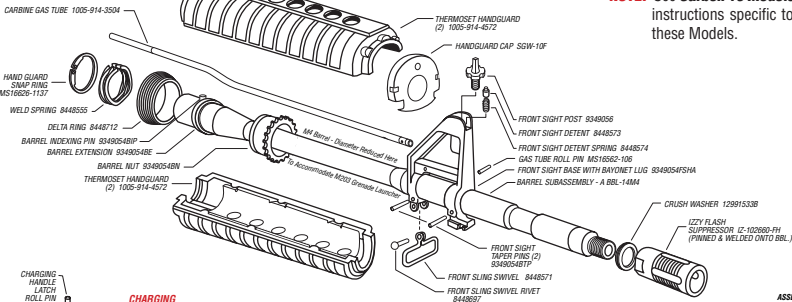
PARTS SCHEMATIC... Typical XM15 M4A3 Type Carbine (Continued)

NOTE: See **Carbin 15 Models – Differences** for comparison and instructions specific to Disassembly and Maintenance for these Models.

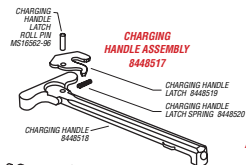


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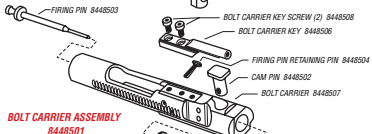
BARREL ASSEMBLY AND COMPONENTS



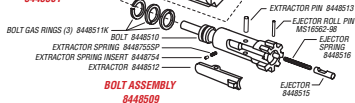
CHARGING HANDLE ASSEMBLY 9448517



UPPER RECEIVER, BOLT AND BOLT CARRIER ASSEMBLIES / COMPONENTS

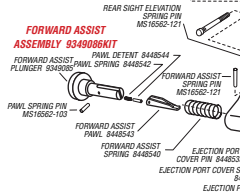


BOLT CARRIER ASSEMBLY 9448501

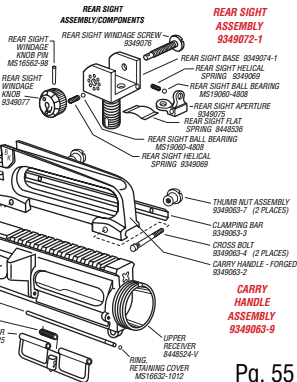


BOLT ASSEMBLY 9448509

FORWARD ASSIST ASSEMBLY 9349006KIT



COMPLETE UPPER RECEIVER & BARREL ASSEMBLY BURA3B 14M4

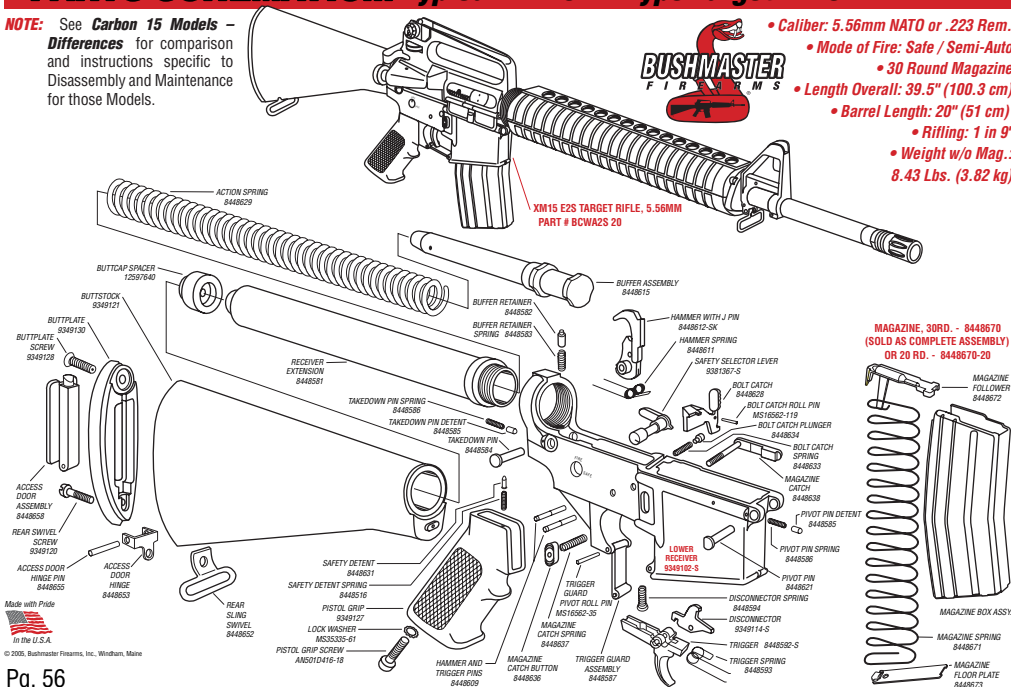


PARTS SCHEMATIC... Typical XM15 A2 Type Target Rifle

NOTE: See **Carbon 15 Models – Differences** for comparison and instructions specific to Disassembly and Maintenance for those Models.



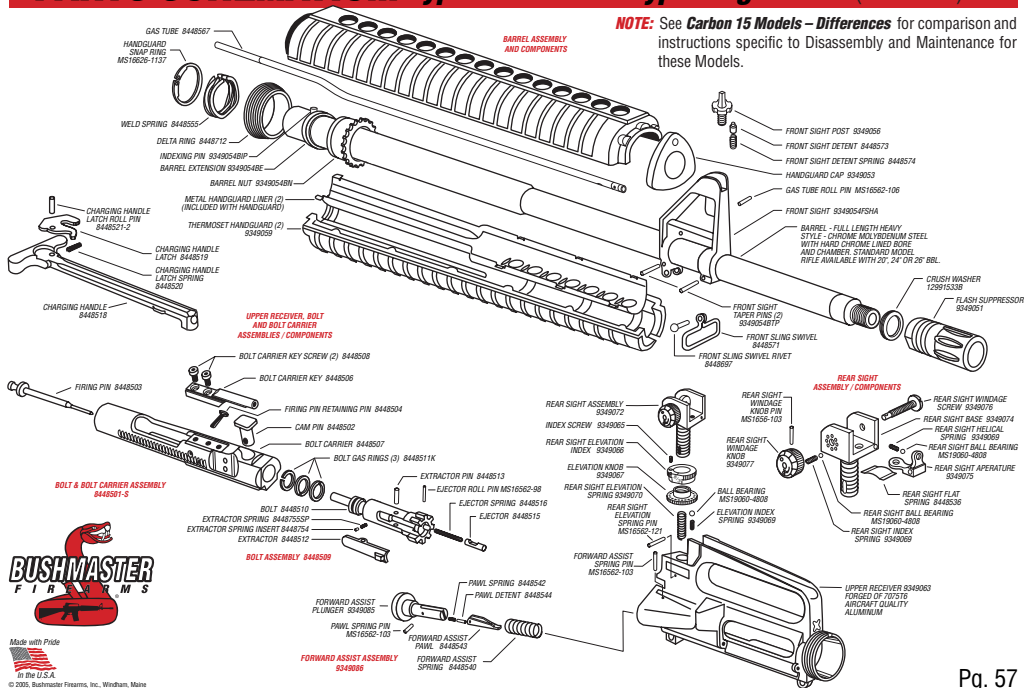
- Caliber: 5.56mm NATO or .223 Rem.
- Mode of Fire: Safe / Semi-Auto
- 30 Round Magazine
- Length Overall: 39.5" (100.3 cm)
- Barrel Length: 20" (51 cm)
 - Rifling: 1 in 9"
- Weight w/o Mag.: 8.43 Lbs. (3.82 kg)



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PARTS SCHEMATIC... Typical XM15 A2 Type Target Rifle (Continued)

NOTE: See **Carbon 15 Models – Differences** for comparison and instructions specific to Disassembly and Maintenance for these Models.



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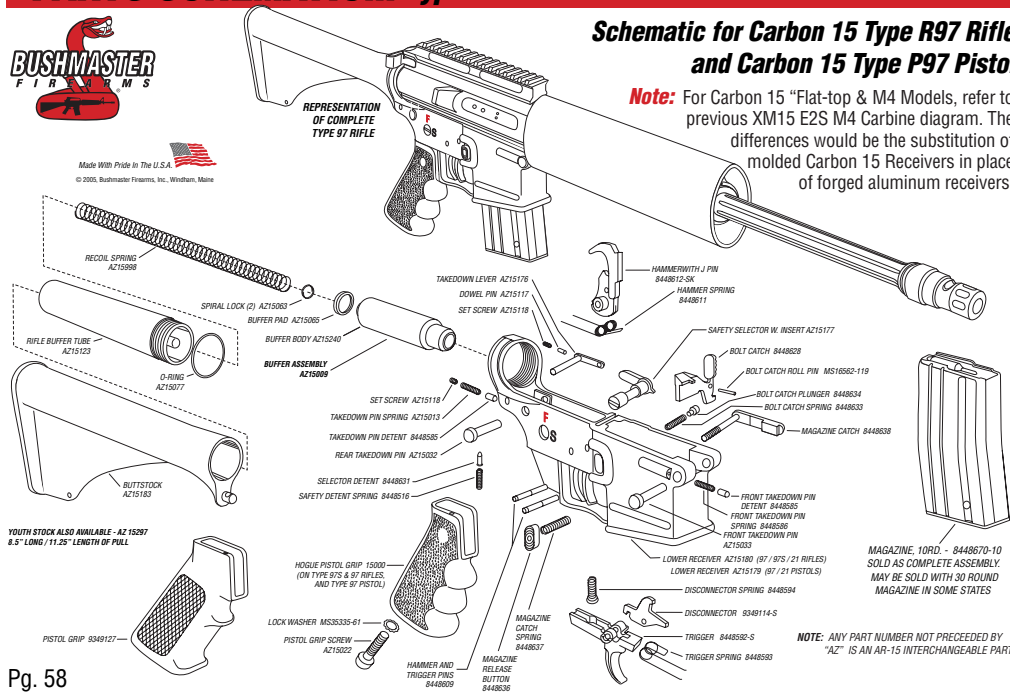
PARTS SCHEMATIC... Typical Carbon 15 Rifle & Pistol



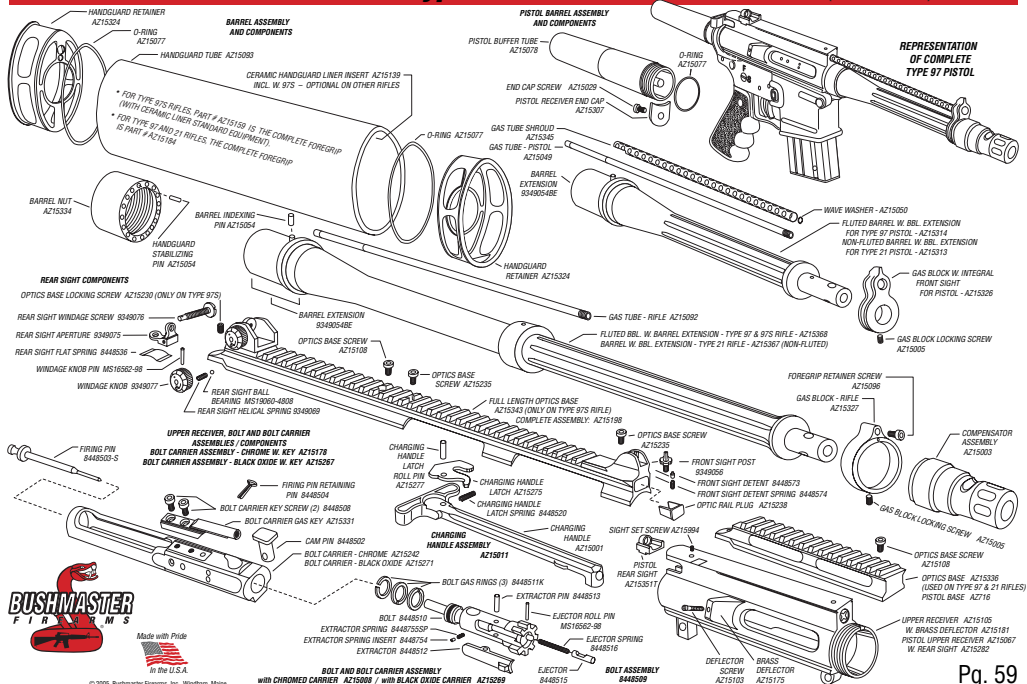
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Schematic for Carbon 15 Type R97 Rifle and Carbon 15 Type P97 Pistol

Note: For Carbon 15 "Flat-top & M4 Models, refer to previous XM15 E2S M4 Carbine diagram. The differences would be the substitution of molded Carbon 15 Receivers in place of forged aluminum receivers.



PARTS SCHEMATIC... Typical Carbon 15 Rifle & Pistol (Continued)



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Bushmaster Carbon 15 Models – Differences...

Carbon 15 Sighting Systems: Sights on Carbon 15 Rifles and Pistols vary from traditional AR-15 Type Rifle systems as shown below. All Rails on Carbon 15 Upper Receivers are machined from hard anodized aircraft aluminum in Picatinny configuration, and will accept a wide variety of scopes, optics, holographic, and red dot sights.

**Carbon 15
Flat-top Carbine**



B.M.A.S. Flip-up Rear Sight - The Rear Sight is a B.M.A.S. Flip-up with windage adjustment. The A3 Removable Carry Handle (Part# 9349063-9) will fit this Upper, and its sight will align with the A2 Standard Square Post Front Sight which is elevation adjustable.

Part# AZ-C1516M4FT

**Carbon 15
Model 4 Carbine**



Dual Aperture Rear Sight (windage adjustable) integral on Picatinny Optics Rail. A2 Standard Square Post Front Sight (elevation adjustable).

Part# AZ-C15M4PRE

Dual Aperture Rear Sight (windage adjustable) and A2 Post Front Sight (elevation adjustable) integral on full length Picatinny Optics Rail.

Carbon 15 R97S Rifle



Part#
AZ-C15R97S

C15 P97S Pistol



Part# AZ-C15P97S
also AZ-C15P21S

Dual Aperture Rear Sight (windage adjustable) and A2 Post Front Sight (elevation adjustable) integral on full length Picatinny Optics Rail.

**Carbon 15 Lady and No Sights provided - Receiver length Picatinny Rail
R21 Rifle**



Part# AZ-C15R21C
& AZ-C15R21

C15 P21 Pistol
Part# AZ-C15P21
also AZ-C15P97

Ghost Ring Rear Sight and Blade Front Sight.

Bushmaster Carbon 15 Models – Differences... (Continued)

Carbon 15 Upper & Lower Receivers: Beside the fact that they are molded Carbon Fiber material, the Upper and Lower Receivers on Carbon 15 Rifles and Pistols in the “R” or “P” Series Models separate from each other in a different manner than XM15 E2S Bushmaster models with Aluminum Receivers. The disassembly steps are:

1. Weapon should be in a **SAFE CONDITION**. Clear Rifle (or Pistol) and remove Magazine. Make sure Bolt Carrier is fully forward and locked.
2. Push both Takedown and Pivot Pins out from left side of Lower Receiver.
3. Grasping the Lower by the Pistol grip and the Upper by the Forend as shown, tilt the front end of the Upper so that Pivot Pin Lug clears the Lower Receiver.
4. This will allow you to move the Upper forward - separating it from the Lower - while at the same time releasing the Buffer and the Action Spring from the Buffer Tube. Use Caution as the Action Spring will be under some tension.
5. Reassembly is the reverse of these steps.

NOTE: These instructions apply specifically to these Models:

R97S Rifle (AZ-C15R97S)

R97 Rifle (AZ-C15R97)

R21 Rifle (AZ-C15R21)

“Lady” Rifle (AZ-C15R21C)

P97S Pistol (AZ-C15P97S)

P21S Pistol (AZ-C15P21S)

P97 Pistol (AZ-C15P97)

P21 Pistol (AZ-C15P21)



Bushmaster Carbon 15 Models – Differences... (Continued)

Carbon 15 Rifle Buttstock Removal: The molded Carbon Fiber Buttstocks on “R” Series Rifles can be easily removed from the Lower Receiver for more convenient storage or cleaning, or to gain access to the Buffer Tube. The disassembly steps are:

1. Weapon should be in **SAFE CONDITION**. Clear the Rifle and remove Magazine. Make sure Bolt Carrier is fully forward and locked.
2. Identify the Buttstock Takedown Lever on the left side of Lower Receiver.



3. Use your finger or thumb to swivel the Buttstock Takedown Lever downward in a counterclockwise rotation to the “release” position.
4. This will allow you to slide the Buttstock off the Buffer Tube and Lower Receiver.
5. Reassembly is the reverse of these steps. Be sure the Buttstock Takedown Lever is in the “release” position before attempting reinstallation.



6. Carbon 15 R97S Rifle and Buttstock shown completely separated below. Do not attempt to fire the rifle without the Buttstock securely in place. You could experience injury from recoil, or loss of control of the rifle.

NOTE: A Youth sized Buttstock is available (2” shorter than standard - Part# AZ15279) to make shooting more comfortable for younger shooters and smaller women.



NOTE: Buttstock removal applies specifically to these Models:
R97S Rifle (AZ-C15R97S)
R97 Rifle (AZ-C15R97)
R21 Rifle (AZ-C15R21)
“Lady” Rifle (AZ-C15R21C)

Bushmaster Carbon 15 Models – Differences... (Continued)

Quick Detach Compensator Removal: The Stainless Steel Barrels on Carbon 15 “R” Series Rifles and P Series Pistols are fitted with an easily removed Quick Detach Compensator. The disassembly steps are:

1. Weapon should be in **SAFE CONDITION**. Clear the Rifle and remove Magazine.
2. Grasp the Sliding Collar of the Q.D. Compensator and push it towards the muzzle end while holding the body of the Compensator.
3. Once spring tension is released on the Ball Detent Locking mechanism, the Compensator can be slide off the end of the muzzle.
4. Reassembly is the reverse of these steps plus a twisting motion to ensure that the Balls of the Locking mechanism drop into their respective detents on the outside of the muzzle.



WARNING: Do not fire the Rifle unless the Q.D. Compensator is firmly locked in place.

NOTE: The Rifle may be safely fired with the Q.D. Compensator completely removed.

Carbon 15 Rifle Safety Lever Markings: Molded Carbon Fiber Receivers on Carbon 15 Rifles and Pistols have Safety Lever Indicator Markings either engraved into the Carbon Fiber material (most military / LE models), or inset into the Lower with colored letters (most Commercial models). **S** = SAFE (white letters on both sides of Receiver); **F** = FIRE (red letters on both sides of Receiver). Compare with roll-stamped markings on Aluminum Receiver at right.



Typical Bushmaster
Carbon 15 Model



Typical Bushmaster XM15 Model

No Ejection Port Cover on Carbon 15 Rifles & Pistols: While the Aluminum Receiver XM15 Models include the original military design, spring loaded, metal Ejection Port Cover, the Receivers on Carbon 15 Rifles and Pistols do not. The Bolt Carrier can be easily removed for cleaning and maintenance, so the Ejection Port Cover is not found on the Carbon 15 Models.

LIMITED ONE YEAR WARRANTY...

Bushmaster firearms are warranted to be free from defects in materials and workmanship. Any such defect of which Bushmaster Firearms, Inc. is given written notice, as provided below, within one year and ten days from the date of first purchase by a customer will be remedied by Bushmaster Firearms, Inc.

This warranty is granted by **Bushmaster Firearms, Inc., P.O. Box 1479, 999 Roosevelt Trail, Windham, ME 04062.**

To initiate a Warranty claim, call Bushmaster Customer Service (toll free: 8:30 AM to 6:00 PM E.S.T. - Monday thru Friday - **1-800-883-6229**) to get a "Return Merchandise Authorization" (RMA) number. Warranty claims should state (in writing) the model and serial number of the firearm concerned, a description of the difficulty experienced, and the date of purchase. The firearm concerned should be shipped (transportation charges prepaid), to the **Warranty Service Department, Bushmaster Firearms, Inc., 999 Roosevelt Trail, Windham, ME 04062.** Firearm shipment should be insured by the owner, as **Bushmaster Firearms, Inc. will accept no responsibility for loss or damage in transit.**

Shipping and insurance charges for the return of a firearm to its owner will be paid by Bushmaster Firearms, Inc. if the related claim is a proper claim for warranty work.

Under no circumstances shall Bushmaster Firearms, Inc. be responsible for incidental or consequential damages with respect to economic loss or injury to property, whether as a result of express or implied warranty, negligence or otherwise. Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation may not apply to you. Bushmaster Firearms, Inc. will not be responsible for the results of careless handling, unauthorized adjustments, defective, low quality, reloaded, or improper ammunition, corrosion, neglect, ordinary wear and tear, or unreasonable use. Furthermore, the liability of Bushmaster Firearms, Inc. under this warranty shall be limited solely to the obligation to repair or replace the firearm, and to pay transportation and insurance charges for return of the firearm to owner.

NOTE: Handguns and long guns are classified as FIREARMS or DANGEROUS WEAPONS. Guns are surrendered by Bushmaster Firearms, Inc. with the express understanding

Pg. 64 that it assumes no responsibility for resale handling under local laws and regulations.

PLEASE PRACTICE SAFE FIREARMS HANDLING!



WARNING: IF THIS FIREARM IS CARELESSLY OR IMPROPERLY HANDLED, UNINTENTIONAL DISCHARGE COULD RESULT AND COULD CAUSE INJURY, DEATH, OR DAMAGE TO PROPERTY.



CAUTION: CAREFULLY READ THIS INSTRUCTION MANUAL PRIOR TO LOADING AND FIRING THIS FIREARM. FOLLOW ALL INSTRUCTIONS ON THE PROPER HANDLING AND SAFE USE OF THIS FIREARM - LIVES MAY DEPEND ON IT!



CAUTION: USE ONLY CLEAN, DRY, HIGH QUALITY COMMERCIALY MANUFACTURED AMMUNITION IN GOOD CONDITION which is appropriate to the 5.56mm NATO / .223 Remington caliber of your firearm. Bushmaster does not recommend the use of remanufactured or hand loaded ammunition because it may damage your rifle.



WARNING: THIS WEAPON COULD CHAMBER A ROUND if it is dropped or jarred with a loaded magazine in place - either with the Bolt Carrier Assembly locked to the rear, or in its forward position.

A SAFETY NOTE REGARDING LEAD... Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition may result in exposure to lead, a substance known to cause birth defects, reproductive harm, and other serious physical injury. Have adequate ventilation at all times. Wash hands thoroughly after exposure.

This Bushmaster Operating and Safety Instruction Manual should always be kept with your Bushmaster Firearm, and in case of sale or transfer, should be passed on to subsequent owners.

Model: _____

Serial Number: _____

Sold To: _____

Date Sold: _____



999 Roosevelt Trail
Windham, ME 04062 U.S.A.

Part # BFIMANA20P
Revision of 2005



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Web: <http://www.bushmaster.com> • E-Mail: info@bushmaster.com***