
MSS™

Modular Stock System



INSTALL AND USAGE M93 CARBINE STOCK

(INITIAL PRODUCTION VERSION)

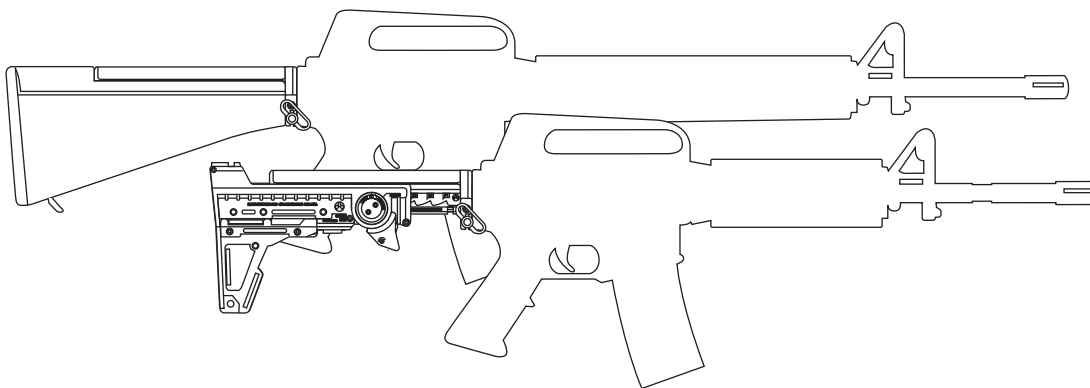
Magpul Industries Corp

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Introduction to the Modular Stock System

The Modular Stock System (MSS) is a complete stock solution developed by Magpul Industries Corp, of Boulder Colorado U.S.A. It is designed to replace the buffer tube and stock assembly of the M16 Rifle and M-4 Carbine but can also be adapted to other types of weapon systems.

The patent pending MSS features a receiver extension tube, which acts as a modular base for a selection of fixed and collapsible stocks. An individual soldier without the expertise of an armorer can accomplish changing the stock configuration. The MSS buffer unit also provides a single common sling mount point for all stocks.

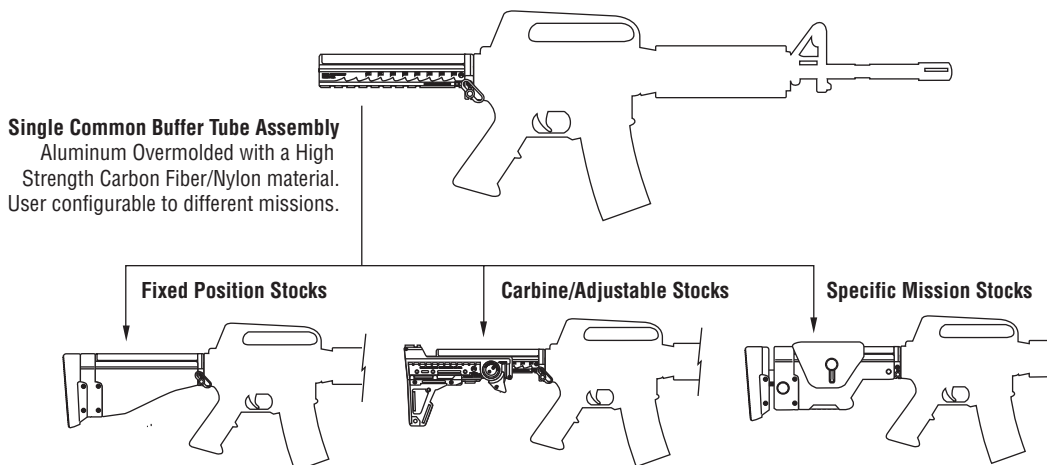


By unifying the buffer tube assembly, the user can tailor the stock to the particular mission involved. In addition to providing flexibility with different types of fixed length stocks, the MSS also has a vastly improved collapsible carbine stock.

MSS Common Buffer Tube Assembly

The heart of the MSS is a common buffer tube assembly that allows the use of different stock types, configurable to different missions.

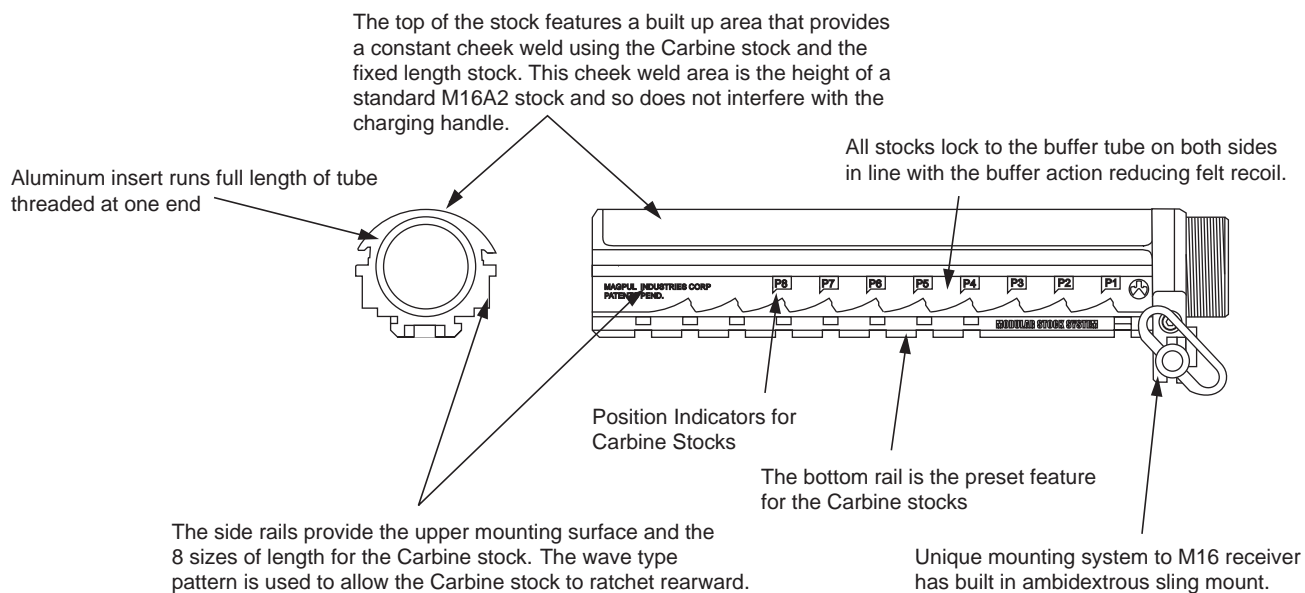
These are examples of the three main types of stocks the MSS can accommodate:



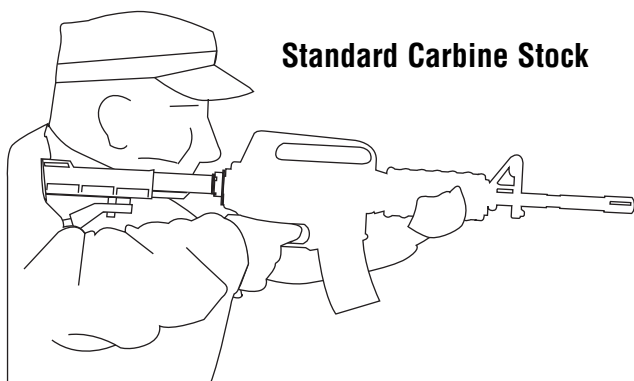
MSS Common Buffer Tube Assembly - Detail

Unlike the current metal buffer tube, the MSS tube will be molded out of a high strength carbon/nylon material over a full length aluminum tube which contains the threads. It will be the same length as the current carbine buffer tube and will be able to use any buffer/ spring combination designed for this system.

The common buffer tube assembly has features molded into it allow it to serve its multiple functions.



Examples of Cheek Welds (Conventional vs MSS)



Notice the Cheek Weld is half on, half off the stock. Not only is this very different than the standard stock, Cheek weld also changes dramatically depending on what position the collapsible stock is locked in.

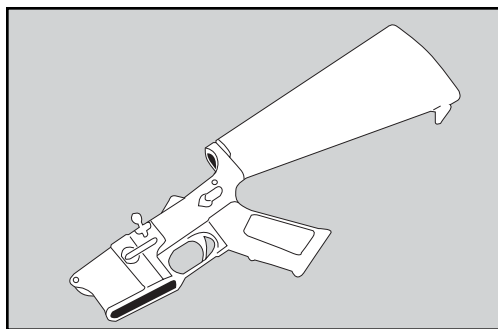


Here the cheek rests in a straight line at the same height as the standard fixed stock. It also remains constant throughout the 8 preset sizes of the collapsible stock

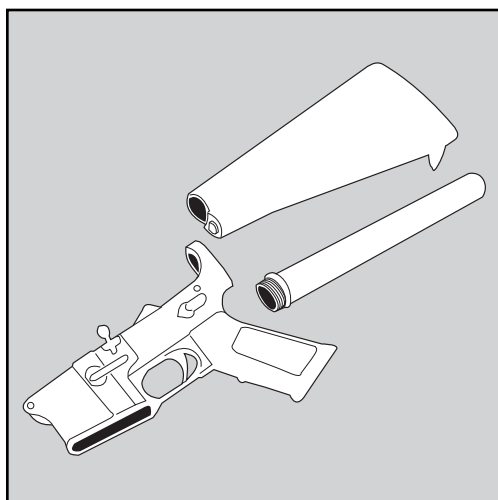
Installing the M9 Buffer Assembly

Unlike the current metal buffer tube, the MSS tube will be molded out of a high strength carbon/nylon material over a full length aluminum tube which contains the threads. It will be the same length as the current carbine buffer tube and will be able to use any buffer/ spring combination designed for this system.

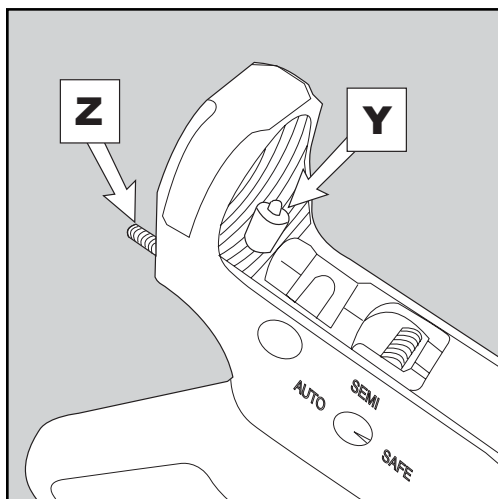
The common buffer tube assembly has features molded into it allow it to serve its multiple functions.



1. Check to make sure firearm is unloaded. Remove Upper Receiver, Buffer and Spring.

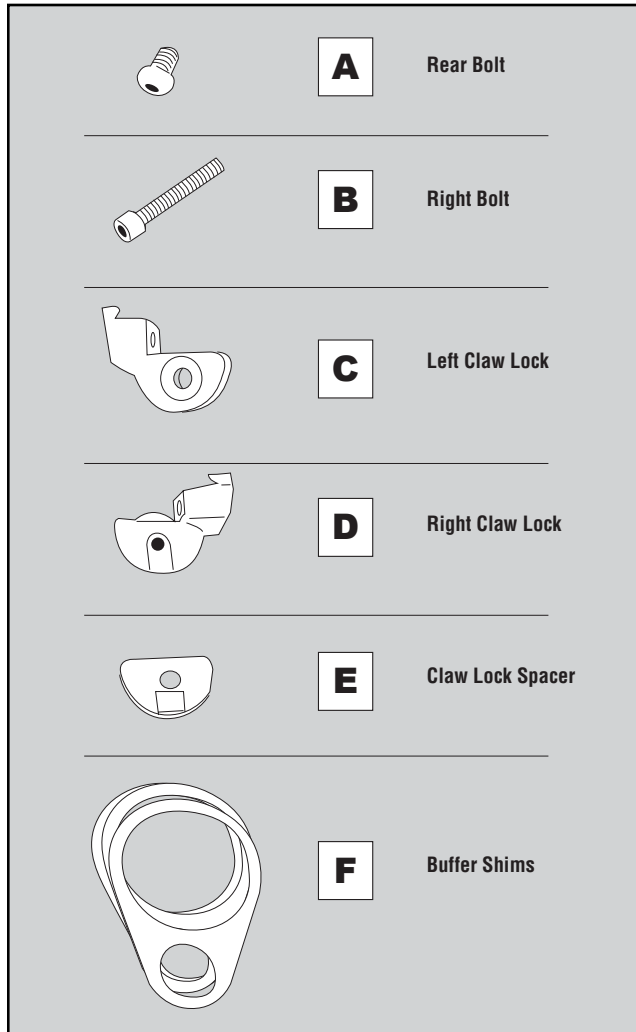


2. With correct tools, remove current stock from lower receiver per accepted guidelines.



3. Keep Buffer (Y) and Push Pin (Z) detents /springs for reassembly with the MSS M9 Buffer Assembly

Installing the M9 Buffer Assembly



4. Make sure you have all the install parts.

(A) Rear Bolt

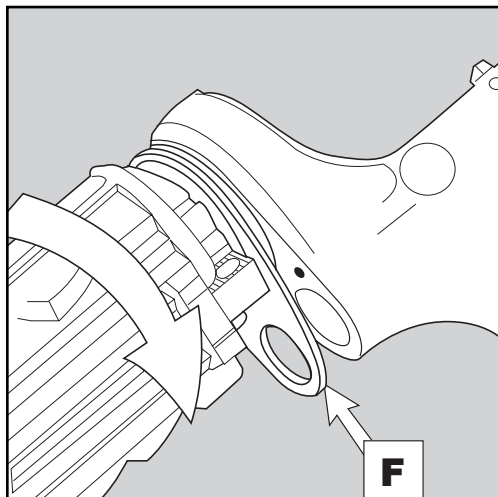
(B) Horizontal Bolt

(C) Left Hand Claw Lock

(D) Right Hand Claw Lock

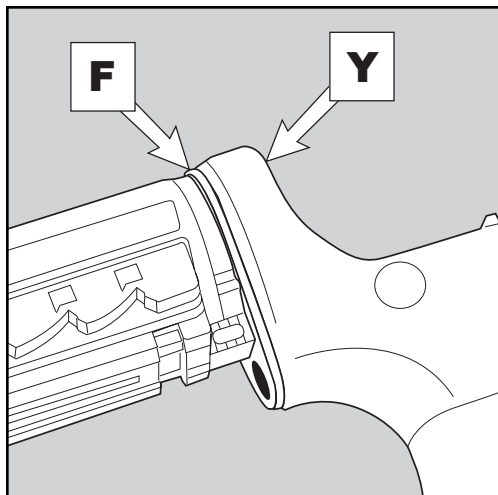
(E) Claw Lock Spacer (if required)

(F) Buffer Shims



5. Starting with the mid sized shim (0.5 -F) on the threaded end of the Buffer Tube, screw in the M9 Buffer Assembly all the way into the receiver till it stops.

Installing the M9 Buffer Assembly

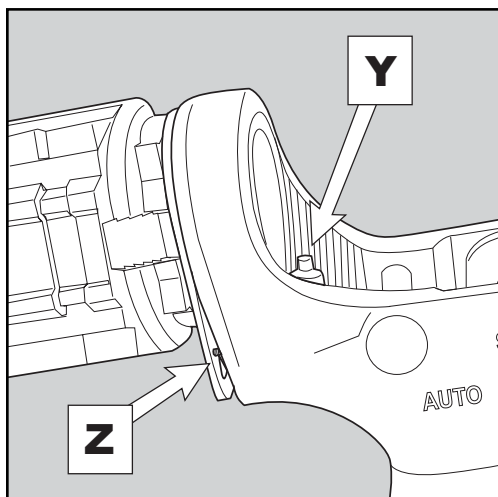


6. Note the position where the buffer stops. It should fit snugly in an upright position as shown in the photograph.

If needed some mass may be removed from the surface of the shim (F) to allow it to fit, just make sure that the end of the buffer allows clearance for the buffer detent pin (Y) to fit correctly AND CLEAR THE UPPER RECEIVER.

The threads of the Buffer Tube are back slightly on the tube to allow for the end of the tube to be ground down slightly to allow installation where the shim has to be thinned a lot.

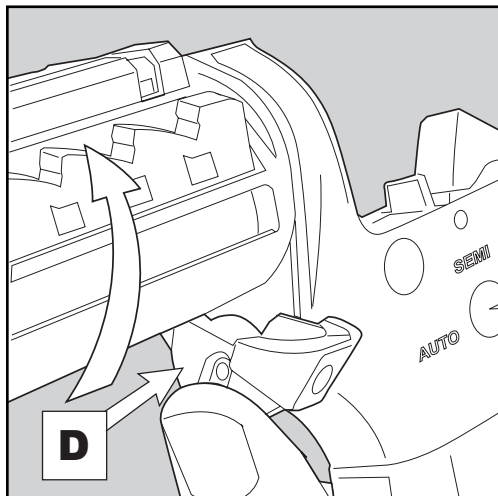
The Experimental version of the M93 only comes with the three sizes of shim but the production versions will have several more sizes. Shims can be combined and thinned to get the correct size.



7. Screw out the Buffer Assembly until you can re-install the buffer detent (Y) and spring (Z).

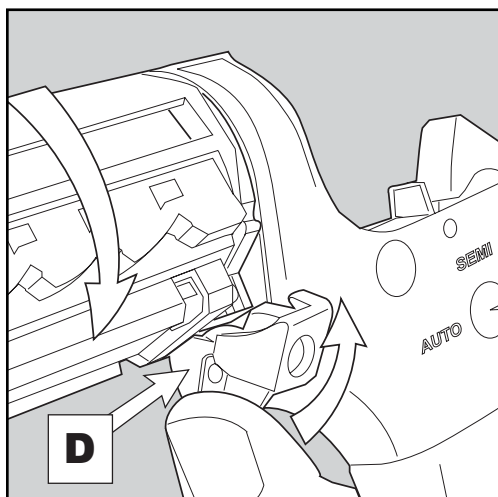
8. After installing the push pin detent and screw in the buffer tube, but stop short of the upright position.

Installing the M9 Buffer Assembly

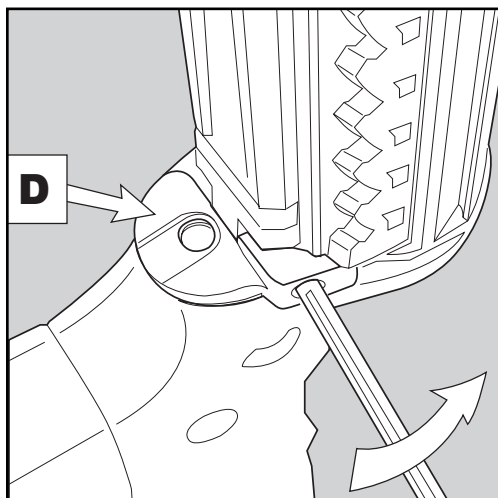


9. Rotate the Buffer counter clock wise so it is upside down.

10. Install right hand claw lock (D) making sure it is rotated in the receiver hole about 15 degrees to the left to allow the Buffer Assembly to rotate back to the upright position.

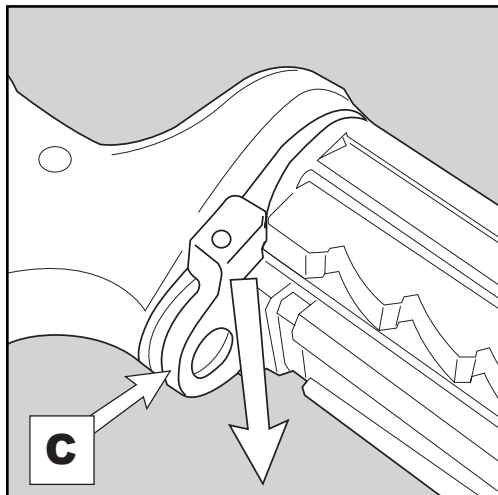


11. Carefully and slowly screw in the Buffer Assembly back to the Zero position and at the at the last 15 degrees rotate right hand claw lock (D) to the upright position.



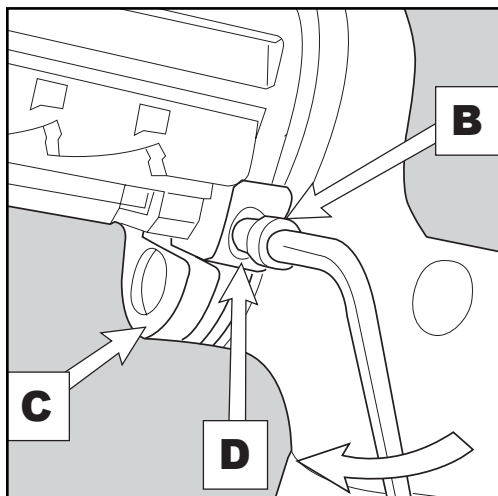
12. With an object like a Allen wrench inserted into the hole, slowly and carefully rotate the right claw lock (D) into full contact with the buffer tube.

Installing the M9 Buffer Assembly

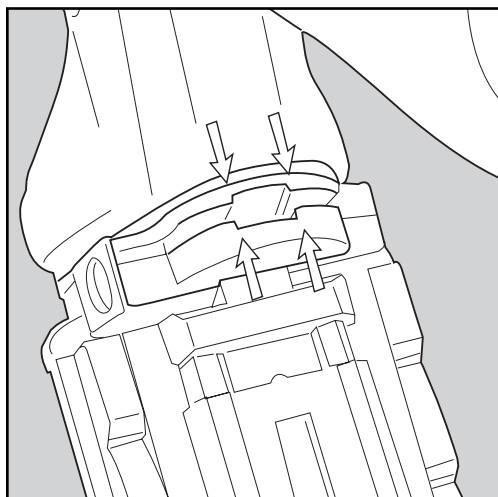


13. Install Left claw lock (C) by sliding it into position from the other side.

Note: If you cannot fit it into position then attempt to repeat step 11.



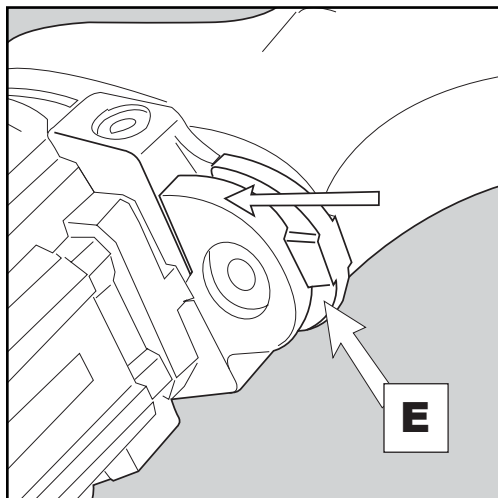
14. Install the Horizontal bolt (B) and slowly tighten.



15. Tighten the Horizontal bolt (B) until the cutouts on the base of the claw locks line up as shown in the picture.

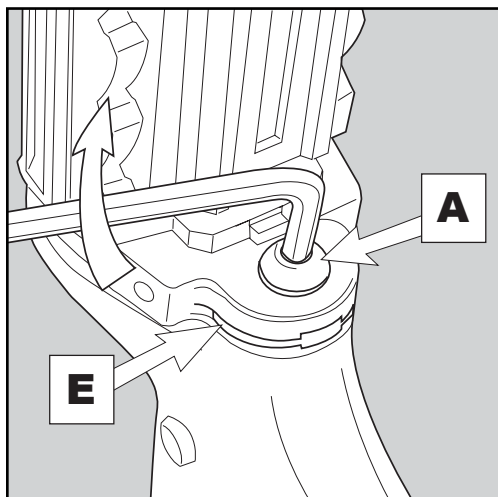
Warning Do not over tighten the bolt. Damage could result.

Installing the M9 Buffer Assembly

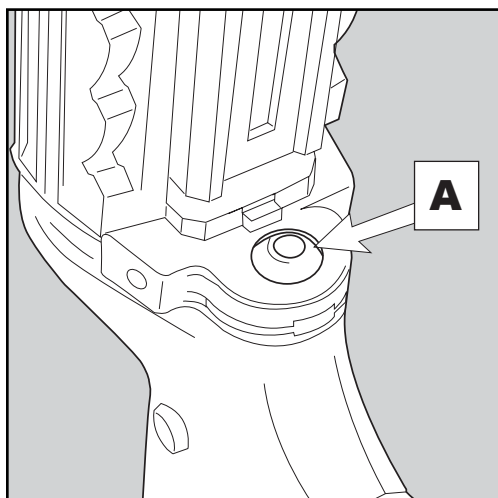


16. Install the spacer (E) by sliding it into position from the base of the two claw locks.

Note: If using a MSS receiver mount device (like a single point sling loop) install this in lieu of the spacer



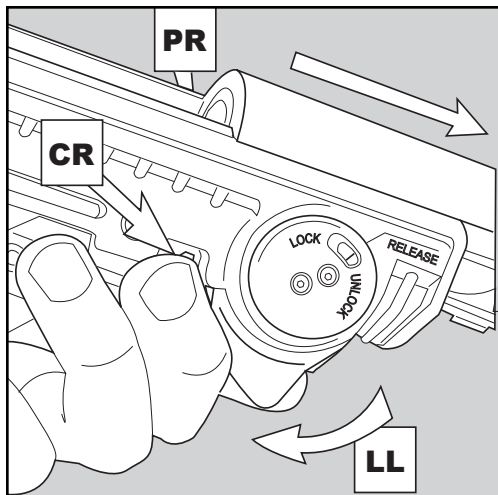
17. Insert rear bolt (A) as shown and confirm it screws in through the spacer (E)



18. The rear bolt (A) should be screwed in till it is slightly recessed as shown in the picture.

19. Once installed it is advisable to remove one bolt at a time and secure it with Loctite or a similar substance.

Installing and Removing the M93 Onto the M9 Buffer Tube

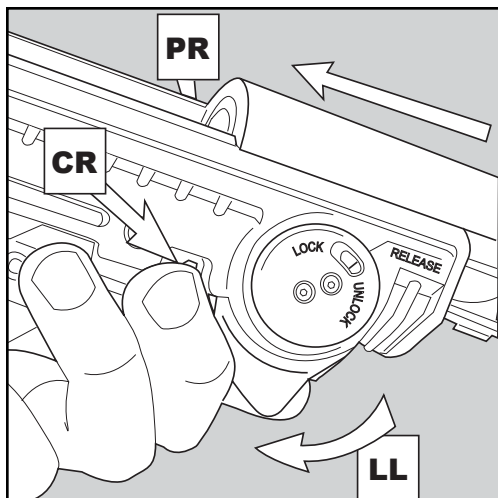


To install the M93 Stock onto the M9 Buffer Assembly, just line up the M93 Stock as shown in the diagram and while depressing both the Capture Release (CR), Preset Release (PR) and Lock Lever (LL) push the unit onto the Buffer Assembly.

From this point the M93 stock is captured on the M9 Buffer Assembly and will travel all the way from position zero (P0) to position seven (P7) unless restricted by a preset clip.

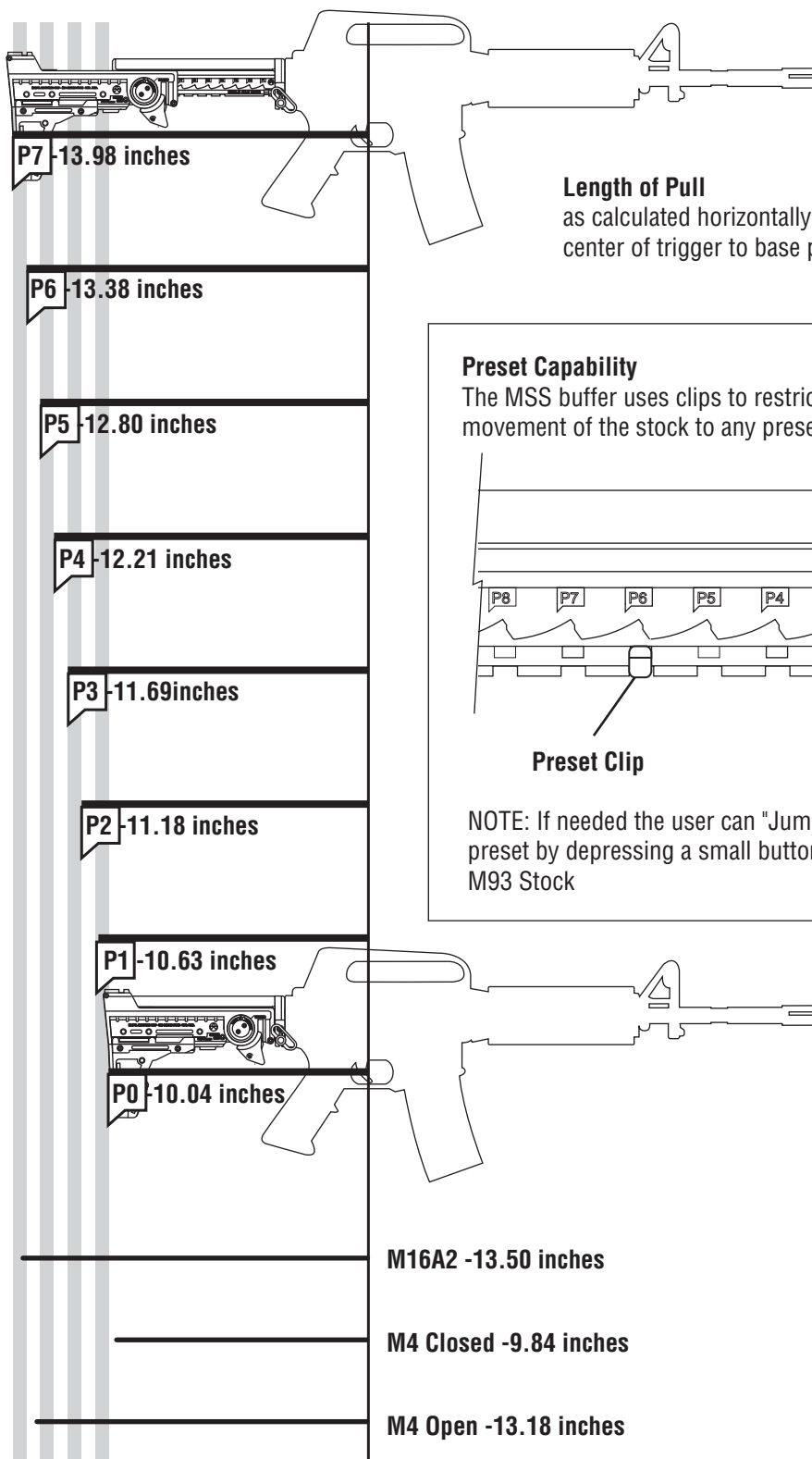
The stock has markings for positions P8 and P9. These are for stocks other than the M93 and can be ignored.

NOTE: The experimental version of the stock requires the buttons (CR,PR) to be depressed while being installed- The production version will just click into place (like a Glock Slide) and only the main lock lever will be required to be depressed.

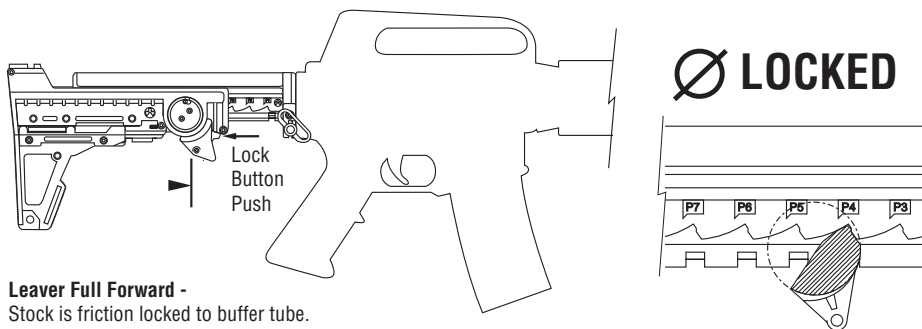


To Remove the M93 Stock from the M9 Buffer Assembly, depress the Capture Release (CR) button all the way in, then depress the Preset Release (PR) and Lock Lever (LL) pull the unit off of the Buffer Assembly.

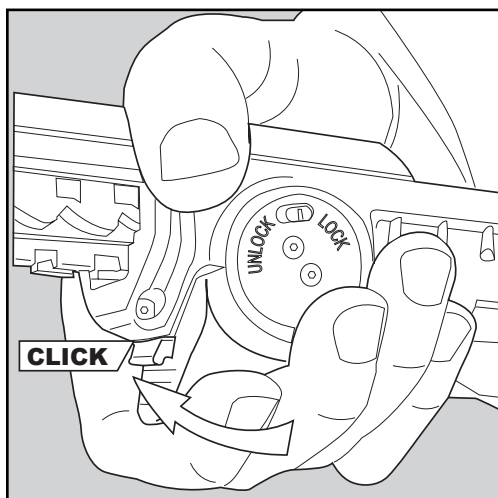
M93 Carbine Stock - Lengths of Pull



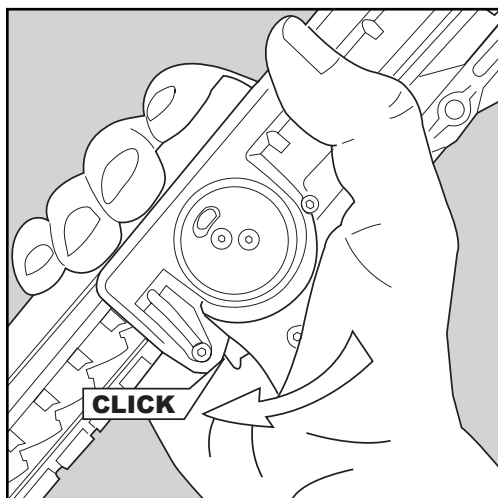
Using the M93 Carbine Stock



Leaver Full Forward -
Stock is friction locked to buffer tube.
No movement back or forth. Lock button required to be depressed to move leaver from this position

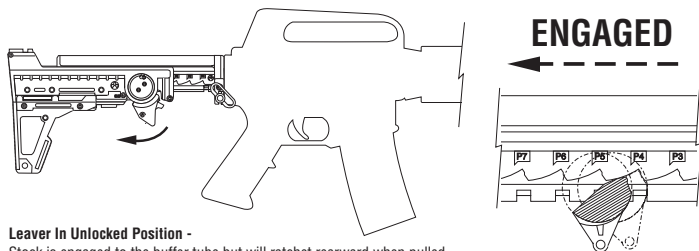


To Lock the Stock in position push forward on the lever . An audible click should be heard.



Here is an alternate way of locking the stock normally employed when the stock is shouldered.

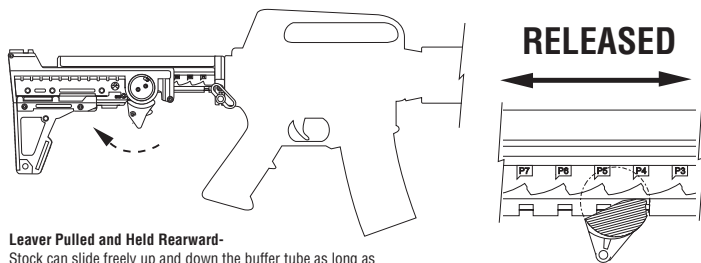
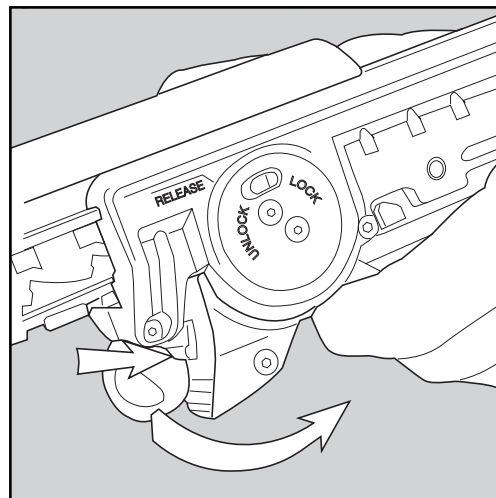
Using the M93 Carbine Stock



Leaver In Unlocked Position -
Stock is engaged to the buffer tube but will ratchet rearward when pulled
Note: Even in the unlocked state the stock will NOT travel forward, thus ensuring the capability for using the weapon in the unlocked state.

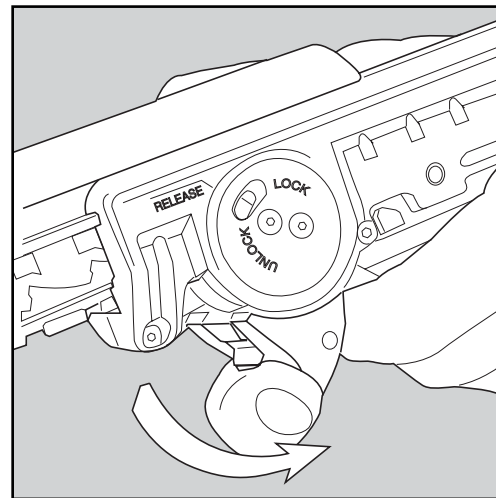
To unlock the stock, first depress rearward the small latch on the lever. Then pull the main lever to the most rearward position. A sweeping action with the finger is all that is required.

When the lever is released it will lock up in the next available position. In this position the stock can be pulled rearward but will lock up if pushed forward



Leaver Pulled and Held Rearward-
Stock can slide freely up and down the buffer tube as long as pressure is applied to the lever

So long as the lever is depressed the stock will slide freely.

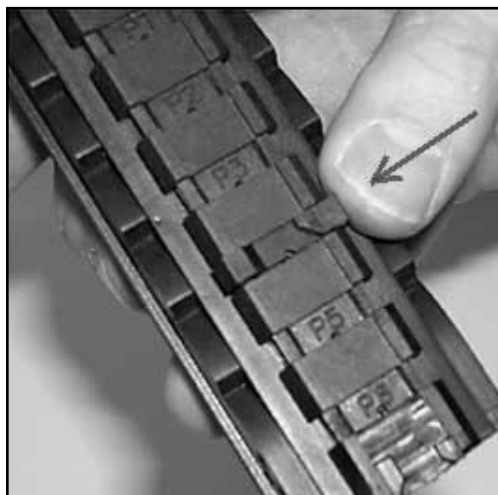


Installing and using Presets



The M9 Buffer Assembly is designed to allow the use of preset clips to retard the rearward motion of the M93 Carbine Stock to a length of pull commonly used by the operator.

For example when using body armor, a SWAT team member, may train with the stock at position four (P4). By placing a preset clip in position four (P4) the stock will only travel between positions zero (P0) and four (P4). This will allow the operator to deploy the stock from the most compact position to his preferred length within seconds.



To use the preset feature-

1. Define the length of pull to be preset.
2. Remove the M93 Carbine Stock from the M9 Buffer Assembly.
3. Place the preset clip in the correct direction (as shown in the diagram) into the corresponding slot below the Buffer Assembly. Push the big end in first.



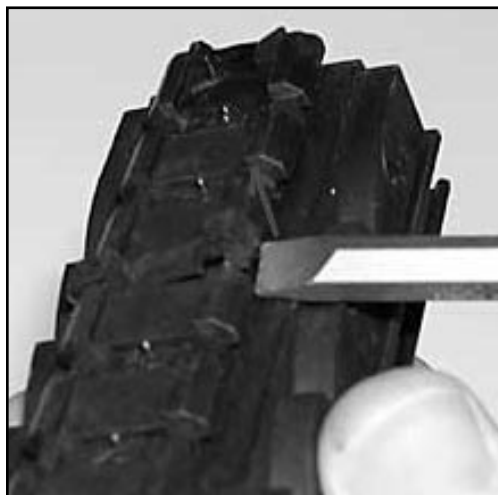
4. Push downward on the other side to click the preset fully into place
5. Reinstall the M93 Carbine Stock making sure you can close the stock to position zero (P0).

Installing and using Presets

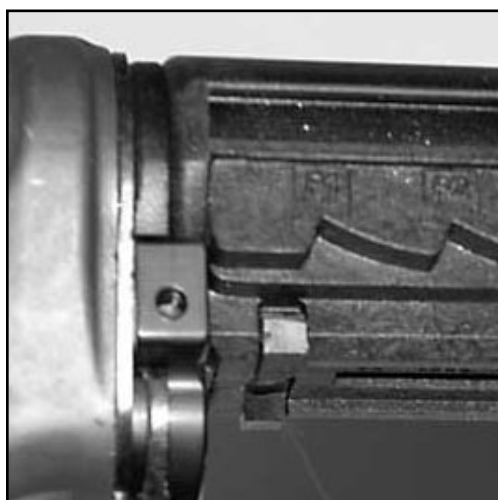


The stock is now captured in the preset range. To bump over the preset the preset release must be depressed while pulling to the rear. In the experimental version you might also have to depress the capture release button slightly due to the tight tolerances.

Note: the preset clips are a semi-disposable item and can be damaged if the stock is pulled back too forcibly. A metal version of the preset clip, attached via an allen nut is an available option.

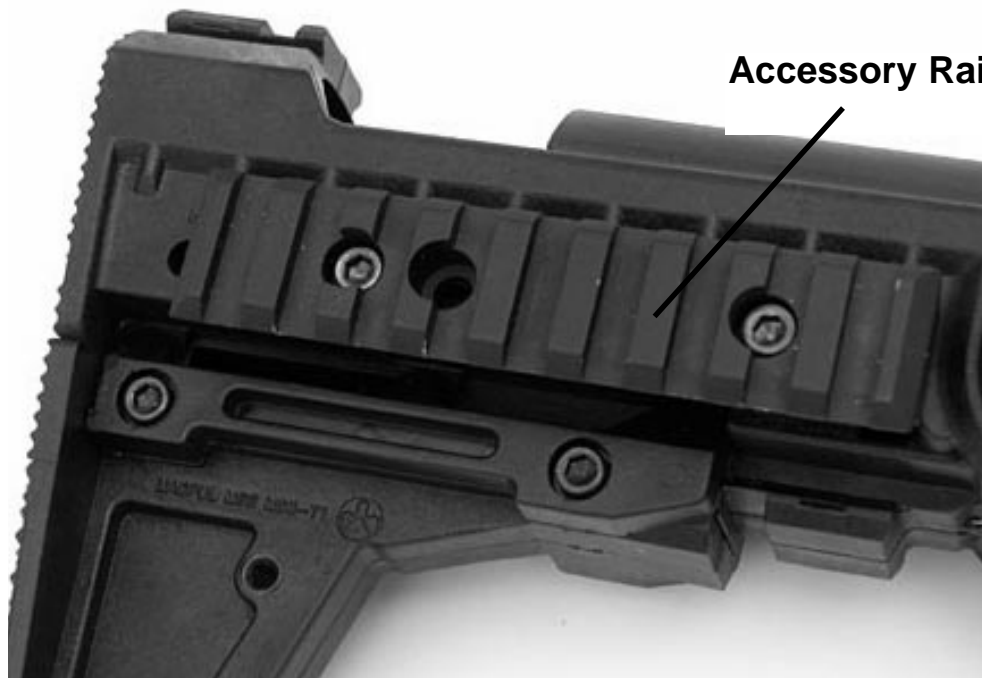


Removal of the preset can be accomplished by inserting a flat tipped screw driver under the preset and popping out of place.



The forward most preset slot is for storage of the preset when not in use.

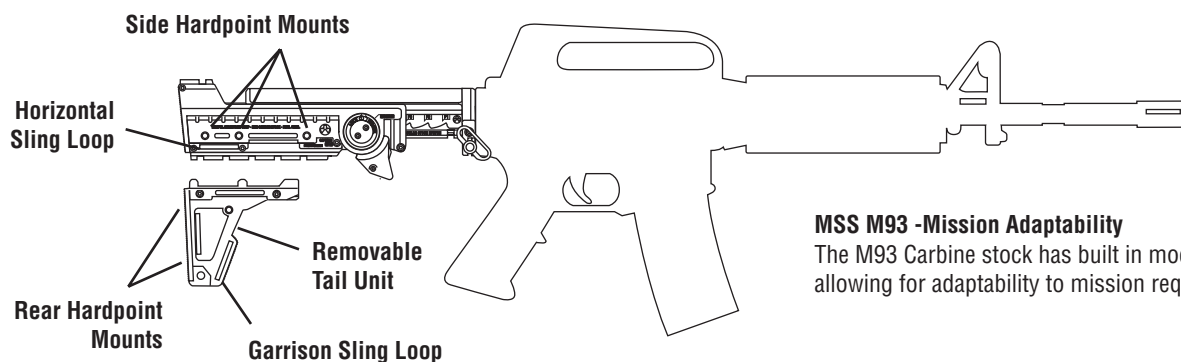
Current M93 Accessories.



Note: the side hard points are a push in type that needs to be primed. To do this remove the body from the buffer tube and screw in the bolt all the way, you should see a little star like metal piece pop out the other end. This piece expands the hardpoints so they are permanently fixed.

M93 Carbine Stock Configurations

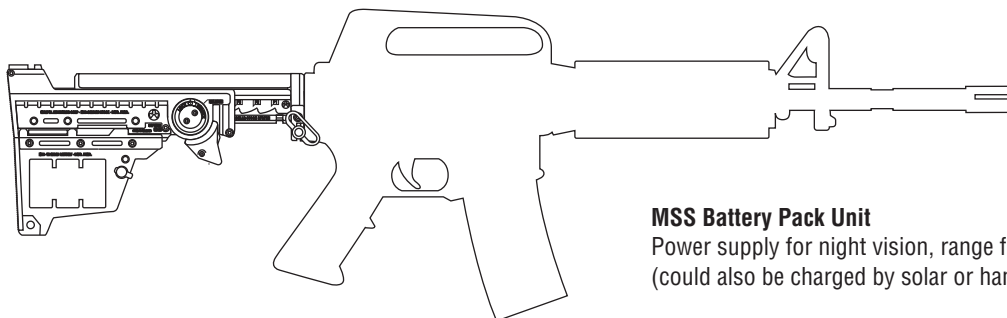
MSS M93 MODULAR COMPONENTS



MSS M93 -Mission Adaptability

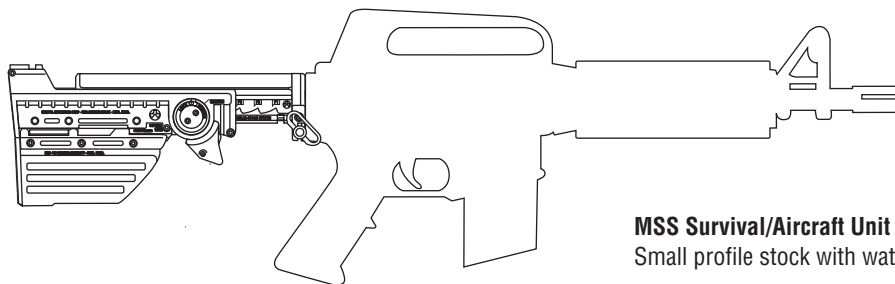
The M93 Carbine stock has built in modular capability allowing for adaptability to mission requirements.

EXAMPLES OF CUSTOM M93 TAIL UNITS



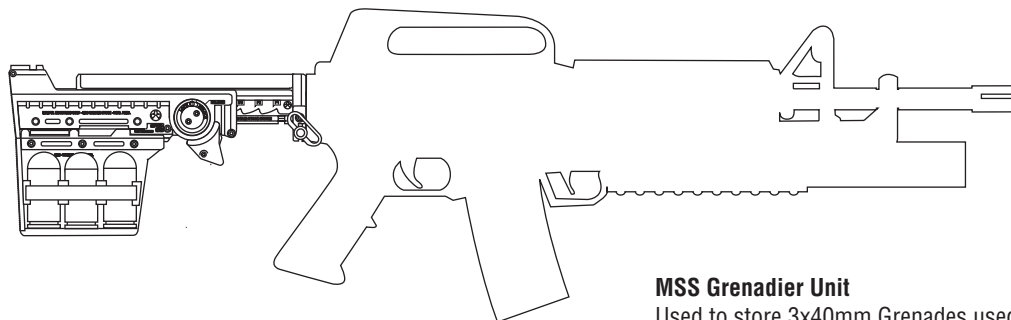
MSS Battery Pack Unit

Power supply for night vision, range finders etc (could also be charged by solar or hand crank)



MSS Survival/Aircraft Unit

Small profile stock with watertight storage.

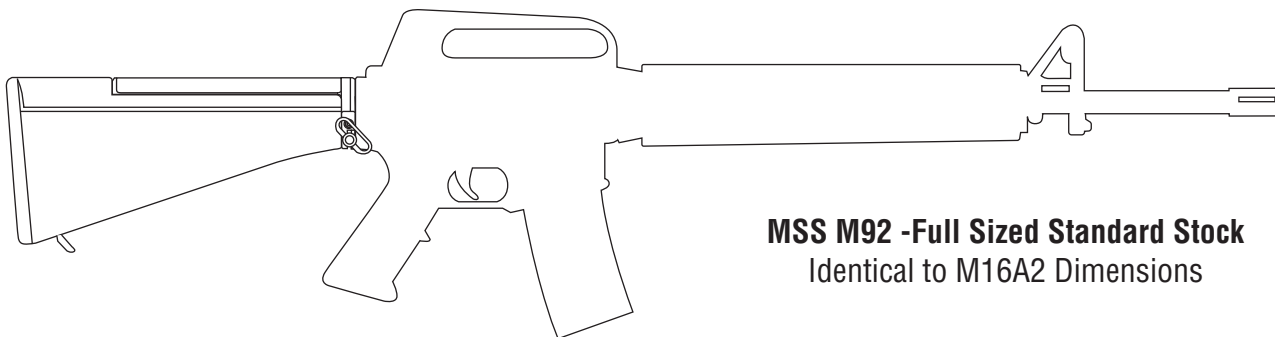


MSS Grenadier Unit

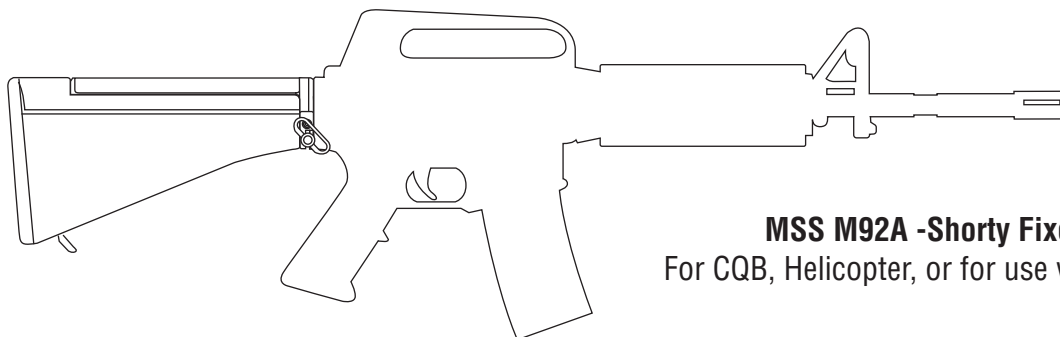
Used to store 3x40mm Grenades used in the M203

Fixed Stock Configurations

FIXED POSITION STOCKS

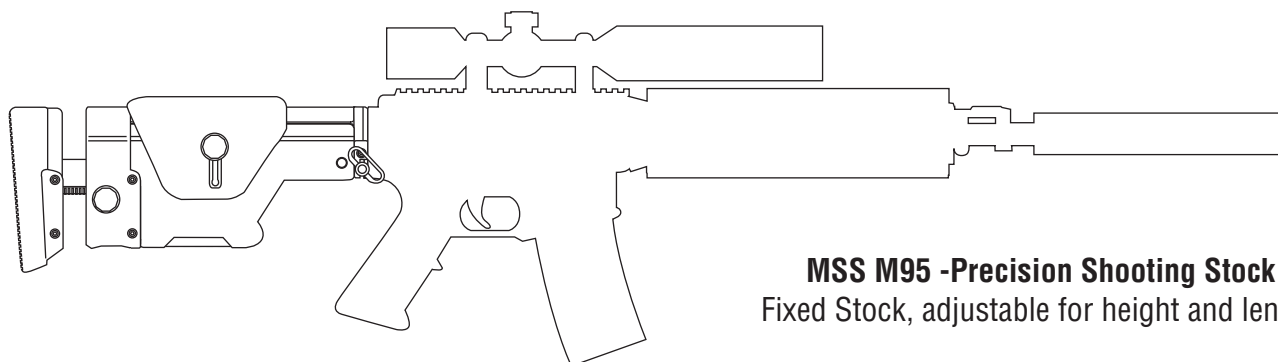


MSS M92 -Full Sized Standard Stock
Identical to M16A2 Dimensions



MSS M92A -Shorty Fixed Stock
For CQB, Helicopter, or for use with Body Armor

SPECIFIC MISSION STOCKS

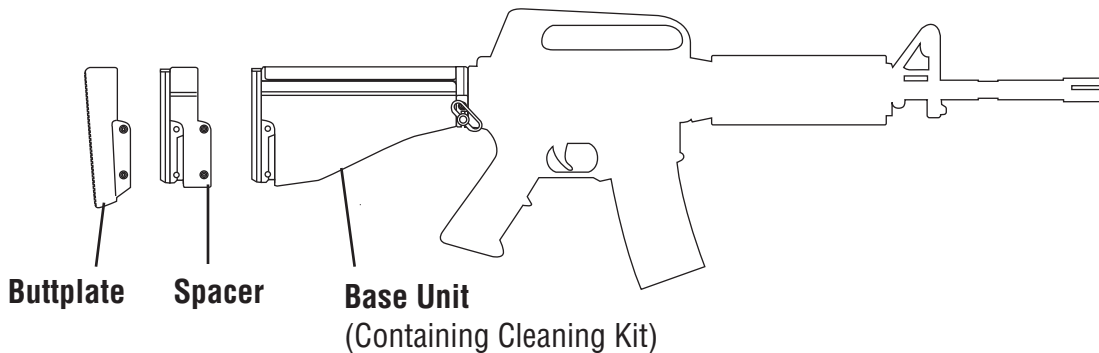


MSS M95 -Precision Shooting Stock
Fixed Stock, adjustable for height and length

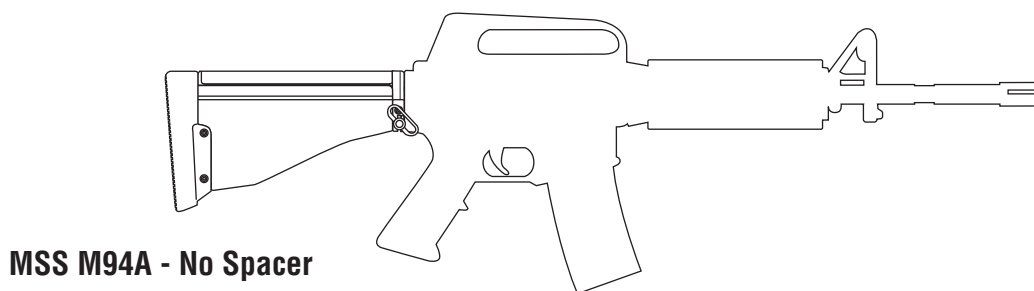
M94 Custom Fixed Stock

This design is a fixed stock that is user configurable to multiple lengths depending on users size, body armor, or mission. Components slide together and are locked in place by two bolts.

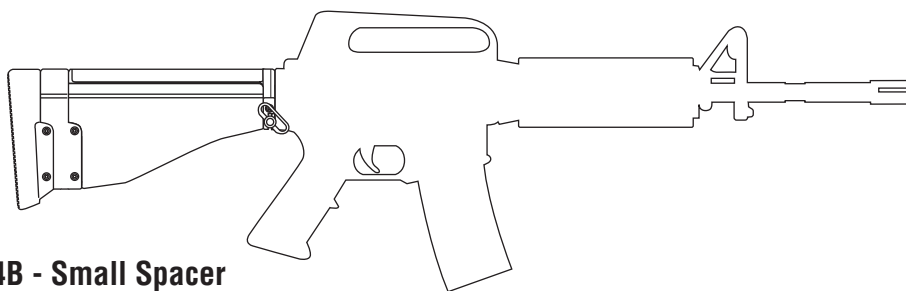
MSS M94 -Components



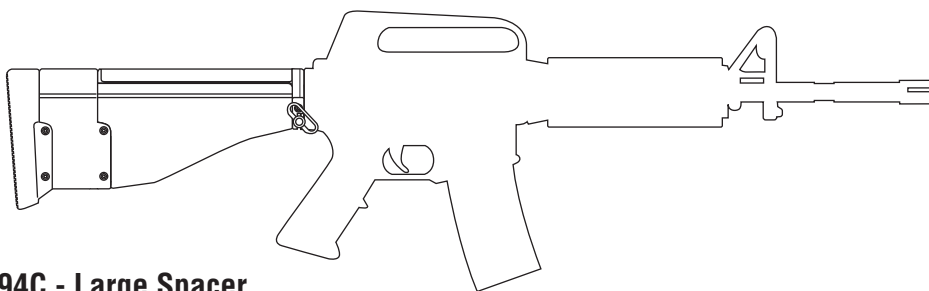
MSS M94 -Configurations



MSS M94A - No Spacer



MSS M94B - Small Spacer



MSS M94C - Large Spacer

Introduction to the Modular Stock System

Summary of Features

- An individual operator (without an armorer) can change the stock configuration.
- Weapon stocks can be changed easily for different types of missions.
- Consistent cheek weld from fixed position stocks to collapsible stocks.
- Consistent cheek weld when using the collapsible stock at different lengths.
- M93 Carbine stock offers easy to use lock and release feature.
- When the carbines stock is locked in position it is immobile and friction locked to the buffer tube as a single solid unit.
- M93 Carbine stock offers 8 positions and 7 presets. (LOP adjustable 10 - 14 inches)
- Weight of M93 Carbine stock with buffer unit and mounting hardware approx 15 ounces
- In its unlocked state, the M93 carbine stock can be ratcheted back to the preset or any position forward of the preset. Note: Even in the unlocked state the stock will NOT travel forward, thus ensuring the capability for using the weapon in the unlocked state.
- M93 Carbine Stock offers mounting rails that allow a wide variety of equipment to be configured as part of the stock.
- M94 Configurable Fixed Stock can be modified for different LOPs as Mission requires.
- New innovations such as power supply battery stocks or “Adjustable Marksman Stocks” can be quickly implemented and configured.

Release Dates

M93 Carbine Stock - Currently in Production

M92 Fixed Stocks - Early Mid 2003

M94 Custom Fixed Stock - Mid-Late 2003

M95 Precision Shooting Stock - Mid-Late 2003

- All production times are approximate.
- Release dates and features are subject to change.
- Patented. Copyright 2000-2002 All Rights Reserved