READ THE INSTRUCTIONS AND WARNINGS IN THIS MANUAL CAREFULLY BEFORE USING THIS FIREARM.

LWRC INTERNATIONAL

# M6 CARBINE

# OPERATOR'S MANUAL

## TABLE OF CONTENTS

# 1.0 SAFETY INFORMATION AND PROCEDURES

## READ AND UNDERSTAND THIS MANUAL COMPLETELY PRIOR TO OPERATING THE M6 CARBINE

**CAUTION: THE M6 IS A FIREARM. IF CARELESSLY OR IMPROPERLY HANDLED, NEGLIGENT DISCHARGES COULD OCCUR, POTENTIALLY CAUSING INJURY, DEATH OR DAMAGE TO PROPERTY.**

**NOTICE:** LWRC International LLC shall not be responsible for injury, death or damage from either intentional or negligent discharge of this firearm, or from its function when used for purposes or when employed in a manner other than designed.

**IMPORTANT:** Careless or improper handling, unauthorized adjustment or parts replacement, neglect, poor storage and the use of wrong caliber or any ammunition other than recommended (ref. 1.1.3) will prejudice any warranties extended by LWRC International on this Firearm.

### THE FOUR FIREARMS SAFETY RULES

1. Treat every weapon as if it were loaded at all times.
2. Never point your weapon at anything you do not intend to shoot.
3. Keep your trigger finger straight and off the trigger until you intend to fire.
4. Keep your mechanical safety on until you intend to shoot.

### 1.1 GENERAL SAFETY PROCEDURES

**1.1.1** Whenever handling any weapon, always point the muzzle in a safe direction as soon as you pick it up, then CLEAR the weapon. See 3.3.1 to 3.3.5 for how to do so. Ensure the chamber is clear visually by looking in though the Ejection Port.

1.1.2 When handing your weapon to another person, clear the weapon before handing it over with the Bolt Carrier locked back to the rear using the Bolt Catch. When receiving a weapon from another person, insist that they clear it and lock the bolt Carrier to rear before receiving the weapon. Then check the chamber visually to ensure that the weapon is clear when you accept the weapon.

1.1.3 Always ensure that you are firing the correct caliber ammunition through your weapon. To ensure proper function and safety, LWRCI recommends using only factory loaded ammunition that complies with the Sporting Arms and Ammunition Manufacturer's Institute (SAAMI), Commission Internationale Permanente pour l'Epreuve des Armes à Feu Portatives (CIP), NATO or ammunition loaded to US military specifications for the weapon. LWRCI does not guarantee your weapon's safety or performance when utilizing re-loaded, hand loaded or surplus ammunition.



**1.1.4** Check your weapon's bore to ensure it is free from any obstructions before firing. In the event that the weapon is dropped or the muzzle touches the ground, unload then ensure the bore is free of obstruction.

**1.1.5** Prior to firing, know your intended target and what lies beyond. Ensure there is an adequate backstop or open space free of persons and other unintended targets prior to shooting. Avoid shooting at water and hard objects as ricochets can occur, posing a safety hazard to property, persons in the vicinity and even the shooter.

**1.1.6** Be aware of where your muzzle is at all times and NEVER flag (point your muzzle at) any person or unintended target regardless of the status of the weapon. When not being carried on the range, the weapon should be placed in a Range Safe condition with magazine removed, muzzle facing downrange, ejection port facing up, Bolt Carrier locked open to the rear and with the selector on safe. No weapon should be handled regardless of status with persons down range. Observe all rules for the range that you are using.

**1.1.7** Weapons should be stored unloaded in a locked case or other secure area (e.g. armory).

**1.1.8** Always use eye and ear protection when shooting any firearm.

**1.1.9** Familiarize yourself with the weapon, its controls, features and operating procedures prior to shooting.

### 1.2 WEAPON CONDITIONS

**CONDITION 4:** Bolt forward on an empty chamber. Ejection Port Cover closed, no Magazine inserted, hammer down and Safety on **FIRE.** (will not engage **SAFE**)

**CONDITION 3:** Bolt forward on an empty chamber. Ejection Port Cover closed, Magazine inserted, hammer down and Safety on **FIRE.** (will not engage **SAFE**)

**CONDITION 2:** Not applicable

**CONDITION 1:** Bolt forward with round chambered. Ejection Port Cover closed, Magazine inserted, hammer cocked and Safety on **SAFE**.

**RANGE SAFE:** Bolt locked to rear, Ejection Port Cover open, no Magazine inserted and Selector on **SAFE.**

# 2.0 GENERAL DESCRIPTION



The LWRC International M6 series are gas-piston operated, rotary bolt, magazine fed, air-cooled, self-loading rifles chambered in 5.56x45mm NATO and 6.8x43mm SPC based on the Stoner AR-15 architecture.

LWRCI M6 are available in a wide variety of configurations to meet a variety of needs and requirements. Following are some of the more common ones:

**M6SL**
Lightweight mid-length barrel and polymer handguards for a very light and handy carbine.

**M6A1**
A-frame front sight with quad rail handguards.

**M6A2**
Low profile gas block with mid-length quad rail.

**M6A3**
4-position gas block mid-length action, mid-length quad rail.

**M6-SPR**
Low profile gas block & SPR configurable rail system.

These are representative images. Specific configurations will vary.

## 2.1 TECHNICAL DATA

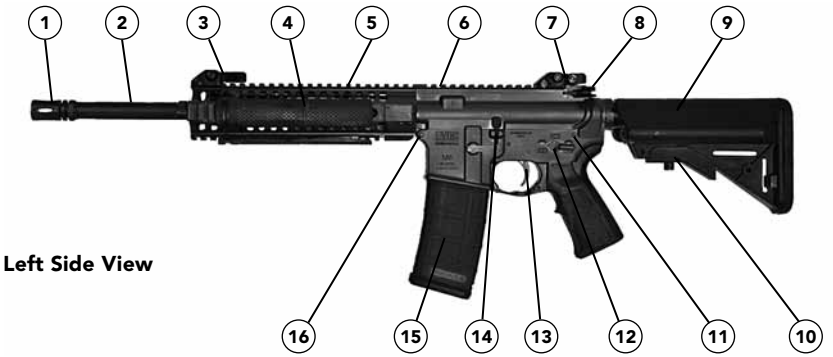
M6A2 w. 16" bbl

| | |
|---|---|
| **Caliber** | 5.56x45mm NATO (.223 Rem.) |
| **Weight** *(unloaded w/o accessories)* | 7.6 lbs |
| **Barrel Length** | 16 inches |
| **Length** *(stock collapsed/extended)* | 33.5 inches – 36.5 inches |
| **Rifling** | 6-groove, 1-in-7 RH twist Polygonal |
| **Magazine Capacity** | 30 or as approved by State law |
| **Trigger Pull** | 5.5-7.5 lbs |
| **Sustained Rate of Fire (SROF)** | 70 RPM |
| **Max Effective Range** | 500m (Point Target) |

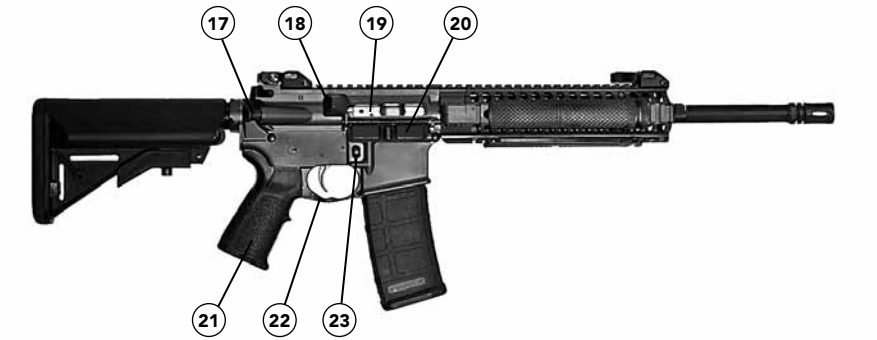


## 2.2 WEAPON NOMENCLATURE

### 2.2.1 M6A2, M6-G, M6-PSD




**Left Side View**




**Right Side View**

1. Flash Hider
2. Barrel
3. Front Sight
4. Rail Cover
5. Top Rail
6. Receiver Rail
7. Rear Sight
8. Charging Handle
9. Stock
10. Stock Catch
11. Rear Take Down Pin
12. Selector Lever
13. Trigger
14. Bolt Catch
15. Magazine
16. Front Pivot Pin
17. Forward Assist
18. Case Deflector
19. Bolt Carrier
20. Ejection Port Cover
21. Grip
22. Trigger Guard
23. Magazine Catch


**2.2.2 M6 & M6SL**

24. Fixed Rear Sight
25. Delta Ring
26. Upper Handguard
27. Front Sight Base
28. Lower Handguard

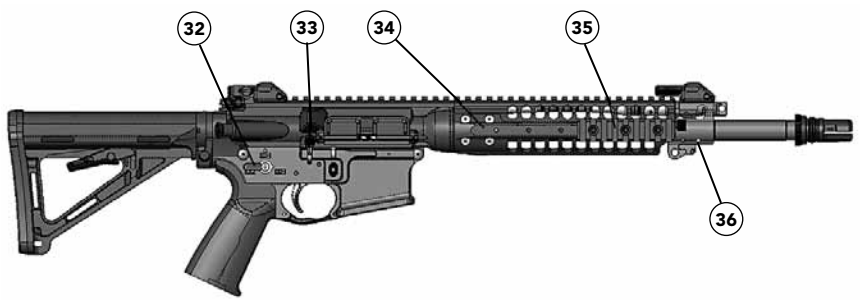

**2.2.3 M6A3**

29. 4-position gas regulator
30. Folding Front Sight


**2.2.4 M6-SPRA5**

31. 2-position gas regulator






**2.2.5 M6-IC**

**Right Side View**


**Left Side View**

32. Ambi Selector
33. Ambi Bolt Catch
34. Configurable Rail
35. Picatinny rail segment
36. 2-position Gas Regulator
37. Ambi Magazine Catch

**Fig. 2A M6A2 Disassembled**

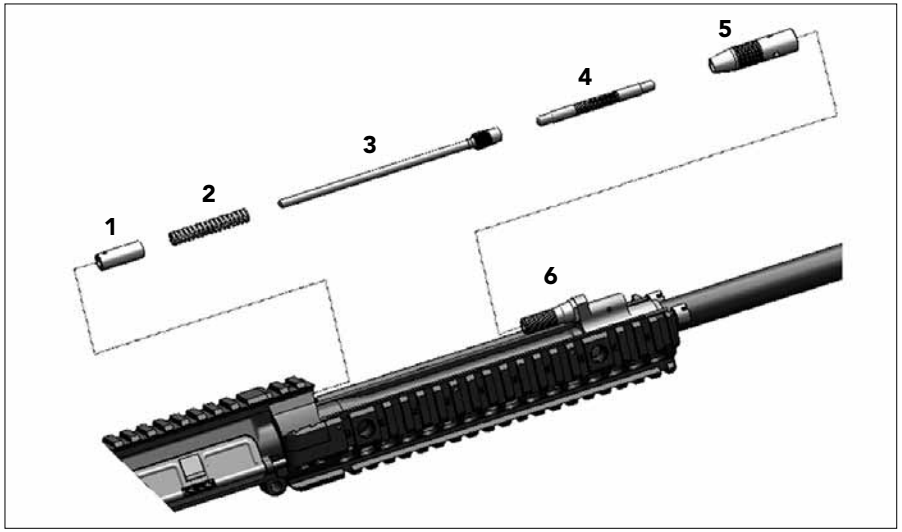



**Fig. 2B M6A2 Piston Disassembled**

1. Piston Spring Cup
2. Piston Spring
3. Operating Rod
4. Intermediate Rod
5. Piston Cup
6. Nozzle



## 2.3 OPERATING CONTROLS

### 2.3.1 SELECTOR LEVER (12.) & AMBI SELECTOR (32.)

Located on the left side of the lower receiver (12.) or both sides (32.), the selector lever functions as the manual safety of the M6 and the fire control selector. The receiver is marked with pictograms of all three modes:

| | | |
|---|---|---|
| **SAFE** |  | Prevents trigger from releasing the hammer. |
| **SEMI-AUTOMATIC** |  | Allows one shot per pull of the trigger. |
| **AUTOMATIC** |  | Rifle will shoot and load multiple shots until the trigger is released or ammunition runs out. |

ALL LWRCI rifles are marked with the AUTOMATIC setting, however it is only functional in a select-fire weapon (Military and Law Enforcement Only). The AUTOMATIC setting cannot be engaged in a semi-automatic weapon.
*SAFE can only be engaged when the hammer is cocked by operating the charging handle (8.)*

### 2.3.2 TRIGGER (13.)

The Trigger is used to fire the weapon. It is enclosed by the Trigger Guard (22.). M6s generally come equipped with the LWRCI Enhanced Fire Control Group (EFCG), a single stage trigger with pull weight of 5.5-6.5 lbs. DMR models come with a non adjustable 2-stage trigger.

**CAUTION:** LWRCI only advocates the use of the fire control group supplied with your weapon. They have been thoroughly tested through drop testing, and environmental testing to ensure safe use in the field. There are aftermarket single-stage match triggers that in our opinion are unsafe for use on an operational firearm.

**CAUTION:** Installation of aftermarket accessories that extend into the trigger guard area of the weapon is discouraged and could result in a negligent discharge.

### 2.3.3 CHARGING HANDLE (8.)

On the M6, the Charging Handle is located at the top rear of the Upper Receiver per AR-15 pattern. It is non-reciprocating. Depressing the latch on the left side of the T-shaped handle will unlock the Charging Handle and allow it to be drawn to the rear. Always use a neat, sharp tug directly back to avoid binding and to ensure positive function.

**NOTE:** Always allow the charging handle to go forward under spring tension. Holding onto the Charging handle is called 'riding' and will impede the consistent feeding process, resulting in stoppages. Avoid this.

The contemporary method is to use the support side hand to manipulate the charging

handle while the strong hand retains control of the grip and firearm. The use of the strong hand to charge 'rabbit ears' (with index and middle finger manipulating) is discouraged.

### 2.3.4 BOLT CATCH/RELEASE (14.) & AMBI BOLT CATCH (33.)

The M6 bolt catch is identical to that of the AR15 and is located on the LHS of the lower receiver. Depressing the lower section of the bolt catch below the pivot while drawing back on the Charging Handle (8.) will allow the bolt to lock back with the action open.

Ambi Bolt Catch functions identically on both sides. It allows the bolt to be released by depressing the paddle or to lock the bolt back by depressing the lower tab.

**CAUTION:** Releasing the Bolt Catch while a loaded magazine is inserted will load the weapon.

### 2.3.5 MAGAZINE CATCH (23.) & AMBI MAGAZINE CATCH (37.)

The magazine catch of an M6 is used to lock and release the Magazine(15.) during operation. The magazine catch will automatically lock a properly seated magazine in place. Usually an audible click can be heard but a tug on the magazine will verify it is locked in place. The magazine is released by depressing the magazine catch with the trigger finger. Magazine may or may not drop free. A tug on the magazine while depressing the catch will ensure removal.

**CAUTION:** Removing the Magazine does not ensure that the weapon is clear. Chamber should be cleared by racking the Charging Handle(8.) repeatedly and then locking the action open using the Bolt Catch(14.). Visually inspect to ensure there is no cartridge in the chamber.

### 2.3.6 FORWARD ASSIST (17.)

The forward assist is used to ensure that a cartridge is fully seated in the chamber. This is achieved by tapping on the round forward assist button. One or two firm but not excessively heavy taps with the palm of the hand is recommended. Do not force a round into the chamber. This can be dangerous as it could cause pressure or bullet setback issues.

### 2.3.7 EJECTION PORT COVER (20.)

The Ejection Port Cover is used to keep debris and foreign matter from entering the upper receiver through the ejection port when the weapon is not in use.

It opens automatically when the weapon is cycled by hand or firing. A spring keeps it open. The Ejection Port Cover should always be closed when the weapon is no longer firing, even when it is loaded. To close it, simply push the Cover up until the ball detent engages into the Upper Receiver. This will hold it in a closed position until the Bolt Carrier is cycled.



### 2.3.8 STOCK RELEASE LEVER (10.)

To adjust the length of the Stock on the Receiver Extension, you depress the back of the Stock Release Lever and hold it down while adjusting to the desired position. Once there, release the lever and rock the Stock forward and back until you hear a click and feel the Stock lock in place.

### 2.3.9 SOPMOD STOCK (9.)

On the SOPMOD Gen II stock, there are two Battery Holder Tubes that will accept batteries up to CR123A diameter. They can be removed from the Stock and are located at the bottom of the cheekpieces. The Tubes themselves have water proof plugs.

### 2.3.10 4-POSITION GAS REGULATOR (29.) - M6A3 ONLY

The M6A3 is equipped with a 4-position gas regulator. There are 4-detent positions, for Closed, Suppressed, Normal and Adverse. See Fig. 2A for the detent position indicator (marked A). The mark should be center line on the desired setting.

| | | |
|---|---|---|
| **C** | **Closed** | Weapon does not cycle. No mechanical noise. |
| **S** | **Suppressed** | Reduces cyclic rate with a suppressor. |
| **N** | **Normal** | For normal use. |
| **A** | **Adverse** | For extreme low temperatures or heavily fouled weapons. |

**NOTE:** Extended operation in Closed mode is not recommended as it can result in regulator clogging with copper deposits. Shoot in Normal to 'clear' the regulator every 10 rounds.

### 2.3.11 FOLDING FRONT SIGHT (30.) - M6A3 ONLY

The M6A3 is equipped with a folding front sight that is integral to the gas-block. It is deployed/folded by depressing the catch (B in Fig.2A)

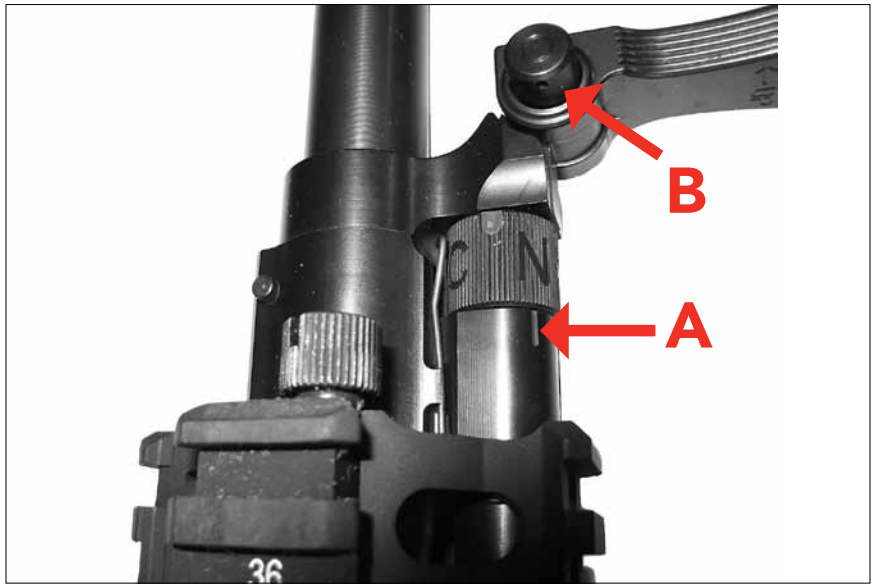



*Fig. 2A - M6A3 gas block showing regulator set to N-Normal* **(A).** *Front sight catch* **(B)** *is depressed to release the front sight when locked up or down.*

### 2.3.12 2-POSITION GAS REGULATOR (31. & 36.) - A5 & IC variants only

M6 A5 & IC variants have a 2-position gas regulator. The regulator knob has a tab with a hole. A bullet tip or other handy tool can be used to rotate knob if it is hot. The hole is horizontal in Normal setting and vertical when set to-Suppressed. This is marked with the letter S and UP. (See Fig. 2B &2C)

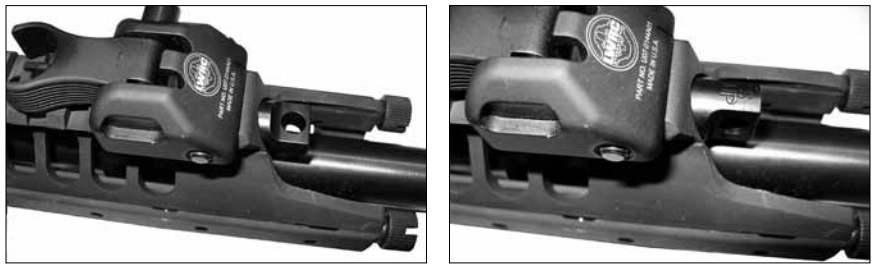


*Fig. 2B (left) shows the regulator in Normal. Fig. 2C (right) shows the regulator set to Suppressed. Note the S and UP lettering. Also note the position of the hole in the tab. This should be kept clear when in operation.*



# 3.0 PRE-OPERATING PROCEDURES

# READ THIS MANUAL COMPLETELY PRIOR TO OPERATING YOUR WEAPON

## 3.1 CLEARING YOUR WEAPON - UNLOADING

**3.1.1** Ensure the muzzle is pointing in a safe direction at all times and during the entire course of unloading the weapon.

**3.1.2** Remove the Magazine (if present) by depressing the Magazine Catch and either allowing it to drop free or pulling it out. Control the Magazine whenever possible.

**3.1.3** Depress and hold the base of the Bolt Catch with support hand.

**3.1.4** Grasp Charging Handle with strong hand, depress locking catch and pull firmly all the way to the rear while executing 3.3.3. Push the Charging Handle forward and back into battery, ensuring that the catch locks.

**3.1.5** Roll the weapon counter clockwise until you have a clear view of the bolt and chamber through the ejection port. Verify visually that the chamber is clear and that the bolt is to the rear. In low light conditions, perform a tactile check.

**CAUTION:** Do not depend on the fact that no round was ejected on clearing. There could still be a live round the chamber due to a failure extract, either due to a faulty extractor or if the case rim was ripped through by the extractor. VISUALLY AND PHYSICALLY inspect the chamber to ensure it is clear.

## 3.2 PRE-FIRE FUNCTION TEST

The User should always complete a pre-fire function test of the action and fire control group before using the weapon and any time the weapon has been disassembled and reassembled.

## 3.3 SEMI-AUTOMATIC MODE

**3.3.1** Ensure weapon is CLEAR (see 3.3) and in Condition 4 prior to performing a function test.

**3.3.2** Insert EMPTY magazine fully into the Magazine Well and tug downward. The Magazine should remain locked into the Magazine Well.

**3.3.3** Grasp Charging Handle and pull it firmly to the rear, The bolt carrier should lock to the rear. The charging handle should not return forward of its own accord. Push the Charging Handle all the way forward until it locks into place.

**3.3.4** Depress the Magazine Catch. Magazine should be released and may drop free. If not, simply pull it out. Bolt remains locked to the rear.

**3.3.5** Depress the paddle on the upper portion of the Bolt Catch. The bolt should spring fully forward and lock into battery.

**3.3.6** With the Selector on "Safe", depress the Trigger. The hammer should not fall.



**3.3.7** Rotate the Selector to "SEMI" and depress the Trigger. The hammer should drop.

**3.3.8** Charge weapon by grasping Charging Handle, pulling it firmly to the rear then releasing it. Depress and hold Trigger, Hammer should drop.

**3.3.9** Continue holding down the Trigger while charging the weapon again. Release the Trigger as slowly as possible and you should hear a click as the disconnector engages. The Hammer should remain cocked.

## 3.4 AUTOMATIC MODE (Law Enforcement & Military only)

**3.4.1** Set the Selector Lever to "AUTO". Depress and hold the Trigger. Hammer should fall.

**3.4.2** Continuing to depress the Trigger, charge the weapon repeatedly (at least 3 times). The bolt should go forward and the hammer should fall each time. Release the Trigger.

**3.4.3** This concludes the function check. Make weapon condition 4.

## 3.5 PRE-FIRE INSPECTION (PFI)

Perform the following inspection prior to each firing session. Start your PFI with the weapon in Condition 4.

**3.5.1** Break the weapon down 'shotgun style' by pulling out the Take Down Pin (11.) and then pivoting the Lower Receiver down and apart from the Upper Receiver.

**3.5.2** Remove the Bolt Carrier by pulling the Charging Handle back most of the way and grasping the rear of the Bolt Carrier. Charging Handle is NOT captive.

**3.5.3** Inspect the Bolt and Carrier, ensuring the following;- The Bolt Cam Pin is properly installed with the arrow (if present) facing forward. Ensure that the Firing Pin Retainer is fully seated in its hole. Ensure that the firing pin hole is not obstructed and that the Firing Pin is properly installed. Tap the bottom of the Bolt Carrier firmly against the palm of your hand. The Firing Pin should stay in place.

**CAUTION:** Failure to properly install the Bolt Cam Pin can result in the weapon firing unlocked , which can result in serious injury or death.

**3.5.4** Visually inspect the bore of the weapon to ensure it is unobstructed. In low light conditions, physically inspect the bore by passing a cleaning rod through it.

**3.5.5** Reassemble the weapon by inserting the Bolt Carrier Group into the Upper Receiver, pivoting the Lower Receiver back up and pressing in the Rear Take Down Pin.

**3.5.6** M6A3 & A5 - Ensure that the Gas Regulator is in the appropriate detent position as dictated by use.

**3.5.7** Inspect Magazines for the following;-

Ensure magazines are clean and not dented or cracked. Pay special attention to the feed lips. Ensure the Magazine Follower moves freely within the magazine body and returns under its own spring tension without binding. Do NOT oil or otherwise lubricate magazines. Only use Magazines recommended by LWRCI.

**3.5.8** Inspect ammunition before firing. Ensure ammunition is factory manufactured in compliance with SAAMI, CIP and/or U.S. Milspec/STANAG specifications. Ensure ammunition is the correct caliber for the weapon. Do not oil or otherwise lubricate ammunition.

**3.5.9** Place Weapon in Condition 4 or Range Safe status.



# 4.0
# OPERATION

## 4.1 CHOICE OF AMMUNITION

**CAUTION:** Always ensure that you are firing the correct caliber ammunition through your weapon. To ensure proper function and safety, LWRCI recommends using only factory loaded ammunition that complies with the Sporting Arms and Ammunition Manufacturer's Institute(SAAMI), Commission Internationale Permanente pour l'Epreuve des Armes à Feu Portatives (CIP), NATO or ammunition loaded to US military specifications for the weapon. LWRCI does not guarantee your weapon's safety orperformance when utilizing re-loaded, hand loaded, seconds or surplus ammunition.

LWRCI does not recommend the use of steel-cased ammunition. Users who do should be aware of case lacquer and primer sealant deposits that may accumulate and degrade reliability.

Subsonic ammunition will NOT cycle 5.56x45mm NATO M6 carbines, even when operated with a suppressor.

### 4.1.1 5.56x45mm NATO

The M6 is designed to cycle with a broad spectrum of 5.56x45mm NATO and .223 Rem ammunition, the 1-in-7 inch rate of rifling will generally give the best results with heavier bullets like the 69-77gr Match offerings.

The M6 is designed around the M855 "Green Tip" as this is the standard US military load. The factory recommends the use of this load as well as Mk318 SOST, Mk262 Mod 1 OTM and M193 FMJ. It should be noted that to realize the full accuracy potential of the M6, the use of Match quality ammunition with heavier bullets is desirable. M855 is a 4MOA acceptance ammunition.

**NOTE:** 5.56/.223 ammunition with projectiles of less than 50 grains are NOT recommended for use in M6 carbines.

### 4.1.2 6.8x43mm SPC

Only use ammunition in this caliber that is loaded to SAAMI specifications.

## 4.2 CHOICE OF MAGAZINES

Only use magazines appropriate to the caliber.

### 4.2.1 5.56x45mm

The M6 is designed to use AR-15/M-16 pattern magazines. Due to the vast diversity of suppliers in the current marketplace, LWRCI recommends either the supplied Magpul PMag30 or USGI aluminum magazines. Other makes should be tested for function before operational use.



## 4.3 LOADING A MAGAZINE

**4.3.1** Grasp the Magazine firmly with your support hand.

**4.3.2** Push the round under magazine feed lips. The base of the cartridge should be all the way back against the back of the magazine.

**4.3.3** Repeat until magazine is filled. DO NOT overfill the magazine. Down loading the magazine by 2 rounds will usually allow for easier seating with the bolt forward.

## 4.4 LOADING A WEAPON IN CONDITION 4

**4.4.1** Insert a loaded magazine firmly into the Magazine Well. Ensure it is properly seated by tugging on it.

**4.4.2** Charge the weapon by firmly pulling the Charging Handle to the rear and releasing it ("slingshot method").

**4.4.3** Rotate the Selector to "SAFE". If not firing immediately, close the Ejection Port Cover. The Weapon is now in Condition 1.

## 4.5 FIRING IN SEMI-AUTOMATIC MODE

Starting with the Weapon in Condition 1

**4.5.1** Bring Weapon to the "Ready" position.

**4.5.2** Acquire and aim at the intended Target

**4.5.3** Put Selector to "SEMI".

**4.5.4** Depress Trigger with a deliberate squeezing motion of the strong hand index finger to fire individual shots. Release finger pressure between shots but do not remove finger entirely from contact. This will avoid "slapping"which contributes to inaccuracy.

**4.5.6** Put Selector to "SAFE".

**4.5.7** Close Ejection Port Cover.

## 4.6 FIRING IN AUTOMATIC MODE (LE & Military only)

Starting with the Weapon in Condition 1

**4.6.1** Bring Weapon to the "Ready" position.

**4.6.2** Acquire and aim at the intended Target

**4.6.3** Put Selector to "AUTO".

**4.6.4** Depress Trigger with a deliberate squeezing motion of the strong hand index finger to fire bursts. Release finger pressure between bursts but do not remove

finger entirely from contact. This will avoid "slapping" which contributes to inaccuracy. 3-5 round bursts are optimal.

**4.6.6** Put Selector to "SAFE".

**4.6.7** Close Ejection Port Cover.

## 4.7 RELOADING FROM BOLT LOCK

When the Magazine is out of ammunition, the Bolt Catch is automatically engaged which will hold the Bolt Carrier open. The weapon will not fire.
To Reload:

**4.7.1** Depress the Magazine Release. If it does not drop free, pull the Magazine out and let it drop to the ground.

**4.7.2** Retrieve a loaded Magazine with your support hand.

**4.7.3** Insert loaded Magazine into Magazine Well. Ensure the Magazine is properly seated by tugging on it.

**4.7.4** Depress Bolt Catch, letting the Bolt Carrier go forward into battery and chambering a round. Weapon is now in Condition 0, chamber loaded, safety off and ready to fire.

**4.7.5** Upon completion of firing, set Selector to "SAFE".

**4.7.6** Close Ejection Port Cover.



## 4.8 SKIRMISH FOLDING IRON SIGHTS

The Skirmish sights are M1913 Picatinny rail mounted flip-up iron sights designed for use on LWRCI and all standard AR height receivers.

They will work correctly with other iron sights set for this height, e.g. the 'F' marked Front Sight Base on a M4 carbine etc.

**NOTE:** They WILL not work when combined with other iron sights set to differing heights.

**They should ideally be employed as matching pairs when possible.**

### 4.8.1 Skirmish Front Sight

#### 4.8.1.1 Deployment

The Front Sight is not locked in place when folded down. This is to allow for rapid deployment. Grasp sight tower and flip it up.

#### 4.8.1.2 Folding

Once it is deployed, the Front Sight tower is locked in the UP position by a locking detent. To fold it back down, depress the detent button as indicated by the arrow, then fold.

#### 4.8.1.3 Adjustment

Elevation changes to Point of Impact are made using the Front Post. This is locked in place by a detent that has to be depressed before the post can be rotated to rise or fall. This can be done with a tool like a LWRCI Sight Tool or a bullet tip.

The Sight Post is rotated Clockwise to raise the Point of Impact and counter-clockwise to lower it. Each 'click' between detents is 0.5MOA (0.5 inch @ 100 yards) on weapons with M4 length sight radii.

Using the sight tool to do the adjustment requires the teeth to align into the recesses of the Front Post then depressing to release the detent. Rotate by 1/4 turns and feel the click.



## 4.9 Operating Cycle

The following describes the operating cycle of the M6 series.

| | |
|---|---|
| **Firing** | When the Trigger is depressed, the sear is disengaged from the Hammer, allowing the Hammer to be driven by the Hammer Spring to strike the Firing Pin. The Firing Pin strikes the cartridge primer and this ignites the chambered round. |
| **Unlocking** | Propellant gasses are tapped off at the gas port and travel through the gas block to the nozzle. The piston cup pressurizes and is driven back away from the nozzle, in turn pushing the operating rod to strike the bolt carrier key. The resulting momentum transfer initiates the rearward movement (recoil stroke) of the Bolt Carrier Group. As it moves to the rear, the Cam Pin rotates the bolt, thus unlocking it from the barrel extension. |
| **Extraction** | As the Bolt Carrier Group continues its recoil stroke, the expended cartridge is pulled from the chamber by the extractor. |
| **Ejection** | Once the expended cartridge is clear of the chamber, it is ejected from the weapon by the spring loaded Ejector. |
| **Cocking** | **Semi-** As the Bolt Carrier recoils to the rear, it cocks the Hammer which is initially retained by the Disconnector. As the shooter disengages the Trigger, the Disconnector releases the Hammer, allowing to be captured by the Trigger. (This is known as Reset)<br><br>**Auto-** As the Bolt Carrier recoils to the rear, it cocks the Hammer which is retained by the Auto Sear. Concurrently, the rear of the Bolt Carrier will trip the Auto Sear, releasing the Hammer and firing the round. With the Trigger depressed and held, the weapon will cycle continuously through the firing sequence until either the Trigger is released or the magazine is empty. When the shooter releases the Trigger, the Hammer is caught by the Hammer/Trigger engagement surface and does not allow the weapon to fire again until the Trigger is pulled. |
| **Feeding** | The stroke concludes when the Buffer halts the Bolt Carrier Group. The Recoil Spring, compressed during the recoil stroke, drives the Bolt Carrier Group forward, commencing the counter-recoil or return stroke. As the Bolt Carrier moves forward, the next round is stripped from the top of the Magazine and directed into the chamber by the Magazine feed lips and the receiver feed ramps. |
| **Chambering** | As the Bolt Carrier Group continues the counter recoil stroke, the round is seated in the chamber. |
| **Locking** | The Bolt Carrier now completes the counter-recoil stroke, the Bolt is again rotated by the Cam Pin, locking into the Barrel Extension. The Bolt Carrier Group is now again in battery. |

# 5.0 MAINTENANCE



## 5.0 MAINTENANCE

Proper maintenance of a weapon requires not only post-fire cleaning but also the timely replacement of consumable parts to ensure full reliability and performance through its lifetime. An accurate log of rounds fired should be kept but even a rough daily count is useful to program scheduled maintenance.

This is an Operator's Manual and does not cover the replacement of parts outside of those replaceable on a Detailed Strip. Only a certified Armorer should disassemble and replace parts beyond those removed during a Field Strip.

## 5.1 DISASSEMBLY (FIELD STRIP)

**Frequency:** The weapon should be disassembled to its major groups and assemblies when conducting Routine Operator Level Maintenance (as determined by unit). For convenience, the Upper Receiver can remain connected to the Lower Receiver by the Pivot Pin (broken down "shotgun style") during Routine Operator Level Maintenance.

**Tip:** Lay your parts out from left to right in the sequence they were removed from the weapon so upon reassembly, you just work right to left. This procedure is also be useful if you have to strip and reassemble the weapon in the dark.

**The sequence is as follows:**

**5.1.1** Clear the weapon (refer to Section 3.3) and ensure the weapon is Condition 4. The Bolt Carrier must be in Battery.

**5.1.2** Pull Out the Take Down Pin by pushing from the left side of the Lower Receiver to start the pin moving, then pull out from the right. A dowel or bullet tip can be helpful to start this. The pin detent is usually quite stiff on a new rifle. This will get easier as you use and disassemble the M6. (Fig 5A.)

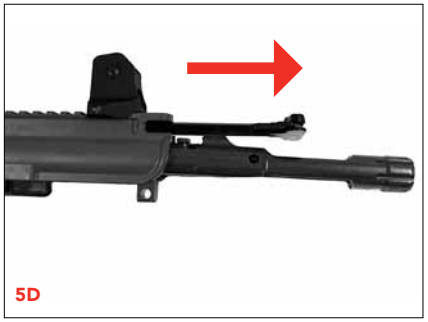

*Fig. 5A Pull Out the Rear Take Down Pin*

**5.1.3** Pivot the Lower Receiver until it is 90° to the Upper Receiver. Pull out the Pivot Pin (per 5.1.2) and disconnect the upper from the lower completely. (Fig. 5B)



*Fig. 5B (left) Pivot the Lower Receiver away from the Upper Receiver.*
*Fig. 5C(right), remove the Upper Receiver from the Lower Receiver.*

**5.1.4** Pull the Charging Handle to the rear, drawing the Bolt Carrier Back. Remove the Bolt Carrier, then ease the Charging Handle down and remove. It cannot be pulled directly as there are two tabs that will prevent this. (Fig. 5D)



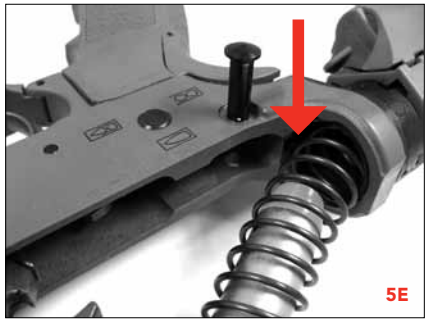




*Fig. 5D (left) Pull charging Handle out and remove Bolt Carrier.*
*Fig. 5E (Right) Depress the Buffer Detent then remove Buffer and Spring.*

**5.1.5** Remove the Buffer and Buffer/Recoil Spring by depressing the Buffer Detent then pulling the Buffer and spring from the Buffer Tube. (Fig. 5D)

**5.1.6** Detach the Buffer from the Buffer/Recoil Spring. The M6 is now Field Stripped.



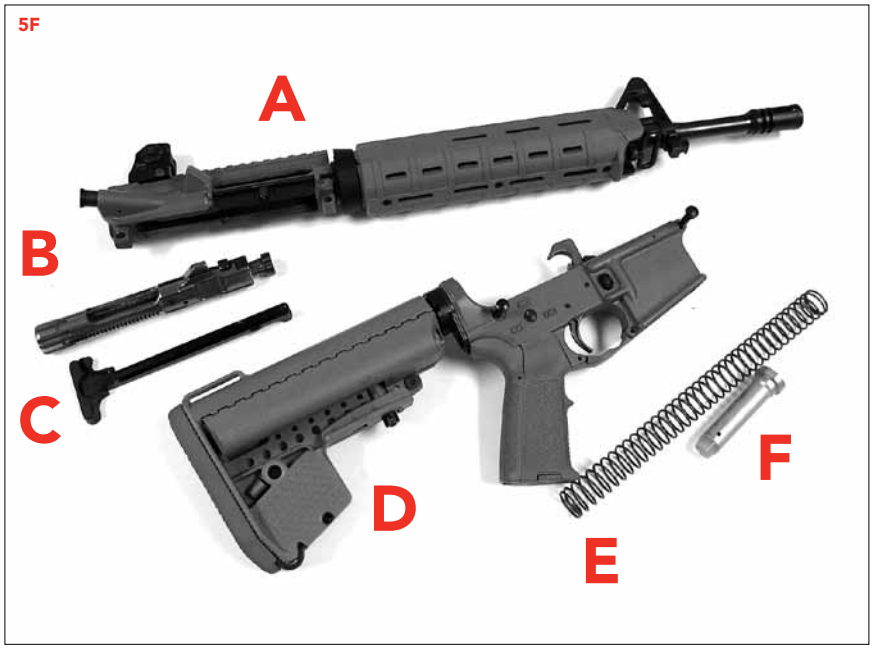



*Fig. 5F M6 Disassembled.*

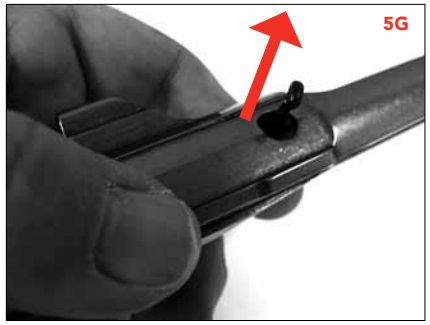
**A.** Upper Receiver
**B.** Bolt Carrier Group
**C.** Charging Handle
**D.** Lower Receiver
**E.** Buffer Spring
**F.** Buffer

## 5.2 DETAILED DISASSEMBLY

This level of disassembly is for Detailed Operator Level Maintenance of the M6. Care must be taken to ensure that small parts are not lost. The use of a cloth or tarpaulin to catch them is encouraged. Further disassembly is not required for operator authorized maintenance and should only be performed by higher echelon maintenance personnel.

**5.2.1** Clear and Field Strip the Weapon per 5.1.

**5.2.2** Bolt Carrier Disassembly


5G


5H

**5.2.2a** (Fig. 5G) Remove Firing Pin Retaining Pin from the Bolt Carrier.

**5.2.2b** (Fig. 5H) Turn the Carrier so that the bolt face is facing upwards. Tap against a firm surface to drop out the Firing Pin.

**5.2.2c** Ensure the Bolt is fully retracted into the Carrier. The Cam Pin should be rotated 90° counter-clockwise. Pull to remove Cam Pin. (Fig. 5J)


5J


5K

**5.2.2d** With the Cam Pin removed, pull forward on the Bolt Assembly and remove it from the carrier. (Fig. 5K)



### 5.2.3 Bolt Disassembly

At Operator level, no further disassembly of the bolt beyond removing the Extractor is necessary.

**5.2.3a** (Fig. 5M) Utilize the Firing Pin to push the Extractor Pin and start it out of the bolt.


5M


5N

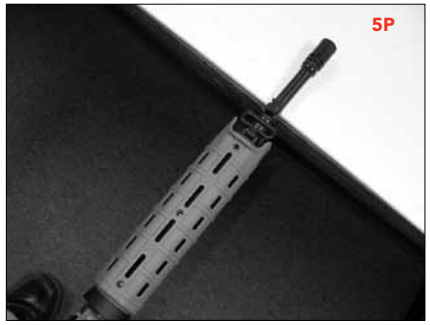
**5.2.3b** Grasp Pin from opposite side and remove it. Turn the Bolt over and tap the Extractor into your palm. Be sure to retain the Extractor spring(s) and O-ring(s). See Fig. 5N for a description of these parts.

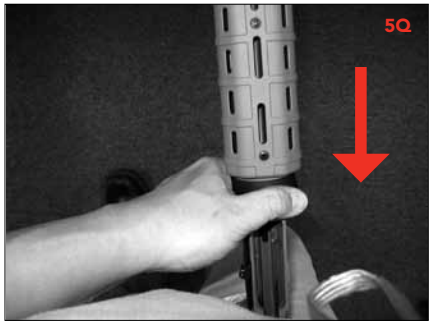
### 5.2.4 Upper Receiver Group Disassembly.

**5.2.4a M6-SL**

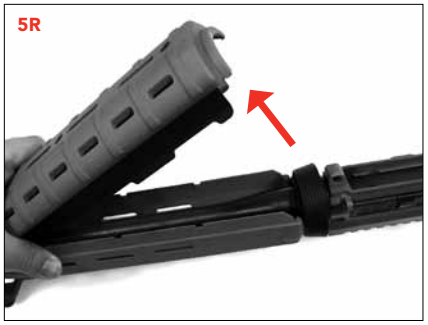
Start with the weapon in Field Strip condition.

**5.2.4a1** Rotate the upper assembly so that the Front Sight Base is facing down. Press this against the edge of a work bench or other firm surface. (Fig. 5P)


5P


5Q

**5.2.4a2** Press or tap back firmly on the Delta Ring. (Fig. 5Q)





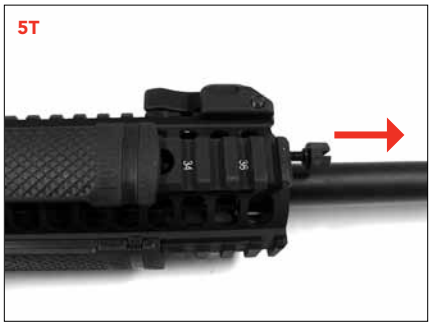
**5.2.4a3** Rotate the Lower Handguard free, pivoting on the End Cap. (Fig. 5R)

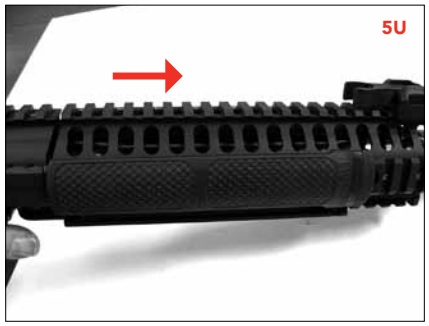
**5.2.4a4** Remove the Upper Handguard in a similar manner. (Fig. 5S)

### 5.2.4b M6A1, M6A2, M6A3 and M6-SPR

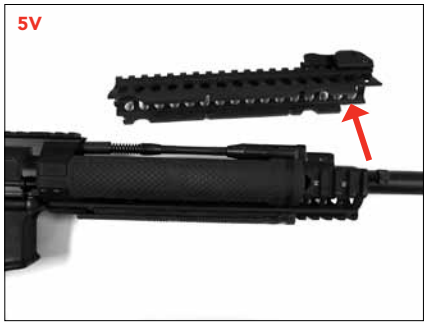
Start with the weapon in Field Strip condition.

**5.2.4b1** Loosen the two Pusher screws on the front of the rail. If they are tightened down, use a flat tip screw driver or small coin. (Fig. 5T)



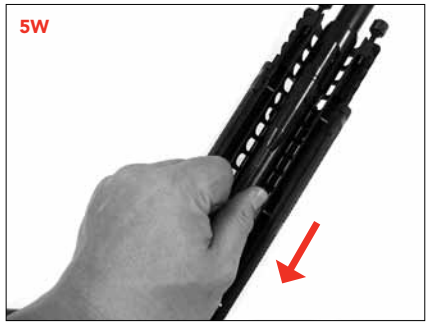

**5.2.4a2** Slide the Top Rail forward (Fig. 5U). Once you reach the end of movement, lift up and off. (Fig. 5V)

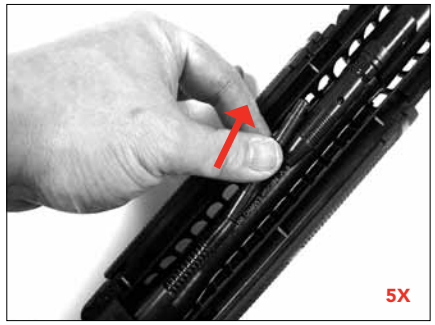





### 5.2.5 Piston Operating Group Disassembly (All M6)

**5.2.5a** To disassemble the Piston Operating Group assembly, push forward on the Piston Cup while grasping the Connecting Rod and pull firmly to the rear (Fig. 5W). Ensure you are pulling it straight back or you risk binding. The front of the Connector Rod will disengage from the Piston Cup.

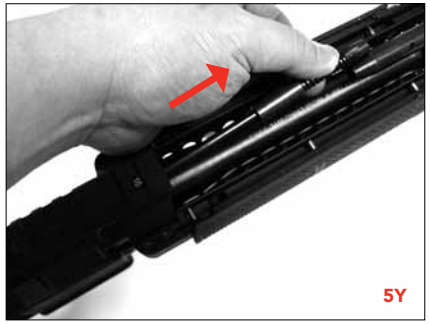


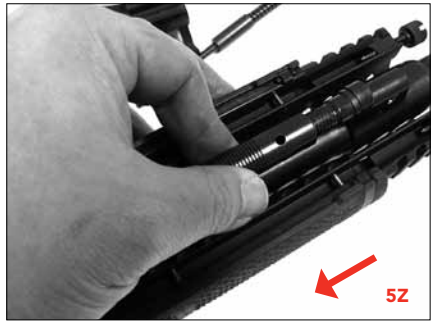




**5.2.5b** Pull the Connector Rod free from the Operating Rod assembly which is still compressed. (Fig. 5X)

**5.2.5c** Remove the Operating Rod assembly (Fig. 5Y). No further disassembly is required.

**5.2.5d** Remove the Piston Cup from the nozzle. (Fig. 5Z)



## 5.3 REASSEMBLY

Reassembly of the M6 series is achieved by reversing the order of the disassembly steps. Some items to keep in mind during reassembly:

**5.3.1** When reassembling the piston, install the Piston Cup and the Operating Rod first. Compress the Operating Rod, insert the Connector Rod to it before inserting into the Piston Cup. Rotate the Connector Rod to seat the assembly correctly.

**CAUTION!:** Always ensure that the Piston Components and the Top Rail are in place and properly installed when reassembling the Rifle. The weapon can fire without the Intermediate Rod or Operating Rod in place and could result in severe injury or even death.

**5.3.2** When reinstalling the Buffer and Buffer Spring, push the Buffer Fully past the Buffer Detent and ensure it is captured behind the detent.

**5.3.3** When reinstalling the Extractor, line up the holes by pressing firmly on the center of the Extractor while reinstalling the extractor spring.

**5.3.4** While reinstalling the Firing Pin Retaining Pin ensure the Firing Pin is fully forward and the Firing Pin Retaining Pin is installed from left to right when looking from the rear of the weapon. While Bolt is pushed rearward into Carrier, push end of Firing Pin toward front of Bolt and ensure it protrudes through the face of the Bolt.

**CAUTION!:** Always ensure that the Cam Pin is properly installed when reassembling the Bolt Carrier Group. The weapon can fire without it in place, resulting in catastrophic failure than could result in severe injury or even death.

**5.3.5** When reinstalling the Bolt Carrier Group into the Upper Receiver, ensure that the Bolt is in the fully extended position.

**5.3.6** When closing the Upper and Lower Receiver, pivot the Lower Receiver to the Upper Receiver until the contact is made. Then push the Rear Take Down Pin all the way into the Lower Receiver. It may be necessary to push the Upper and Lower Receivers together to enable this.

**NOTE:** All M6 Upper and Lower Receivers are built to military specifications. This ensures maximum compatibility with M16/M4 pattern lower receivers. Depending on tolerance stacking, this may result in a slight looseness of fit between Upper and Lower Receivers. This is normal and has no impact either on reliability or mechanical accuracy.If this cosmetic matter is an issue, simply install an Accuwedge or equivalent. Overly tight or wedged pins can cause premature elongation of receiver pin holes. IC ambidextrous lowers come with a nylon tension screw to take up any slack.



## 5.4 ROUTINE OPERATOR'S MAINTENANCE

It is advisable to perform routine maintenance after each firing session or once daily while operating in normal field conditions, conditions permitting. Ensure that the weapon is clear prior to performing any maintenance. When punching the weapon's bore, it should be done from the chamber end to the muzzle to avoid any potential damage to the muzzle.

**5.4.1** Field Strip the weapon as detailed in 5.1

**5.4.2** Clean the bore by punching first with a patch saturated in Bore Tech Eliminator, Slip 2000 Carbon Killer or approved solvent. Leave for a minute or two to soak before punching the bore with a bore brush several times. Punch with a dry patch to remove carbon residue and solvent.

**NOTE: If you observe a degradation in accuracy, clean bore with a copper solvent per manufacturer's instructions**

**5.4.3** Check for cleanliness by punching with a clean patch. If it does not come out clean, repeat 5.4.2 until it does.

**5.4.4** Wipe Bolt Carrier, Charging Handle, interior of Upper Receiver, Buffer and Buffer Spring with a cloth (slightly dampened with cleaning solvent if available)

**5.4.5** Scrub the face of the bolt with a nylon brush dipped in cleaning solvent or Cleaner, Lubricant, Protectant (CLP). Thoroughly wipe away any remaining cleaning solvent or CLP with a cloth or rag.

**5.4.6** Apply a light coat of lubrication to the interior of the Upper Receiver, Buffer Spring and Ejection Port Cover detent.

**5.4.7** Apply point lubrication to the Extractor, Bolt Cam Pin, Hammer pivot point, Trigger pivot point and Charging Handle Latch.

**NOTE: Do NOT lubricate the face of the bolt.**

**5.4.8** Reassemble the weapon and perform function checks as detailed in Sections 3.4 and 3.5.

**NOTE:** If you are using an Ultrasonic Cleaner please consult with the factory on establishing a safe cleaning frequency that will not damage the weapon.

## 5.5 DETAILED OPERATOR'S MAINTENANCE

Detail Maintenance should be performed every 2,000 rounds fired or once weekly while operating in normal field conditions. Always ensure weapon is clear prior to performing any maintenance.

**5.5.1.** Detail Disassemble the weapon as described in Section 5.2

**5.5.2** Perform Routine Maintenance as defined in the previous section.

**5.5.3** Scrub Extractor with nylon brush dipped in cleaning solvent or CLP. Pay particular attention to removing any built up deposits of brass deposits in the extractor groove. Wipe away any remaining solvent or CLP with a rag or cloth.

**5.5.4** Scrub Bolt Carrier, Bolt Body, Firing Pin and interior of Upper Receiver with nylon brush dipped in cleaning solvent or CLP. Punch firing pin hole and firing pin cavity with a pipe cleaner. Wipe away any remaining solvent or CLP thoroughly with a rag. Apply a moderate coat of lubricant to the cavity into which the Bolt is installed. Apply point lubrication to the Extractor where the Extractor Pin is installed and the Bolt Cam Pin where it is installed. Apply a light coat of lubricant to the interior of the Upper Receiver prior to reinstalling the Bolt Carrier Group.

**5.5.5** Scrub the Gas Piston Nozzle inside and out with a dry brass wire brush. Wipe away any remaining carbon residue with a rag and cleaning solvent. You may have to repeat this process if the Nozzle has been heavily fouled in a moist environment as carbon is hygroscopic and forms hard deposits.

**NOTE:** The Gas Piston Nozzle should be completely dry before reassembly. Lubrication may cause fouling when fired.

**5.5.6** Scrub the Gas Piston Cup inside and out with a dry brass wire brush. Apply a light coat of lubrication to the exterior of the piston cup and wipe off any excess lubricant or residue with a rag.

**NOTE:** As a general practice, do NOT introduce any lubricant into the inside of the piston cup as this may cause fouling when fired.

**5.5.7** If the weapon is to be stored for a longer period of time, apply a light coating of CLP on the Nozzle before reassembly. The user can wipe this off before firing. This does not affect function if the user does not remove this prior to firing, but it may cause some smoke as the lubricant is burned off during firing.



**5.5.8** Scrub the Operating Rod Assembly with a nylon brush dipped in cleaning solvent or CLP (These will not be fouled as they are not directly exposed to carbon). Thoroughly wipe away any remaining cleaning solvent or CLP with a rag. Apply a light coating of lubricant to the Operating Rod Assembly.

**5.5.9** Reassemble weapon and perform function check as detailed in Sections 3.4 and 3.5.

## 5.6 MAINTENANCE PROCEDURES FOR ADVERSE CLIMACTIC CONDITIONS

**5.6.1** When operating in adverse environments, LWRC International recommends utilizing shoot through muzzle covers and gun covers (tactical situation permitting).

**5.6.2** Pay particular attention that the Ejection Port Cover is closed at all times when not firing the weapon. If weapons must be grounded, stuff a rag or otherwise seal off the magazine well.

**5.6.3** In blowing sand and snow conditions, conduct frequent function checks of your weapon and take every opportunity to remove sand and snow from the weapon. A small brush is highly recommended for this purpose. Compressed air can be used to blow sand from the weapon if available.

**5.6.4** Do not lubricate the interior of the Upper Receiver or exterior of the Gas Piston components when operating in extremely sandy or snowy field conditions.

**5.6.5** When performing routine maintenance, remove the Top Rail and brush away any sand or snow from the piston components.

**5.6.6** Apply point lubrication as sparingly as possible.

## 5.7 SPECIAL ARCTIC ENVIRONMENT CONSIDERATIONS

**5.7.1** Keep weapons at ambient outdoor temperature whenever possible and use an arctic rated lubricant.

**5.7.2** If weapons must be brought into a warm area, allow weapons to warm up to room temperature, detail disassemble and perform Detailed Maintenance. Pay particular attention to removing all condensation from the weapon before going back into cold temperatures.

**5.7.3** Even if weapons are kept outdoors, temperatures can fluctuate above and below freezing in the weapon's moving components. Perform frequent function check to ensure weapon is operable.

**5.7.4** If weapon is dropped in the snow, clean it immediately. At minimum break down the weapon down shotgun style and remove any snow from the upper receiver and bolt carrier. Ensure the bore is clear with cleaning rod. Clean snow from the gas piston components.

**5.7.5** If your weapon does freeze shut, DO NOT FIRE IT to un-jam the weapon. Warm weapon with body heat or a camp stove (hold weapon at least eight inches above the flame with the muzzle in a safe direction and with the magazine removed prior to warming) until unjammed. Clean or fire immediately. Always keep the muzzle pointed in a safe direction.

## 5.8 LUBRICANTS AND CLEANERS

The M6 family of weapons is compatible with all standard U.S. Military and NATO specified small arms lubricants and cleaners. LWRC International recommends SLIP 2000 EWL (Extreme Weapon Lubricant) or Boretech CLP. When changing from one lubricant to another, clean off all the old lubricant by scrubbing parts with solvent, e.g. Boretech Eliminator.

**Lubrication Terms:**

**Light Coat -** A light coat of lubricant is not readily visible to the eye. Apply lubricant and wipe off excess with a clean cloth.

**Moderate Coat -** A moderate coat of lubricant should be just visible to the eye. Apply lubricant directly to part and spread or apply with a brush, cloth or finger.

**Point Lubrication -** Lubrication applied to pivot points of recessed parts. Apply a couple of drops to the pivot point and work back and forth to evenly distribute the lubricant.

## 5.9 RAIL MAINTENANCE & NOTES

The M6 series is available with a number of handguards in its various configurations.

- **MOE polymer hand guards**
- **ARM-R quad rail hand guards (free float)**
- **SPR configurable rail handguards (free float)**

**5.9.1** MOE polymer hand guards are compatible with the full range of MOE handguard accessories from Magpul Inc. and other manufacturers.

**5.9.2** ARM-R quad rails require no additional maintenance. M1913 Rail covers and ladder panels (e.g. LWRCI Rail Skins) can be mounted to protect the rails from impact damage and for thermal comfort.



**6.9.3** SPR configurable rails can be equipped with different rail segments and attachments like the QD mount adapter. These are available through the LWRCI Web Store and from the company.

To install a rail section, use the supplied Allen head machine screws (they have pre-applied thread locker and are not standard machine screws). Match the installation holes on the rail section to the desired hole position on the rail handguard. Install the screws using aTorx wrench to no more than 15 inch/lbs. (hand tight). If you remove the Torx head screw to reposition a rail section, ensure you degrease the screw and hole with a suitable degreaser (e,g, acetone). Apply a medium strength thread locker like Blue Lock-Tite to the screw before installation.

**5.9.4** The barrel nut of the SPR also serves as the rail mount. It is not recommended that Operators remove this as there is no need to do so for Operator level maintenance activities.

**5.9.5** The ARM-R and SPR rails have small C-clips that make the Pusher Screws captive. In the unlikely event these become dislodged or lost, they can be substituted with the C-clip for a standard M16 Ejection Port Rod. To install, remove the Top Rail, then screw the Pusher Screw in all the way. Using needle nose pliers, install the C-clip to the groove toward the nose of the Pusher Screw.

**5.9.6** During firing, the rail will be fouled with carbon and some residue from copper jacketed ammunition. This occurs because the Piston Cup vents under the handguards.

If left, the copper deposits will turn into a blue-green oxide. This is purely cosmetic and has no effect on weapon function. it is easily removed with copper solvent.

Inspect the inside of the Top Rail to ensure that fouling does not interfere with piston operation. Limited wear on the inside of the Top Rail is normal.

## 6.0 TROUBLE SHOOTING

### 6.1 Suppressor Use

**NOTE:** When shooting with a silencer or suppressor, please note the following;

**6.1.1** Quick detach suppressor mounts should be installed by manufacturer or certified gunsmith ONLY to ensure proper alignment and concentricity.

**6.1.2** Use suppressor designed for the caliber of the weapon.

**6.1.3** Ensure suppressor is firmly and correctly attached before use.

**6.1.4** Cyclic Rate will increase.

**6.1.5** Gas Blowback/Fouling will increase.

**6.1.6** Weapon will require increased lubrication and cleaning.

**6.1.7** Gas regulators should be set to S (Suppressed) in A3 and A5 models.

**6.1.8** For extended use of suppressors with non-adjustable models should substitute a heavier (H3) buffer for greater reliability.

**NOTE:** As many of the following malfunctions are magazine related, it is good practice to mark and number magazines to allow identification of defective ones.

### 6.2 FAILURE TO SEAT

**Magazine will not lock into rifle**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Too many rounds in magazine | Remove rounds from magazine and do not exceed magazine capacity when reloading. (Recommended to download duty magazines by two rounds for highest reliability) |
| Bent/damaged magazine feed lips or locking recess cut out | Inspect magazine and replace as necessary. |
| Bent/broken magazine catch | Inspect magazine catch assembly and replace as necessary (armorer level repair) |
| Leading of feed ramps from use of non UseFMJ (Full Metal Jacket) ammunition. | Disassemble. Clean feed ramps. jacketed ammunition. |



### 6.3 FAILURE TO LOAD

**No round present in chamber after charging, releasing bolt**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Magazine not seated properly. | Re-insert magazine, tap/tug to ensure locked in place, charge rifle or release bolt catch. |
| Rifle not fully charged | Ensure charging handle is pulled all the way to the rear before release. |
| Unable to fully charge rifle | Ensure correct buffer and spring are installed, check buffer roll pin is flush with outside of buffer body, inspect buffer tube for FOD (Foreign Object Detected) |
| Bent/damaged magazine feed lips not allowing rounds to sit at proper height to be loaded | Inspect Magazine and replace as necessary. |
| Worn/damaged bolt lugs causing bolt to skip over rounds | Replace bolt. |
| Object detected in magazine | Replace magazine spring and/or follower, clean magazine. |

## 6.4 FAILURE TO FEED

**Bolt lugs pushing on back of cartridge case, nose of round jammed into receiver ramps, barrel extension feed ramps or lugs.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Worn out/incorrect Buffer Spring | Replace Buffer Spring. Do not try to stretch. |
| Too many rounds in magazine. | Remove rounds from magazine and do not exceed magazine capacity when reloading. (Recommended to download duty magazines by two rounds for highest reliability) |
| Magazine not seated properly. | Re-insert magazine, tap/tug to ensure locked in place, charge rifle or release bolt catch. |
| Lead fouling of feed ramps from use of non-full metal jacket (FMJ) ammunition. | Clear, field strip rifle, clean feed ramps. Use jacketed ammunition. |
| Bent/damaged magazine feed lips not allowing round to feed at correct angle | Inspect magazine and replace as necessary. |
| Worn/weak magazine spring not pushing rounds up to correct height in order to be fed properly. | Replace magazine spring. |
| FOD (Foreign Objects Detected) | Disassemble and clean magazine. in magazine. |



## 6.5 FAILURE TO CHAMBER

**Round has pushed past feed ramps and failed to enter chamber at correct angle.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Magazine not seated properly. | Remove magazine, lock bolt to rear, clear failed round, reinsert magazine and ensure it is seated properly. *Do not attempt to reuse failed round. |
| FOD (Foreign Objected Detected) in receiver/barrel extension/chamber. | Clear, field strip rifle, inspect and clean inside receiver/barrel extension/ chamber. |
| Short Stroke | See Short Stroke section for remedies. |
| Lead fouling of feed ramps from use of non-full metal jacket (FMJ) ammunition. | Clear, field strip rifle, clean feed ramps. Use jacketed ammunition. |

## 6.6 FAILURE TO LOCK

**Round has entered chamber correctly but bolt has not fully locked into barrel extension or seated cartridge base properly onto bolt face.**
***Do not attempt to reuse failed round.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Wrong ammunition for chamber | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| FOD (Foreign Objected Detected) in receiver/barrel extension/bolt face/under extractor. | Clear, field strip rifle, inspect and clean bolt face, under extractor, inside chamber and barrel extension. |
| Ammunition defective/damaged or out of specification. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| Weak worn buffer spring. | Replace buffer spring. |

## 6.7 FAILURE TO FIRE

**LIVE round in chamber, trigger is pulled, NO shot is fired.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Defective ammunition/dead primer | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| Broken/weak hammer spring | Replace hammer spring. |
| Worn/broken firing pin | Replace firing pin. |
| FOD (Foreign Objected Detected) in receiver/barrel extension/bolt face/under extractor. | Clear, field strip rifle, inspect and clean bolt face, under extractor, inside chamber and barrel extension. |
| Carrier Bounce/ Bolt Bounce | See Carrier Bounce/ Bolt Bounce section for solutions |

## 6.8 FAILURE TO EXTRACT

**Spent case remains in chamber after firing and carrier group has either short stroked and returned forward or fully fully cycled and attempted to load a new round into a now blocked chamber.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Worn/broken extractor and/or extractor spring. | Replace extractor and/or extractor spring. |
| Corroded/Out of specification ammunition | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| Torn case rim | Defective ammunition or dirty chamber. Clean chamber and inspect ammunition. |
| FOD (Foreign Objected Detected) in receiver/barrel extension/bolt face/under extactor. | Clear, field strip rifle, inspect and clean bolt face, under extractor,inside chamber and barrel extension. |
| Ammunition defective/damaged or out of specification. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| Weak worn buffer spring. | Replace buffer spring. |



## 6.9 FAILURE TO EJECT

**Spent case has been pull partially or completely from the chamber into the receiver but has failed to clear the ejection port. *This is commonly confused with a double feed because the following round is usually jammed in with a spent case resembling two LIVE rounds in the receiver. See Double Feed for more details.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Worn/broken ejector spring. | Replace ejector spring. (armorer level repair) |
| FOD (Foreign Objected Detected) under extractor not allowing spent case to be released. | Inspect, remove and clean extractor. |
| Gas regulator on wrong setting. (A3 & A5 models) | Adjust regulator to correct setting. |
| FOD (Foreign Objected Detected) in receiver/barrel extension/bolt face/under extactor. | Clear, field strip rifle, inspect and clean bolt face, under extractor, inside chamber and barrel extension. |
| Bound/broken ejector. | Remove ejector, inspect, replace/clean as needed. |
| Short stroke | See Short Stroke section for solutions. |

## 6.10 CARRIER BOUNCE/BOLT BOUNCE

**Spent case remains in chamber after firing and carrier group has either short stroked and returned forward or fully cycled and attempted to load a new round into a now blocked chamber.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Worn/Incorrect buffer spring | Replace buffer spring. Use manufacturer recommended springs only. |
| Incorrect buffer (too light) | Use manufacturer recommended buffers only. |
| Worn/broken piston return spring | Replace piston return spring. |
| Gas regulator on wrong setting. (A3 & A5 models) | Adjust regulator to correct setting. |
| Suppressor causing excessive back pressure in operating system and rifle has no regulator. | Install heavier buffer and stronger buffer spring. |
| Over powered ammunition. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |

## 6.11 SHORT STROKE

**Insufficient amount of force or excessive drag in the operating system, not allowing the rifle to fully complete its operational cycle.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Under powered ammunition | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| Dirty, fouled and/or dry operating system | Clean bolt carrier group, inside of upper receiver, chamber and piston system. Apply point lubrication. |
| Receiver extension misaligned causing drag on carrier group | Re-install and realign receiver extension (factory/depot level repair) |
| Gas block loose or cracked, resulting in a loss of pressure. | Re-pin loose block, replace barrel assembly if cracked.(factory/depot level repair) |
| Incorrect buffer (too heavy) and/or buffer spring installed in rifle. | Use only manufacturer recommended springs and buffers. |
| Over powered ammunition. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |



## 6.12 STOVE PIPE

**Spent casings are jammed sideways between bolt and ejection port, typically a result of the rifle operating system cycling too fast. *More common with fully automatic models and when equipped with suppressors.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Broken/worn piston spring | Inspect piston spring and replace as necessary. |
| Worn/Incorrect buffer spring. | Replace buffer spring. Do not try to stretch it back. |
| Incorrect buffer (too light) | Use manufacturer recommended buffers only. |
| Gas regulator on wrong setting. (A3 & A5 models) | Adjust regulator to correct setting. |
| Suppressor causing excessive back pressure in operating system and rifle has no regulator. | Install heavier buffer and stronger buffer spring. |
| Over powered ammunition. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |

## 6.13 DOUBLE FEED

**Two LIVE rounds being simultaneously fed into chamber. This is always a magazine or operator induced failure.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Bent/damaged feed lips | Inspect magazine and replace as necessary. |

## 6.14 ACCURACY ISSUES

**Shots failing to group consistently.**

| CAUSE | CORRECTIVE ACTION |
|---|---|
| Ammunition defective/damaged/ low quality or out of specification. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. Use match grade ammunition of good provenance for best results |
| Sights/optics/optic mounts not torqued or installed properly. | Ensure all Sights/optics/optic mounts are torqued down per manufacturer's specifications. |
| Bore fouled with carbon and/or copper causing rounds not to stabilize properly. | Clean bore. |
| Loose gas block affecting the barrel's vibrational harmonics. | Re-pin gas block. (factory/depot level repair) |



## 6.15 TUMBLING ROUNDS (KEYHOLING)

**Rounds are failing to stabilize in bore, striking the target sideways, resembling a "keyhole" shape.**

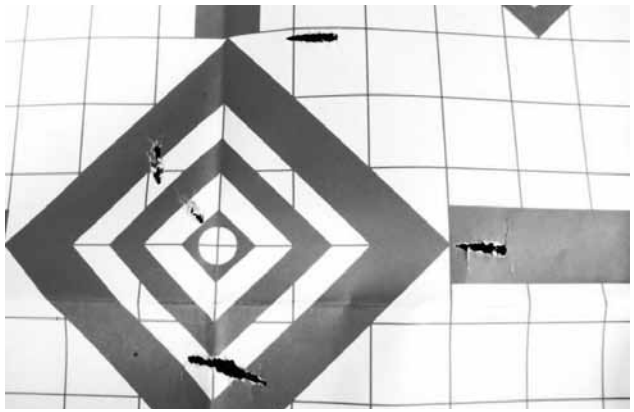
| CAUSE | CORRECTIVE ACTION |
|---|---|
| Ammunition defective/damaged or out of specification. | Inspect all ammunition prior to use and ensure it is the correct caliber and SAAMI/CIP/NATO compliant. |
| Bore fouled with copper causing rounds not to stabilize properly. | Clean bore with copper solvent. Follow instructions provided with solvent. |
| Barrel has reached the end of its service life. | Replace barrel assembly. (factory/depot level repair) |

**NOTE:** Barrel life can be significantly shortened by excessive rates of fire which heats the barrel and its NiCorr case surface conversion to a point where the metallurgical properties of the barrel changes.

Excessive heat also causes the bore diameter to expand to a point where it allows the propellant gasses to overtake the bullet travelling up the bore. These compressed high pressure jets can cut and erode the bore.

The use of projectiles that do not readily compress like sintered powdered metal frangible projectiles, solid metal (copper/brass) projectiles and jacketed projectiles with non-lead cores like M855A1 will result in shortened barrel life.

Shorter barrels generally also have a shorter barrel life as there is less barrel to stabilize the projectiles after throat and bore erosion which is concentrated on the chamber end.



## Warranty

LWRCI™ products are warranted to be free from defective materials and workmanship for the life of the original purchaser. LWRCI™ obligation under this warranty shall be limited to (1) repairing or (2) replacing any product upon inspection at LWRCI™ and based on its discretion, is found to be defective in material or in workmanship.

This warranty is limited and does not extend to: careless handling, abuse and misuse, unauthorized adjustments or modifications, use of improper ammunition, excessive or unreasonable use, ordinary wear & tear, rust or corrosion, and barrel obstruction. Repairs are warranted for the duration of the original warranty and applies only to factory built products.

**Exclusive Remedy:** The remedies in this section and in the warranty agreement constitute the sole and exclusive remedies of any authorized customer, as well as its successors and assigns, for any defect in the product.

**Disclaimer:** The warranty stated in this agreement is the sole and exclusive warranty pertaining to the product. LWRCI™ disclaims any warranty express or implied, including, without limitation, any warranty of merchantability or fitness for a particular purpose. In no event shall LWRCI™, LLC be responsible for any indirect, incidental or consequential damages including, without limitations, lost profits, costs of delay, with respect to economic loss or injury to property or to third parties, whether as a result of breach of express or implied warranty, negligence or otherwise.

Prior to returning any LWRCI™ product for warranty work, you must receive return material authorization (RMA) from our customer service department. The contact information is shown below. Items must be returned prepaid to the address shown below. LWRCI™, LLC accepts no responsibility for items lost or damaged in shipping. Items that are returned and found to be Out-of-Warranty will be repaired at the customer's expense; however, no work will be performed without the customer's written authorization.





# WARRANTY CARD

**Please complete your Warranty registration online at www.lwrci.com** or complete and return the form below to submit your Warranty. For more information on our Warranty and Return Policy, please go to our web site or contact our customer service.

*Model No.: _____ *Serial Number: _____

*Purchase Date: _____ *Dealer ID/Name: _____

*City/State _____ *Zip Code: _____

*First Name: _____ *Last Name: _____

*Address 1: _____

*Address 2: _____

*City: _____ *State: _____ *Zip Code: _____

*Phone: _____ Email: _____

**Indicates required field*

**LWRC INTERNATIONAL, LLC**
815 CHESAPEAKE DRIVE
CAMBRIDGE MARYLAND 21613
410.901.1348 P
410.228.1775 F
WWW.LWRCI.COM


**LWRC INTERNATIONAL, LLC**

CAMBRIDGE, MARYLAND

410.901.1348

410.228.1775 FAX

WWW.LWRCI.COM