

# MONOLITHIC RAIL PLATFORM (MRP)® OPERATOR'S MANUAL



LMT DEFENSE

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# INFORMATION IN THE PUBLICATION IS FREE OF ITAR RESTRICTED INFORMATION

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### WARNINGS, SAFETY CONSIDERATIONS, AND RULES FOR SAFE GUN HANDLING PLEASE READ PRIOR TO OPERATING YOUR LMT FIREARM

To safely and properly handle this firearm, you must understand that injury or death to you or others may result from unsafe or careless use. Keep in mind that while the general rules of safe gun handling always apply, circumstances or conditions may exist that require additional precautions to be taken. Safe use of a firearm is your personal responsibility. Failure to follow these basic firearm safety rules may result in unintended discharge of the firearm and/or serious personal injury or death to you or others.

LMT DEFENSE WILL NOT BE RESPONSIBLE FOR ANY PERSONAL INJURY, DEATH OR PROPERTY DAMAGE THAT RESULTS FROM: (1) THE CRIMINAL OR NEGLIGENT USE OF THIS FIREARM; (2) A DISREGARD OF THESE SAFETY INSTRUCTIONS AND WARN-INGS; (3) IMPROPER OR CARELESS HANDLING OF THIS FIREARM; (4) THE USE OF A NON-STANDARD, DEFECTIVE, IMPROPER OR RELOADED AMMUNITION; AND (5) IMPROP-ER OR NEGLIGENT MODIFICATIONS OR REPAIRS TO THE FIREARM.

If you feel uncertain about any operational aspects of your firearm, please contact LMT Defense customer service (309) 787-7151 before proceeding with its operation.

- Always wear eye and ear protection when using a firearm.
- Always keep the muzzle pointed in a safe direction.
- Never point a firearm at anyone or anything you do not intend to shoot regardless of whether or not it is loaded. This is particularly important when loading, unloading, or field stripping the gun. Always control the direction of the firearm.
- Treat every gun as if it were loaded.
- Load your firearm only when ready to fire.
- Always use the correct ammunition for your particular firearm as indicated by the marking on the firearm.
- Keep the safety on until ready to fire.
- Never place your finger inside the trigger guard or on the trigger unless you intend to fire.
- Only shoot the firearm when you are sure of your target and backstop.
- Do not shoot the firearm if unsure where the bullet will travel if the backstop is penetrated.
- Never rely on a mechanical safety as a replacement or substitute for safe gun handling.
- Even if you have handled and or fired a firearm before; practice inserting and removing an empty magazine to become accustomed to the firearm handling characteristics.
- Always keep the barrel free of obstructions, dirt, mud, sand and other debris.
- If you suspect that the barrel of the firearm may be obstructed, unload the firearm, examine the bore and remove any obstruction and clean before reloading and shooting the firearm. An obstructed barrel may burst, destroying the firearm and seriously injuring the shooter and any bystanders.
- To avoid an accidental discharge, always keep the chamber empty until ready to fire.
- The firearm is unloaded only when the magazine is removed and the chamber is empty.
- When handing or transferring a firearm to another person or accepting a firearm from another person, ALWAYS inspect the firearm; open the action and inspect the chamber to verify that the firearm is unloaded.
- Always unload your firearm before cleaning.

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- Be sure all accessories are compatible with the firearm and that the accessories do not interfere with safe operation.
- There is no way to predict which direction bullets will travel or ricochet when fired at flat ground surfaces or water. When present, always fire directly into a sufficient backstop.
- Always have adequate ventilation. Discharging firearms, cleaning firearms, or handling ammunition in poorly ventilated areas may result in exposure to lead and other substances known to cause birth defects, reproductive harm, and other serious physical injury. Review the warnings and labels for all ammunition and cleaning products carefully. Wash hands thoroughly after exposure.
- You must secure firearms safely from unauthorized users. Your firearm should always be kept unloaded and locked when not in use. Never assume that the use of this lock is sufficient to safely secure your firearm. You must always evaluate your personal situation and employ the security system(s) that meets your needs and prevents children and unauthorized users from gaining access to your firearm.
- Never allow any alteration or replacement of parts in your LMT firearm unless performed by a qualified gunsmith using genuine LMT parts.
- When storing, do not encase your firearm in anything that will attract or hold moisture, for example, leather or heavy cloth. Also, do not store guns with a plug inserted in the barrel for this can be a contributing factor to moisture accumulation. If your firearm is to be stored for an extended period, the bore, the chambers and internal working mechanism should be oiled with a high quality lubricating oil or preservative intended for firearms. The external working mechanisms, lower and upper receiver, and barrel should be coated with anti-rust oil. Before using your firearm again, be sure to clean it. If wear is noted, do not use the firearm. Return it to LMT Defense for service or have it checked by a qualified gunsmith.
- Firearms are dangerous when used and stored improperly. They pose a risk of serious or fatal injuries. Firearms can be especially dangerous to children when they are stored in an irresponsible and unsafe manner. For your safety and the safety of others, it is imperative that you keep your firearm locked and unloaded in a secure place. The ammunition should be stored in a separate, secure location when it is not in use. Safe and secure storage of your firearms is one of the most important rules of firearms safety. Your failure to follow these rules may result in serious injury or death.

#### BEWARE OF DANGEROUS CONDITIONS:

- Be sure Cam Pin is installed in the Bolt Group. If it isn't, your firearm can still fire and could malfunction, causing property damage, personal injury or death.
- When using a Blank Firing Attachment, never fire anything except blank ammunition.
- If your firearm stops firing with a live round in the chamber of a hot barrel (a misfire), pull the charging handle to the rear to eject the round. If that fails to eject the round, remove the magazine and wait 15 minutes with the firearm pointing in a safe direction. Keep your face away from the ejection port while clearing a hot chamber.
- If there is water in the barrel, do not attempt to shoot the firearm. It could malfunction, causing property damage, personal injury or death. Pull the charging handle to the rear, breaking the seal and allowing water to run out of the chamber through the ejection port area.
- If a noticeable difference in sound or recoil is experienced, stop firing. Either condition could indicate an incomplete powder burn and or bullet or other obstruction stuck in the bore of the barrel.
- With the Bolt Carrier Assembly locked to the rear, if the firearm is dropped or jarred with a loaded magazine in place, a live round could be chambered.

### STATE-BY-STATE WARNINGS

tions. Because our products may be sold in these states, we include the following: in that state. LMT Defense sells its products in compliance with applicable laws and regulatype be conspicuously included by the manufacturer, distributor or retailer with firearms sold. Certain states require by law that their own specified warning notices in larger-than-normal

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and improperly uses it, you may be fined or sent to prison." unloaded when not in use. If you keep a loaded firearm where a child obtains juries or death. Prevent child access by always keeping guns locked away and "Children are attracted to and can operate firearms that can cause severe in-California: 🚣

"noizing a obaivna o obaflum un arma cargada donde un niño la obtiene  ${f y}$  la usa indebidamente, puede ser siempre las armas cerradas γ descargadas cuando no estén en uso. "Si guarda causar lesiones graves o la muerte. Evite el acceso de los niños manteniendo . Los niños se sienten atraidos **y** pueden operar armas de fuego que pueden

**OR FINE.** "UNLAWFUL STORAGE OF A LOADED FIRENT WAY RESULT IN IMPRISONMENT Connecticut:

A OT MAAAAIT A TO NOISESESO A O AIHENAUMO NAAAAT ASIWAAHIO AO EASY ACCESS OF A MINOR UNDER 18 YEARS OF AGE OR TO KNOWINGLY SELL ADULT TO STORE OR LEAVE A FIRENAM IN ANY PLACE WITHIN THE REACH OR "IT IS UNLAWFUL, AND PUNISHABLE BY IMPRISOUMENT AND FINE, FOR ANY Florida: 🖌

SEPARATE. KEEP FIREARMS AND AMMUNITION LOCKED UP. USE TRIGGER JECT TO FINE, IMPRISOUMENT OR BOTH. KEEP FIREARMS AND AMMUNITION ARM AND AMMUNITION WITHIN EASY ACCESS OF A CHILD, YOU MAY BE SUB-"ENDANGERING THE WELFARE OF A CHILD IS A CRIME. IF YOU LEAVE A FIRE-Maine: 🚺 MINOR OR A PERSON OF UNSOUND MIND."

initial know or should have known that an unsupervised minor would gain injury. It is a crime to store or leave a loaded firearm in any location where an "WARNING: Children can operate firearms which may cause death or serious Maryland: 🚺

access to the firearm. Store your firearm responsibly!"

LOCKS."

### SONINGAW STATS-Y8-STATS

Massachusetts: "WARNING FROM THE MASSACHUSETTS ATTORNEY GENERAL: This handgun is not equipped with a device that fully blocks use by unauthorized users More the United States. In addition, there are more than a thousand suicides each wear by younger children and teenagers who get access to firearms. Hundreds more die from accidental discharge. It is likely that many more children sustain serious wounds, or inflict such wounds accidentally on others. In order to limit the chance of such misuse, it is imperative that you keep this weapon locked in a sectore place and take other steps necessary to limit the possibility of theft in a secure place and take other steps necessary to limit the possibility of theft in a secure place and take other steps necessary to limit the possibility of theft

these deaths." "IT IS UNLAWFUL TO STORE OR KEEP A FIREARM, RIFLE, SHOTGUN OR MA-"TI IS UNLAWFUL TO STORE OR KEEP A FIREARM, RIFLE, SHOTGUN OR MA-CHINE GUN IN ANY PLACE UNLESS THAT WEAPON IS EQUIPPED WITH A TAMPER-RESISTANT SAFETY DEVICE OR IS STORED OR KEPT IN A SECURELY LOCKED CONTAINER."

or accident. Failure to take reasonable preventive steps may result in innocent lives being lost, and in some circumstances may result in your liability for

New Jersey: M "IT IS A CRIMINAL OFFENSE TO LEAVE A LOADED FIREARM WITHIN EASY AC-CESS OF A MINOR."

New York City: "THE USE OF A LOCKING DEVICE OR SAFETY LOCK IS ONLY ONE ASPECT OF RE-SPONSIBLE FIREARM STORAGE. FOR INCREASED SAFETY, FIREARMS SHOULD BE STORED UNLOADED AND LOCKED IN A LOCATION THAT IS BOTH SEPARATE FROM THEIR AMMUNITION AND INACCESSIBLE TO CHILDREN AND UNAU-THORIZED PERSONS."

North Carolina: "IT IS UNLAWFUL TO STORE OR LEAVE A FIREARM THAT CAN BE DISCHARGED "IT IS UNLAWFUL TO STORE OR LEAVE A FIREARM THAT CAN BE DISCHARGED IN A MANUAR IS A REASONABLE PERSON SHOULD KNOW IS A CERSIBLE TO A MINOR."

Texas: Texas: "Iexas: "Iexas: "Iexas: "Iexas" "IT IS UNLAWFUL TO STORE, TRANSPORT, OR ABANDON AN UNSECURED FIRE-ARM IN A PLACE WHERE CHILDREN ARE LIKELY TO BE AND CAN OBTAIN AC-CESS TO THE FIREARM."

Wisconsin: Wisconsin: Wisconsin: Wisconsin: Wisconsin: Tryou LEAVE A LOADED FIREARM WITHIN THE REACH OR EASY ACCESS OF A CHILD YOU MAY BE FINED OR IMPRISONED OR BOTH IF THE CHILD IMPROPER-LY DISCHARGES, POSSESSES, OR EXHIBITS THE FIREARM."

Please check with your licensed retailer or state police for additional warnings which may be required by local law or regulation. Such regulations change constantly, and local authorities are in the best position to advise you on such legal matters.

### ABOUTLMT

LMT Defense has a long history of manufacturing small arms for defense agencies worldwide. Since 1982, LMT has had one or more U.S. Government contracts currently in production. This has included AR15's and AR10's, components of those systems, grenade launchers, machine gun components , bolt action rifles and various other small arms defense articles. LMT has the patent on the world's best and most trusted upper receiver in the defense industry with the Monolithic Rail Platform (MRP<sup>6</sup>). The lower is also unique in that it has complete ambidextrous controls while providing the most ergonomic user experience. The lower incorporates ambidextrous selector, magazine release, bolt catch and bolt release. LMT is one of the only manufacturers of an ambidextrous bolt catch and bolt release that does not penetrate the trigger guard area.

Our firearms are currently in service in the United States with Department of Defense, Federal Reserve Bank, Central Intelligence Agency, and many law enforcement agencies, United Kingdom, New Zealand, Jordan, Columbia, Denmark, Turkey, Philippines, Estonia and Panama as general service rifle/ grenade launcher platforms.

We are a sought after partner for US Government National Laboratories, major defense contractors, US Army Research Center and USSOCOM to create the best small arms technology in the world to bring concepts to production.

LMT Defense is an industry leader and innovator in the small arms market. We have proven that our firearms are among the best in the world and consistently outperform competitors. It is because of our 40+ years of experience designing, engineering and manufacturing.

#### ABOUT THIS MANUAL

This LMT Defense manual describes the Monolithic Rail Platform (MRP<sup>•</sup>) family of rifles, their unique characteristics, functionality, maintenance, field stripping, troubleshooting strategies, and provides complete illustrated parts lists.

LMT's product warranty requires all maintenance and repair to be in accordance with the procedures provided herein.

### MODELS & NOMENCLATURE MONOLITHIC RAIL PLATFORM (MRP)



The LMT Monolithic Rail Platform (MRP•) is a patented modular rifle platform that hosts the world's first completely monolithic upper receiver. This allows barrel removal and installation as well as the capability to change barrel length, caliber, and operating system all at the user level. This level of modularity allows for one system to fill the role of a close quarters battle rifle or designated marksman/sniper solution as operational requirements change. Furthermor, the system can transition from direct impingement to gas piston through exchange of select parts.

All MRP<sup>•</sup> rifles are considered light weight, gas or piston operated, air cooled, magazine fed, shoulder fired, semi or full automatic rifle systems. They can be field stripped for cleaning with no special tools. All components are 100% interchangeable with no hand fitting of any component.

The MRP<sup>•</sup> family is divided into three major groups:

Defender (Semi-Auto) / Guardian (Full-Auto) This group is comprised of legacy MRP builds, both light (5.56x45) and heavy (7.62x51) frame rifles that do no feature the Modular Ambi dextrous Rifle System (MARS) controls.

Modular Ambidextrous Rifle System - L (MARS-L) The MARS-L is chambered in 5.56x45 and also supports .300 Blackout and 6.8 SPC through change of barrel and/or bolt carrier group. The rifle has completely ambidextrous controls. The rifle has completely ambidextrous controls and an LMT Defense AXLE two-stage precision trigger group.

Modular Ambidextrous Rifle System - H (MARS-H) The MARS-H is chambered in 7.62x51 and also supports 6.5 Creed moor, .260 Remington, .243 Winchester, and 7mm-08 through change of barrel. The rifle has completely ambidextrous controls and an LMT Defense AXLE two-stage precision trigger group.

All barrels and bolts are tested with proof overpressure cartridges and magnetic particle inspected to ensure against stress fractures. Every rifle is test fired for fit and function at the factory and every barrel is tested for accuracy to provide an effective, durable military grade firearm.

### MODELS & NOMENCLATURE MONOLITHIC RAIL PLATFORM (MRP)



### Defender (Semi-Auto) / Guardian (Full-Auto)

MODEL	DEFENDER / GUARDIAN
CALIBER	5.56 X 45 NATO
OPERATION	DIRECT IMPINGEMENT OR GAS PISTON
BARREL LENGTH	10.5" - 20" (266 - 508 MM)
TWISTRATE	I:7" RH CHROME I:7.5" RH 5R CUT STAINLESS STEEL
HANOGUARDS	MONOLITHIC 1913 PICATINNY TOP RAIL QUAD RAIL OR MLOK
FINISH	MIL-SPEC ANODIZED ALUMINUM MIL-SPEC PHOSPHATED STEEL
BUTTSTOCK	ANY MIL-SPEC COMPATIBLE
MUZZLE DEVICE	ANY 1/2 X 28 COMPATIBLE
FIRE CONTROL	SAFE / SEMI / AUTO AVAILABLE

COOLING	AIR
FEEDING	MAGAZINE, 30 ROUND
MUZZLE VELOCITY	2,920 FT/SEC / 890 M/S (APPROX)
MUZZLE ENERGY	I,172 FT-LB / I,592 J (JOULE)
CHAMBER Pressure (Max)	50,750 PSI / 3,499 BAR
RATE OF FIRE	700 - 950 ROUNDS PER MINUTE (CYCLIC) 45-65 ROUNDS PER MINUTE (SEMI)
MAXIMUM RANGE	3,484 YARDS / 3,186 METERS
TRIGGER PULL	5.5 - 9.5 LBS / 2.49 - 4.31 KG
*WEIGHT	6.65 LBS / 3.02 KG
*LENGTH	31.5" / 800 MM STOCK CLOSED 34.8" / 883 MM STOCK EXTENDED
14.5" BARREL, DIRECTIMI	INGEMENT, MLOK UPPER RECEIVER



#### MODULAR AMBIDEXTROUS RIFLE SYSTEM - L (MARS-L)

MODEL	MARS-L	CODLING	AIR
CALIBER	5.56 X 45 NATO, 300 BLACKOUT, 6.8 SPC	FEEDING	MAGAZINE, 30 ROUND
OPERATION	DIRECT IMPINGEMENT OR GAS PISTON	MUZZLE VELOCITY	2,920 FT/SEC / 890 M/S (APPROX)
BARREL LENGTH	10.5" - 20" (266 - 508 MM) (SEE P. 10 & 11)	MUZZLE ENERGY	I,172 FT-LB / I,592 J (JOULE)
TWISTRATE	I:7" RH CHROME I:7.5" RH 5R CUT STAINLESS STEEL	CHAMBER PRESSURE (MAX)	50,750 PSI / 3,499 BAR
HANOGUARDS	MONOLITHIC 1913 PICATINNY TOP RAIL QUAD RAIL, LM8 (SEE P. 10), OR MLOK	RATE OF FIRE	700 - 950 ROUNDS PER MINUTE (CYCLIC) 45-65 ROUNDS PER MINUTE (SEMI)
FINISH	MIL-SPEC ANODIZED ALUMINUM	MAXIMUM RANGE	3,484 YARDS / 3,186 METERS
TINIOT	MIL-SPEC PHOSPHATED STEEL	TRIGGER PULL	5.5 - 9.5 LBS / 2.49 - 4.31 KG
BUTTSTOCK	ANY MIL-SPEC COMPATIBLE	*WEIGHT	6.65 LBS / 3.02 KG
MUZZLE DEVICE	ANY 1/2 X 28 COMPATIBLE	* 51071	31.5" / 800 MM STOCK CLOSED
FIRE CONTROL	SAFE / SEMI / AUTO AVAILABLE	*LENGIH	34.8" / 883 MM STOCK EXTENDED
		* 14.5" BARREL, DIRECT IM	PINGEMENT, MLOK UPPER RECEIVER

### MODELS & NOMENCLATURE MONOLITHIC RAIL PLATFORM (MRP)



#### MODULAR AMBIDEXTROUS RIFLE SYSTEM - H (MARS-H)

MODEL	MARS-H	FIRE CONTROL	SAFE / SEMI / AUTO AVAILABLE
CALIBER	7.62 X 51 NATO, 6.5 CREEDMOOR,	COOLING	AIR
UNLIBER	.260 REM	FEEDING	MAGAZINE, 30 ROUND
OPERATION	DIRECT IMPINGEMENT OR GAS PISTON	MUZZLE VELOCITY	2,750 FT/SEC / 838 M/S (APPROX)
BARREL LENGTH	13.5" - 20" (343 - 508 MM)	MUZZLE ENERGY	2,559 FT-LB / 3,470 J (JOULE)
TWIST RATE	I:8" RH 5R CUT STAINLESS STEEL (6.5) I:9" RH 5R CUT STAINLESS STEEL (.260)	Chamber Pressure (Max)	55,000 PSI / 3,792 BAR
	I:II.25" RH 5R CUT STAINLESS STEEL	RATE OF FIRE	700 - 800 ROUNDS PER MINUTE (CYCLIC) 45-65 ROUNDS PER MINUTE (SEMI)
HANOGUARDS	MONOLITHIC 1913 PICATINNY TOP RAIL	MAXIMUM RANGE	4,177 YARDS / 3,820 METERS
_		TRIGGER PULL	5.5 - 9.5 LBS / 2.49 - 4.3I KG
FINISH	MIL-SPEC PHOSPHATED STEEL	*WEIGHT	8.77 LBS / 3.98 KG
BUTTSTOCK	ANY MIL-SPEC COMPATIBLE	*LENGTH	34.6" / 879 MM STOCK CLOSED
MUZZLE DEVICE	ANY 5/8 X 24 COMPATIBLE	* 16" LIG TWEIGHT BARR	37.9" / 962 MM STUCK EXTENDED el, direc imp geme t, mlok pper r ceive.

The images shown on pages 4 & 5 are only a small sample of the possible combinations of operating system, barrel length/calber, upper receiver, and accessories. The pages that follow will better define compatibility and expand on the major features of the LMT MRP system.

### FIREARM CHARACTERISTICS MRP BARREL & UPPER COMPATABILITY

LMT manufactures a large assortment of upper receivers and barrels which comprise the MRP<sup>®</sup> system resulting in over 100 unique configurations. This section will showcase the different upper receivers avaible and a sample of the barrels compatible with them.

All upper receivers are available in MLOK pattern while select lengths are available in quad rail 1913 Picatinny. Upper receivers compatible with the Defender, Guardian, and MARS-L platforms are designated MRP-L. MARS-H upper receivers are designated MRP-H.

### MRP-L COMPACT

MRP-L compact length upper receiver provides a 12.5" 1913 Picatinny top rail and:

• MLOK compatible upper with installation capability on all 7 remaining sides.

### MRP-L CARBINE

MRP-L carbine length upper receivers provide a 14.5" 1913 Picatinny top rail and:

- Quad Rail: 8" sections of rail at the 3, 6, and 9 'o' clock positions.
- MLOK compatible upper with installation capability on all 7 remaining sides.



Compact Length MLOK L7NX1A



Carbine Length Quad Rail L7S1A



### MRP-L MID

MRP-L mid length upper receivers are both MLOK pattern and were purposefully designed for specific government and international contract requirements

- SPECWAR (SW): 16.5" 1913 top rail with MLOK on all remaining sides.
- SHOVELNOSE (SN): 14.5" 1913 top rail cut to accommodate piston block; extra two inches of MLOK on sides and bottom of receiver.

#### MRP-L RIFLE

MRP-L rifle length upper receivers provide an 18.5" 1913 Picatinny top rail and:

- Quad Rail: 12" sections of rail at the 3, 6, and 9 'o' clock positions.
- MLOK compatible upper with installation capability on all 7 remaining sides.



Mid Length Specwar MLOK L7Z1A



Mid Length Shovelnose MLOK L7ZN2A



Rifle Length MLOK L7Y1A

### FIREARM CHARACTERISTICS MRP BARREL & UPPER COMPATABILITY

### MRP-H CARBINE

MRP-H carbine length upper receivers provide an 19.25" 1913 Picatinny top rail and:

- Quad Rail: 12" sections of rail at the 3, 6, and 9 'o' clock positions.
- MLOK compatible upper with installation capability on all 7 remaining sides.

### MRP-HRIFLE

MRP-H rifle length upper receiver provide an 22.25" 1913 Picatinny top rail and:

• MLOK compatible upper with installation capability on all 7 remaining sides.



Carbine Length Quad Rail LM308B1



Carbine Length MLOK LM308BML1



### BARRELS

LMT Defense barrels are all manufactured and test fired at our facility and held to a strict 1.5" MOA standard. Beyond this, there are features of the MRP barrels that set them apart from others in the industry:

- All barrels are cryogenically treated to reinforce their durability.
- Every barrel is proofed fired with a high pressure cartridge and magnetic particle inspected during the manufacturing process.
- Angled cut of the gas port streamlines gas flow to improve function and reduce collection of heat in the gas block.
- Barrel extension design integrates with the upper receiver to allow rapid barrel change at the operator level using only a T30 torque wrench.
- Some MRP-H barrels are available in a "lightweight" profile that is roughly 1 lb lighter than the standard heavy profile barrel.



### 14.5" 5.56x45 MRP-L BARREL



### 16" 5.56x45 MRP-L PISTON BARREL



### 13.5" 7.62x51 MRP-H LIGHTWEIGHT BARREL

### FIREARM CHARACTERISTICS MRP BARREL & UPPER COMPATIBILITY

LMT Defense barrels can be separated into two categories: MRP-L and MRP-H. Each category is intended for its respective upper receivers on page 10. Some barrels are compatible with only select upper receivers due to overall length or placement of features such as piston blocks or bayonet lugs. Below is a table showcasing available LMT Defense barrels and their compatibility. Visit www.lmtdefense.com for part numbers and pricing.

	MRP-L BARRELS					
MODEL	LENGTH	MATERIAL	RIFLING	CALIBER	OPERATION	UPPER COMPATIBLE
MRP-L	8"	CHROME LINED CMV	I:7" RH	5.56X45	DIRECT IMPINGEMENT	COMPACT
MRP-L	10.5"	CHROME LINED CMV	I:7" RH	5.56X45	DIRECT IMPINGEMENT	COMPACT, CARBINE
MRP-L	10.5"	CHROME LINED CMV	I:7" RH	300B	DIRECT IMPINGEMENT	COMPACT, CARBINE
MRP-L	II.5"	CHROME LINED CMV	I:7" RH	5.56X45	DIRECT IMPINGEMENT	COMPACT, CARBINE
MRP-L	12"	CHROME LINED CMV	I:7" RH	5.56X45	PISTON	CARBINE, MIO*
MRP-L	12.5"	CHROME LINED CMV	I:7" RH	5.56X45	DIRECT IMPINGEMENT	CARBINE, MIO
MRP-L	12.5"	CHROME LINED CMV	1:10" RH	6.8 SPC	DIRECT IMPINGEMENT	CARBINE, MIO
MRP-L	14.5"	CHROME LINED CMV	I:7" RH	5.56X45	DIRECT IMPINGEMENT	CARBINE, MIO, RIFLE
MRP-L	14.5"	CHROME LINED CMV	I:7" RH	5.56X45	PISTON	CARBINE, MIO*
MRP-L	16"	CHROME LINED CMV	I:7" RH	5.56X45	DIRECT IMPINGEMENT	CARBINE, RIFLE
MRP-L	16"	CHROME LINED CMV	I:7" RH	5.56X45	PISTON	CARBINE, MIO*
MRP-L	16"	CHROME LINED CMV	I:7" RH	300B	DIRECT IMPINGEMENT	CARBINE, MIO, RIFLE
MRP-L	16"	CHROME LINED CMV	1:10" RH	6.8 SPC	DIRECT IMPINGEMENT	CARBINE, MIO, RIFLE
MRP-L	16"	CHROME LINED CMV	1:10" RH	6.8 SPC	PISTON	CARBINE, MIO*
MRP-L	16"	STAINLESS STEEL	1:7.5" RH 5R CUT	5.56X45	DIRECT IMPINGEMENT	CARBINE, MIO, RIFLE
MRP-L	20"	CHROME LINED CMV	1:7" RH	5.56X45	DIRECT IMPINGEMENT	MIO, RIFLE
MRP-L	20"	STAINLESS STEEL	1:7.5" RH 5R CUT	5.56X45	DIRECT IMPINGEMENT	MIO, RIFLE
MRP-L MRP-L MRP-L MRP-L MRP-L MRP-L	16" 16" 16" 16" 20" 20"	CHROME LINED CMV CHROME LINED CMV CHROME LINED CMV CHROME LINED CMV STAINLESS STEEL CHROME LINED CMV STAINLESS STEEL	1:7" RH 1:7" RH 1:10" RH 1:10" RH 1:7.5" RH 5R CUT 1:7" RH 1:7.5" RH 5R CUT	5.56X45 300B 6.8 SPC 6.8 SPC 5.56X45 5.56X45 5.56X45	PISTON DIRECT IMPINGEMENT DIRECT IMPINGEMENT PISTON DIRECT IMPINGEMENT DIRECT IMPINGEMENT	CARBINE, MIO* CARBINE, MIO, RIFLE CARBINE, MIO, RIFLE CARBINE, MIO* CARBINE, MIO, RIFLE MIO, RIFLE MIO, RIFLE

\* Piston MRP-L barrels are only compatible with the "Shovelnose" mid length upper receiver. They will not interface with the "Specwar" model.

	MRP-H BARRELS					
MODEL	LENGTH	MATERIAL	RIFLING	CALIBER	OPERATION	UPPER COMPATIBLE
MRP-H	13.5"	CHROME LINED CMV	I:10" RH	7.62X5I	DIRECT IMPINGEMENT	CARBINE
MRP-H	13.5"	STAINLESS STEEL	1:11.25" RH 5R CUT	7.62X51	DIRECT IMPINGEMENT	CARBINE
MRP-H	16"	CHROME LINED CMV	I:10" RH	7.62X5I	DIRECT IMPINGEMENT	CARBINE, RIFLE
MRP-H	16"	CHROME LINED CMV	I:10" RH	7.62X5I	PISTON	CARBINE
MRP-H	16"	STAINLESS STEEL	I:11.25" RH 5R CUT	7.62X5I	DIRECT IMPINGEMENT	CARBINE, RIFLE
MRP-H	16"	STAINLESS STEEL	I:11.25" RH 5R CUT	7.62X5I	PISTON	CARBINE
MRP-H	20"	CHROME LINED CMV	I:10" RH	7.62X5I	DIRECTIMPINGEMENT	CARBINE, RIFLE
MRP-H	20"	STAINLESS STEEL	I:11.25" RH 5R CUT	7.62X5I	DIRECTIMPINGEMENT	CARBINE, RIFLE
MRP-H	20"	STAINLESS STEEL	I:8" RH 5R CUT	6.5 CM	DIRECT IMPINGEMENT	CARBINE, RIFLE
MRP-H	20"	STAINLESS STEEL	1:9" RH 5R CUT	.260 REM	DIRECT IMPINGEMENT	CARBINE, RIFLE

\* 13.5" and 16" MRP-H barrels are available in a "lightweight" profile (1 pound lighter). All MRP-H piston barrels have this profile. See illustrated parts list for part numbers.

### FIREARM CHARACTERISTICS **COMPONENTS & CONTROLS** 4 1 2 5 18 108 3 13 6 19 16

1	FORWARD ASSIST	11	FIRE CONTROL SELECTOR
2	CASE DEFLECTOR	12	BUTTSTOCK
3	BOLT CATCH & RELEASE	13	RECEIVER EXTENSION
4	UPPER RECEIVER	14	CHARGING HANDLE
5	BARREL	15	MAGAZINE CATCH
6	MUZZLE DEVICE	16	MAGAZINE
7	EJECTION PORT COVER	17	TRIGGER
8	MAGAZINE RELEASE	18	QUICK DETACH SWIVEL POINT
9	TRIGGER GUARD	19	GAS BLOCK
10	PISTOL GRIP		8

These features are consistent across all MRP systems; however, some features may not be present in Defender and Guardian Models.

### MAJOR ASSEMBLY COMPONENTS



#### BOLT CARRIER GROUP (BCG)

- CARRIER ASSEMBLY
- BOLT ASSEMBLY
- FIRING PIN & RETAINING PIN
- CAM PIN

- FIRE CONTROL SELECTOR
- PISTOL GRIP
- **EXTENSION GROUP & BUTTSTOCK**
- AUTOMATIC SEAR (FULL-AUTO ONLY)

### FIREARM CHARACTERISTICS

### **COMPONENT & CONTROL DETAILS**

The following entries describe controls of the LMT firearm, their purpose, and how to operate them.

### FORWARD ASSIST & CASE DEFLECTOR

- Forward Assist 1: The purpose of this device is to provide an external method to close the bolt should it fail to close and lock on its own or as a discreet measure for closing the bolt.
- Case Deflector 2: This feature prohibits fired cases from striking a left handed shooter in the face. As a case is ejected it strikes the deflector diverting it away from the shooter.



### CHARGING HANDLE

- The charging handle 3 acts as a linkage to the bolt carrier to retract it. The charging handle is non-reciprocating and held in place by latches on either side of the handle.
- The act of pulling the charging handle to the rear then allowing it, along with the bolt carrier group, to travel forward "cocks" or "charges" the firearm. This places the hammer in a ready-tofire position.

### FIRE CONTROL SELECTOR

- The fire control selector 4 acts as a safety device and setting for the desirable rate of fire.
- MARS-LA is the LMT full-auto lower receiver, which MARS-LS is its semi-auto counterpart. Both models have an ambidextrous selector.
- Three pictograms serve as fire control measures on LMT rifles:





#### FIREARM CHARACTERISTICS

### COMPONENT & CONTROL DETAILS BOLT CATCH & RELEASE

This control serves two purposes: to hold the bolt carrier to the rear when the last shot is fired and to release the bolt carrier from that position to chamber a new round or simply close the action. The lower portion of the bolt catch & release serves as the "catch" whereas the upper portion serves as a release. The MRP features a bolt catch on both the right 1 and left 2 side of the lower





### MAGAZINE CATCH & RELEASE

The magazine catch 3 is on the left side of the receiver and retains a magazine in place once inserted in the weapon. Both the right 4 and left 5 sides of the lower receiver have a release which, when depressed, releases the magazine from the magazine well.





This section describes the operational characteristics of LMT firearms to prepare the operator and ensure the firearm is safe and ready for use. These characteristics are consistent throughout all MRP systems. While the MRP-L is pictured here in the manual, these same procedures apply to the MRP-H.

### **OVERVIEW:**

### CLEARING

This process describes the method by which to ensure the firearm in unloaded for safe handling or in preparation to be loaded.

### FUNCTION CHECK

The function check evaluates operation of the fire control selector to ensure the SAFE, SEMI, and AUTO/BURST (if applicable) settings function correctly.

### LOADING & UNLOADING

This section outlines the steps to load the firearm in preparation for fire and how to correctly unload the firearm.

### **AMMUNITION CONSIDERATIONS**

Safet**y** considerations regarding ammunition should be observed prior to shooting. This section covers specifications, conditions, and environmental considerations for ammunition used with this firearm.

### CYCLE OF OPERATION

LMT firearms utilize an 8-step cycle of operation. This section describes those steps and illustrates the semi-auto and full-auto/burst functions of the firearm.



### CLEARING STEP 1



• Ensure the firearm is pointed in a safe direction and attempt to place the fire control selector 1 on SAFE. If the selector will not move to the safe position, the weapon is uncocked; proceed to Step 2.





- Pull the charging handle 4 rearward using the bolt catch 5 to lock the bolt to the rear. Return the charging handle forward to the locked position.
- If unable to place the firearm on SAFE in Step 1, do so now.



Eject the magazine 2 by pressing the left or right side magazine release 3.



- Visually check the chamber 6 to ensure the firearm is completely unloaded.
- Depress the bolt release Z to return the bolt carrier group to the forward position.
- The firearm is now clear.

### FUNCTION CHECK STEP 1: CHECKING SAFE MODE

- Clear the firearm prior to performing a function check (Page 16).
- Set the fire control selector in the SAFE position 1.
- Apply normal force to the trigger lever. There should be no substantial movement of the trigger lever and no audible indication that the hammer has released.

### STEP 2: CHECKING SEMI-AUTO MODE

- Move the fire control selector to the SEMI position 2.
- Pull and HOLD the trigger lever. You should hear the hammer fall.
- With the trigger still held, pull the charging handle all the way to the rear and release to return the bolt carrier group fully forward. The hammer should not release.
- Slowly release the trigger lever. An audible 'click' should be heard to signify the trigger reset.

### STEP 3: CHECKING AUTO MODE

- Move the fire control selector to the AUTO position 3.
- Pull and HOLD the trigger lever. You should hear the hammer fall.
- With the trigger still held, pull the charging handle all the way to the rear and slowly return the bolt carrier group fully forward. At the end of its travel, the hammer should fall.
- Upon releasing the trigger, a 'click' of the trigger reset should NOT be heard.
- Pull the trigger. The hammer should not release.
- Charge the firearm and return it to the SAFE position.







### LOADING STEP 1

STEP 3



- Ensure the fire control selector is in the SAFE position 1.
- Lock the bolt carrier group to the rear using the bolt catch, and return the charging handle forward to the locked position.



- Insert the magazine 2 into the magazine well 3 until the magazine catch/release 4 secures it in place
- Note: Fully inserting a loaded magazine with the carrier group closed requires greater force to effectively seat the magazine.

#### STEP 4



• With the firearm still on SAFE, press the bolt release 5. Forward movement of the bolt carrier group will send the first round of the magazine into the chamber.



- The firearm is now loaded and prepared to fire.
- Note: If the firearm is to be carried in a loaded configuration, such as for military use, close the ejection port cover 6 to prevent debris from entering or adversely affecting the firearm.

### UNLOADING STEP 1



• Ensure the fire control selector is in the SAFE position 1.

#### STEP 3



- Pull the charging handle 4 all the way to the rear and use the bolt catch 5 to secure the bolt carrier group in place. Return the charging handle forward to the locked position.
- During this movement any round remaining in the chamber should be ejected from the firearm.



• Eject the magazine 2 using the magazine release 3.



- Inspect the chamber 6 to ensure the firearm is free of ammunition.
- Return the bolt carrier group Z to the forward position.

### **AMMUNITION CONSIDERATIONS**

- Ammunition that is corroded should not be fired.
- Ammunition that has been reloaded should be avoided. Factory ammunition adheres to SAAMI or NATO specifications. Hand loaded ammunition is not controlled nor loaded to these specifications. Serious damage to the rifle or the operator is a risk taken with hand loaded ammunition.
- Cartridge cases are easily dented and should be protected from hard knocks and blows. Dented cartridge cases may be difficult to chamber and should not be used. The mechanism may jam and be difficult to lock and extract.
- Cartridges which have been seriously damaged, or those having loose bullets or bullets pushed into the cartridge case should not be used. Over pressure signs include flattening of the primer and pierced primers. These malfunctions are noted by the cartridge case remaining in the chamber and normally a live cartridge stuck behind the base. When the bolt is closed and retracted, the cartridge case pops out of the chamber easily. If the cartridge case is stuck, look at dirty or corroded chamber.







- Cartridges should be kept clean. While operating in sandy environments, the cartridges should be removed from the magazine and have any sand or debris cleaned off and reloaded into the magazine. Cartridges in humid environments should be cleaned and dried off as well. Inspect for corrosion.
- Cartridges whose temperature has been raised to 55°C (130°F), (uncomfortable to hold) or more, due to exposure to the sun, or other sources of heat, should not be fired as dangerously high chamber pressures may result. This can result in damage to the rifle and injury or death to the operator. When returned to lower temperatures, these cartridges should be safe to fire.

### CYCLE OF OPERATION STEP 1: FIRING



With a cartridge in the chamber, hammer cocked, and the fire control selector set to SEMI or AUTO, the trigger can be actuated by the operator to fire the cartridge. When pulled rearward, the trigger pivots forward on the trigger pin and disengages from the notch on the bottom of the hammer. This release allows the hammer spring to drive the hammer forward, contact the rear of the firing pin, forcing it forward within the bolt body, and striking the primer. Activation of the primer ignites the propellant in the cartridge case and creates rapidly expanding gases that force the bullet from the case and propels it down the barrel. Different actions will occur depending on the mode of fire: SEMI or AUTO; SEMI delivers one shot each time the trigger is pulled. AUTO delivers full automatic fire up to magazine capacity.

### SEMI

SEMI is selected when only one round is to be fired with each pull of the trigger. When the trigger is pulled, the disconnector is rotated forward. As the hammer is cocked by the recoil action of the carrier group, the hook of the disconnector engages the upper inside notch of the hammer, catching it, and holding it to the rear. When the trigger is released, the trigger spring returns the trigger to its normal position, rotating the disconnector back with it. This action releases the disconnector's hold on the hammer, releasing it to the trigger sear surface which has moved in front of its hammer notch so that the hammer drops from the disconnect sear to the trigger sear. Now the firearm is ready to fire again.

### AUTO

AUTO is selected when a number of rounds are to be fired successively each time the trigger is pulled. Pulling the trigger releases the hammer. The disconnector is prevented from engaging the hammer by a cam on the selector. After the first shot, as the hammer is being cocked by the recoil action of the bolt carrier group, the notch on the top outside edge of the hammer is engaged by the automatic sear. The hammer is held in the cocked position by the automatic sear until the bolt carrier strikes the upper edge of the automatic sear during counter-recoil. This causes it to release the hammer near the end of the forward travel of the carrier. The hammer then falls to fire the next round. This cycle repeats until either the trigger is released or the magazine is empty.

### CYCLE OF OPERATION STEP 2: UNLOCKING

As the projectile passes the gas port located on the top of the barrel, a small amount of gas bleeds off into the gas block (front sight housing on an M4) or piston block. The gas passes through the gas tube into the carrier key where it is directed downward to an expansion chamber between the back of the bolt and the carrier. The gas expands evenly against the back of the carrier and forces it rearward. In a gas piston platform, the gas actuates a piston rod and spring attached to the piston block. This rod strikes the bolt carrier group, forcing it rearward. Rearward movement of the bolt carrier moves the cam pin in the cam track which causes simultaneous clockwise rotation of the cam pin and bolt to unlock the bolt lugs from the barrel extension.

### STEP 3: EXTRACTING

As the BCG travels rearward, the extractor claw (hooked around the extractor groove on the cartridge rim) pulls the cartridge case free from the chamber.

### STEPS 4 & 5: EJECTING & COCKING

With the case head firmly seated against the bolt face, the ejector and ejector spring are compressed inside the bolt body. As the BCG continues rearward movement, the case mouth passes the front of the ejection port allowing the spring-loaded ejector to push forward against the case head and eject the fired round.

Rearward travel of the BCG forces the hammer downward, compresses the hammer spring, and cocks the hammer. The hammer is now held in place by the disconnector.







### CYCLE OF OPERATION STEPS 6 & 7: FEEDING & CHAMBERING

Upon charging the firearm, the bolt carrier group (BCG) is withdrawn rearward with the charging handle. The BCG contacts the buffer, and compresses the action spring in the extension tube. When the bolt clears the top of the magazine, the tension of the magazine spring against the follower forces the top cartridge into the forward path of the bolt. The action spring forces the buffer forward against the bolt carrier group and starts its forward travel.

As the BCG moves forward, the bottom two lugs of the bolt strip the top cartridge from the magazine. As the cartridge case head is centered into the bolt face, the extractor claw captures the rim of the cartridge and the case head compresses the ejector. The cartridge continues its forward travel into the barrel extension and chamber.

### STEP 8: LOCKING

During forward travel, the bolt cam pin rides in the guide channel of the upper receiver which maintains the bolt in its most forward position. Immediately prior to the bolt locking lugs making contact with the barrel extension, the bolt cam pin emerges from the guide channel. When the chamber halts the forward motion of the bolt, the bolt carrier continues to move forward until it contacts the rear face of the barrel extension, causing the cam pin to move in the cam track which rotates the bolt locking lugs counterclockwise to align with and engage the barrel extension locking lugs. This locks the bolt into battery, and the firearm is now ready to fire.





### ADJUSTING THE BUTTSTOCK

The MRP features an ambidextrous, adjustable buttstock that allows the operator to precisely adjust the length-of-pull to their specific stature, and shooting conditions. The stock is equipped with a spring-loaded pin that engages a series of locking holes in the extension tube. To adjust the buttstock:

 Depress and hold down the right or left side locking lever.

- Slide the buttstock forward or rearward to the desired position.
- Release the locking lever and slide the buttstock slightly forward or rearward until the locking pin engages the nearest locking hole in the extension tube.
- 4. Readjust if necessary for proper fit.

### REMOVING A BORE OBSTRUCTION FROM THE FIRERRM

A misfire, unusual audible report from the rifle, or any time anything enters the muzzle end of the barrel is always a signal to immediately stop firing the rifle and inspect for a bore obstruction. It is not sufficient to merely examine the chamber. Failure to safely examine and clear a bore obstruction can result in serious injury, death, and damage to the firearm. NEVER attempt to remove any obstruction by shooting it out with a loaded or blank cartridge, a cartridge from which the bullet has been removed, or any other method than a proper fitting cleaning rod.

- Clear the firearm before proceeding (see Page 17).
- 2. After making sure the firearm is clear, disengage the takedown pins and separate the upper receiver from the lower receiver.
- 3. Remove the bolt carrier group and charging handle.
- 4. Inspect the bore visually.
- 6. Insert a proper fitting cleaning rod (without threaded tip attachment) from the end of the barrel farthest from the obstruction.
- If the obstruction is a bullet, it may be necessary to tap the cleaning rod handle with reasonable force to dislodge it.
- 8. After the obstruction has been removed, clean the bore, magazine, and other er parts of the firearm that may be contaminated with gun powder or other debris.



#### OPERATION CHARACTERISTICS REMOVING WATER FROM THE FIREARM

Always attempt to keep the weapon dry. When tactical situations permit, use a muzzle cap or protective rifle cover when encountering heavy rain or executing water crossings. These situations,

as well as accidental submergence of the firearm in water, can cause an explosion hazard. It is not sufficient to merely examine the chamber for water. Failure to safely examine and clear the bore and other parts of the weapon of water can result in serious injury, death, and damage to the firearm. NEVER attempt to fire the weapon with water in the bore.

Clear water from the weapon as follows:

- 1. Clear the firearm before proceeding (Page 16).
- 2. Remove muzzle cap, if equipped.
- 3. Point barrel downward and shake firearm vigorously to drain all water.
- 4. Remove the buttstock to expose the receiver extension tube. The receiver extension tube is equipped with three drain holes on the bottom surface and one at the rear.
- Using a suitable pick or pipe cleaner, ensure these drain ports are free of debri that could prevent full drainage of water.
- 6. Re-install the buttstock.
- 7. If wet, dry the bore with a cleaning patch.
- 8. Load the firearm.





LMT firearms can be field stripped without the use of any special tools.

### **STEP1**

- Clear the firearm. .
- SAFE position 1. Set the fire control selector in the
- the firearm. Remove all accessories attached to





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I

- ward on them from the left side of the firearm. Disengage the rear 2 and front 3 receiver takedown pins by pressing in-
- Separate the upper and lower receiver halves.

- Grasp the charging handle 🖳 and
- the upper receiver. Pull the bolt carrier group free from pull it back half way.
- key way located in the top of the Align the charging handle with the
- Remove the charging handle. upper receiver.



LMT firearms can be field stripped without the use of any special tools.



### STEP 5





- While maintaining control of the buffer 1, depress the buffer retainer 2 with a suitable tool (charging handle used in the image above).
- Allow the buffer 3 and action spring 4 to slowly exit the receiver extension.

- Pull downward on the rear half of the buttstock latch 5.
- While keeping the lach in the downward position, pull rearward on the buttstock 6 to remove it from the extension.



#### LMT firearms can be field stripped without the use of any special tools.



#### STEP 7





- Press in the bolt 🛽 inward toward the bolt carrier 🔼
- Pull the firing pin retaining pin 3 from the left side of the bolt carrier.
- The firing pin 4 should fall freely from within the carrier.





- Rotate the cam pin 互 ninety degrees, parallel with the gas key 🙆.
- Remove the cam pin.
- Remove the bolt 7 from the end of the carrier 8.

LMT firearms can be field stripped without the use of any special tools. STEP 9





- Use the firing pin retaining pin 1 to push the extractor pivot pin 2 from within the bolt.
- Remove the extractor 3.

### FIELD STRIP COMPLETE





#### LMT BARREL CHANGE CAPABILITY AND OPERATING SYSTEMS

The patented monolithic design of LMT's MRP system affords certain capabilities not typically found in similar firearms. Manufactured from a single forging, the upper receiver possesses superior durability, the continuous top rail affords optimal real estate for optics and accessories, and the unique barrel mounting design allows for a change in barrel length, caliber, or operating system in mere minutes.



### BARREL CHANGE



- Barrel must be cool to the touch before proceeding with barrel removal and installation
- Prior to barrel removal, the bolt carrier group should be locked to the rear or removed. The barrel may be removed with or without the lower receiver attached.
- With LMT T-30 Torx wrench (sold separately), unscrew and remove the foremost locking screw 2.



- Loosen the rear locking screw 3. This does not need to be removed.
- The barrel 4 may now be removed by pulling the muzzle away from the upper receiver.
- To reinstall a barrel, seat it back in the upper receiver, install the washer and both screws, and torque to 140 inch pounds.

# LMT BARREL CHANGE CAPABILITY AND OPERATING SYSTEMS PISTON OPERATING SYSTEM

The Monolithic Rail Platform (MRP) is capable of using either a direct impingement system 1 or a gas piston system 2 to operate. This system operates in a nearly identical fashion to direct impingement (See Page 21 Cycle of Operation); however, the gas traveling the length of the barrel actuates a piston rod. This motion drives the bolt carrier group to the rear continuing the cycle of operation.

An MRP rifle can transition from direct impingement to gas piston (and the reverse) by simply replacing the barrel, bolt carrer group, and buffer assembly. The buffer replacement is necessary to prevent bolt carrier bounce generated by the faster closing velocity of the piston system.



#### CLEANING







- Install the slotted tip on the end of the cable. Insert the slotted tip in the patch.
- Take a pinch of the patch, pinching upward, slide it through the slot in the tip and pull tight. Tighten the swab by tugging on the top of the patch.



- Saturate patch with CLP
- Insert cable, obstruction mover end first, in the chamber and feed out the muzzle.
- Pull cable through from breech to muzzle.





### CLEANING



- Remove the patch and slotted tip and replace it with the bore brush.
- Insert the cable, obstruction remover end first, in the chamber and feed out of the muzzle.
- Pull cable through from breech to muzzle.













- Clean/scrape the outer surface of the bolt locking lugs and the outside of the bolt.
- Scrape carbon, brass, and debris from the breech face of the bolt.
- With a pick, scrub out the extractor groove. Then, scrub with an all purpose brush.

#### LUBRICATION

After the parts have been cleaned and inspected, all metal parts should be wiped with cotton wiping cloth or cleaning swabs, which have been lightly oiled with CLP or equivalent lubricant. CLP refers to the current Military Spec MIL-PRF 63460E & NATO S-758. This is used in place of LSA (Lubricant Small Arms) and LAW (Lubricant Arctic Weapons). The E revision CLP works in temperature ranges from -60° to 160° F. Do NOT use a water base lubricant such as WD-40. This will hold water and cause corrosion. A lightly oiled swab installed in the cleaning rod swab holder shall be run through the barrel bore once.

The chamber must be lubricated but it is important that only a thin film of lubricant be applied. Then apply one drop of CLP or equivalent lubricant to each of the places shown. An exception to the above is the magazine. The only part to be wiped and oiled is the magazine spring.





- Lightly lubricate all springs, detents, moving parts, and pins.
- Lubricate the forward assist.
- Lubricate the ejection port cover latch and ejection port spring.
- Lubricate the charging handle latch and spring.

### LUBRICATION







- Place three drops of lubricant inside the bolt.
- Place three drops of lubricant inside the bolt carrier key.
- Apply one drop of lubricant to each gas exhaust port on the bolt carrier.
- Apply one drop of lubricant to the buttstock release lever pin.



### CLEANING, LUBRICATION, AND MAINTENANCE MAINTENANCE: ENVIRONMENTAL CONSIDERATIONS EXTREME COLD

 In climates where the temperature is consistently below 0°F, (-18°C), it is necessary to prepare the weapon for cold-weather operation. The weapon should be cleaned. It should be lubricated with Lubricant Arctic Weapons (LAW) or CLP which means the current Military Spec MIL-PRF 63460E & NATO S-758. This is used in place of LSA and LAW (Lubricant Arctic Weapons). The E revision CLP works in temperature ranges from -60° to 160°F.

### HOT, DRY CLIMATES

• When operating in hot climates the coating of oil necessary for operation and preservation will dissipate quickly. Inspect the weapon frequently, paying particular attention to all hidden surfaces of the bolt carrier group, forward assist assembly and lower receiver components. Perspiration contributes to corrosion because it contains acids and salts. After handling the rifle should be cleaned, wipe dry and oiled using CLP or equivalent. Clean and oil the bore of the weapon more frequently when operating in hot, dry climates.

### DUSTY AND SANDY AREAS

• Clean and lubricate the weapon more frequently. Take care to keep sand out of the mechanism when inspecting and lubricating the weapon. If necessary, use a tarp to shield parts from flying sand and dust during disassembly and assembly. Clean and lubricate after operating the weapon. Cover the muzzle with a protective cap and keep the ejection port cover closed.

### HOT, RAINY, HUMID CONDITIONS AND SALT WATER AREAS

- Inspect the weapon more frequently when operating in hot, moist areas.
- When the weapons is not in use, clean and lubricate the bore, chamber, and exposed metal surfaces more frequently than that prescribed for normal service. Put a very thin film of CLP on the chamber and bore.
- Moist and salty atmospheres have a tendency to mix with oil and grease and destroy their rust preventative qualities. Inspect all parts frequently for rust or corrosion.
- When the weapon is not in use or to be placed in storage, cover all metal surfaces with a film of CLP oil or equivalent.

The following pages provide a thorough listing of possible issues that may occur with the MRP system and recommended measures to troubleshoot them. This list covers many but not all potential issues and these situations do not account for improper handling or operator induced errors.

### DEFINITIONS

- Stoppage A stoppage is any unintentional interruption of operation of the firearm due to a malfunction. Immediate action must be taken to clear stoppages.
- Misfire A misfire is a complete failure to fire, which may be due to a faulty firing mechanism in the weapon or defective ammunition. Often misfires are caused by bad primers.
- Cookoff A cook-off is the ignition of a round in the chamber caused by heat from the barrel/chamber.

### IMMEDIATE ACTION

- Immediate action is a series of steps taken to clear a stoppage without analyzing the cause. Remember the acronym "SPORTS", which stands for Slap, Pull, Observe, Release, Tap, Shoot. Immediate action is as follows:
- Slap Slap upward on the magazine and insure that it is installed correctly. Tug on the magazine to insure as well.
- Pull Pull back on the charging handle and retract the bolt carrier group all the way to the rear. At this time either a fired cartridge case or a live round may be ejected.
- Observe Check the chamber and chamber area for any obstruction such as debris, cartridge case lodged in the chamber.
- Release Release the charging handle to allow the bolt carrier group to move forward, stripping a round off the magazine, chambering the round and the bolt locking into the barrel extension.
- Tap Tap forward assist.
- Shoot Attempt to fire.

### REMEDIAL ACTION

- Remedial action is the series of steps taken to determine the cause of a stoppage or malfunction should immediate action fail to succeed.
- The following pages identify failures in firearm operation to assist the armorer in diagnosing and repairing the system to return it to service.

FAILURE	POSSIBLE PROBLEM	POSSIBLE SOLUTION
Failure of magazine	• Magazine catch is dirty or	Remove catch and
to lock in place	rusted	clean. Lubricate with
		CLP
	Damaged or broken magazine	Replace spring
	catch spring	
Failure to feed	Damaged or broken magazine	Replace spring
	catch spring	
	Damaged or broken magazine	Replace catch
	catch	Adjust magazine catch
	• Magazine catch is out of adjust-	Check and replace
	ment	• Replace
	Incorrect buffer	• See "Short recoil"
	Defective magazine	
	Short recoil	
Failure to chamber	• Weak or broken action spring	Replace action spring
	Defective magazine	Replace magazine
	• Defective cartridge	• Replace cartridge
	• Short recoll	• See Short recoil
Failure of bolt to	Missing cam pin	• Replace cam pin
IOCK	Damage bolt carrier	• Find area of malfunc-
	Loose carrier key screws	
	Immunoully accombled systemator	Remove and replace     holt corrier loss and
	Improperty assembled extractor     Pont ges tubs	bolt carrier key and
	Meak or broken action spring	Assemble properly
	Short recoil	<ul> <li>Bend if possible or</li> </ul>
		replace
		Replace action spring
		See "Short recoil"
Failure to fire	Not loaded	Load rifle
	Carbon in firing pin recess	Clean and lubricate
	Broken hammer or hammer	Replace hammer or
	spring	spring
	• Improperly assembled hammer	Assemble properly
	spring	
	• Missing or damaged firing pin	Replace retainer pin
	retaining pin	
	• Seized selector lever in SAFE	Remove selector, clean
		and lubricate
	Damaged firing pin	Check with gauge and
		replace if needed
Failure to unlock	Burred or damaged bolt lug	• File burr or replace bolt
	Burred or damaged lug on bar-	Rile or replace the en-
	rel extension	tire barrel assembly
	Short recoil	See "Short recoil"

PAULDE	DOCCIDI E DDODI EM	DOCCIDI E COLLITION
FAILURE	POSSIBLE PROBLEM	POSSIBLE SOLUTION
Failure to extract	Defective extractor	Replace extractor
	Defective extractor spring	Replace extractor
	assembly	spring assembly
		Check with bore reflec-
	Possible pitted chamber	tor. Replace barrel if
	1	pitted
	Defective over pressure ammo	Replace ammunition
	<ul> <li>Debris in chamber</li> </ul>	Clean chamber
<b>F</b> 1 4 1 4		
Failure to eject	Broken or missing ejector	• Replace
	• Ejector stuck/seized	• Disassemble and clean
	Broken or weak ejector spring	Replace
	Defective underpowered ammo	Replace ammo
	Short recoil	See "Short recoil"
	• Worn or broken trigger nose	Replace trigger assem-
	• Worn or broken trigger notch	bly
	Worn or broken disconnector	Replace hammer
	notch	Replace hammer
	• Worn or broken auto sear hook	Replace hammer
	• Worn missing or broken auto	Replace automatic sear
	sear spring	Disassemble and clean
01 ( )1		
Short recoil	• Damaged or weak action spring	• Replace
	• Improper gaps in gas rings (DI	• Stagger piston gas rings
	only)	
	Improper gaps in piston gas	Armorer repair re-
	rings (Piston only)	quired
	• Worn/missing piston gas rings	Armorer inspection
	(Piston only)	required
	Bent or damaged piston rod	Stagger gas rings
	Loose bolt carrier key	Remove and replace
		bolt carrier key and
		SCREWS
Failure to zero	• Loose barrel	- Retighten/torque harrel
Failure to Zero	• LOOSE Dallel Dont hornal	Relighten/torque barrel     De hand or real-
	• Dent barrei	• Ke-bend or replace
	• Barrel out of sight alignment	Darrel
	• Worn barrel	Align barrel with sights
		Replace barrel
Failure to cycle on	Damaged auto sear or pin	Replace auto sear or pin
AUTO	Faulty selector lever	Replace selector lever
	Short recoil	See "Short recoil"
Fires two round	• Defective semi-auto disconnec-	Replace disconnector
with one pull of	tor	Replace hammer
trigger	• Defective sear surface on ham-	Replace trigger
11660	mer	· Use trigger pin wear
	Defective soor ourface on triager	- Ose ungger pill wear
	• Delective sear surface on trigger	gauge. Replace lower
	Worn trigger/hammer pin holes	receiver it fails

FAILURE	POSSIBLE PROBLEM	POSSIBLE SOLUTION
Fires with selector	• Worn or broken selector lever	Replace selector lever
on SAFE or with		
trigger release on		
SEMI		
Hammer pin "walks"	• Hammer spring not assembled	Remove and assemble
	properly	properly
	Hammer J-pin damaged or missing	Replace hammer
Bolt fails to lock back	Damaged magazine follower	Replace magazine
after last round	Defective magazine spring	Replace magazine
	Damaged feed lips	Replace magazine
	Underpowered ammunition	Replace ammunition
	Short recoil	See "Short recoil"
	Bolt catch binding	Disassemble and clean
	• Bolt catch spring worn or damaged	Replace bolt catch spring
	Bolt catch damaged	Replace bolt catch



### ILLUSTRATED PARTS LISTINGS



	DEFENDER/GUARDIAN/MARS-L MAJOR ASSEMBLY PARTS LIST				
1	L7TF1B	8" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7MA1B	10.5" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7BH1B	10.5" CL 1:7 RH 300 BLACKOUT BARREL ASSEMBLY			
1	L7TA1B	11.5" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7MC1B	12" CL 1:7 RH 5.56 PISTON BARREL ASSEMBLY			
1	L7MH1B	12.5" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7YA1B	12." CL 1:10 RH 6.8 SPC BARREL ASSEMBLY			
1	L7NA1B	14.5" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7NC1B	14.5" CL 1:7 RH 5.56 PISTON BARREL ASSEMBLY			
1	L7PA1B	16" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7PC1B	16" CL 1:7 RH 5.56 PISTON BARREL ASSEMBLY			
1	L7BK1B	16" CL 1:7 RH 300 BLACKOUT BARREL ASSEMBLY			
1	L7EA1B	16" CL 1:10 RH 6.8 SPC BARREL ASSEMBLY			
1	L7KC1B	16" CL 1:7 RH 6.8 PISTON BARREL ASSEMBLY			
1	L7SB1S	16" SS 1:7.5 RH 5.56 BARREL ASSEMBLY			
1	L7RA1B	20" CL 1:7 RH 5.56 BARREL ASSEMBLY			
1	L7SD1S	20" SS 1:7.5 RH 5.56 BARREL ASSEMBLY			

DEFENDER/GUARDIAN/MARS-L MAJOR ASSEMBLY PART2L7NX1ACOMPACT LENGTH MLOK UPPER RECEIVER ASSEM2L7S1ACARBINE LENGTH QUAD RAIL UPPER RECEIVER ASSEM2L7X1ACARBINE LENGTH MLOK UPPER RECEIVER ASSEM	S LIST ABLY
<ol> <li>L7NX1A COMPACT LENGTH MLOK UPPER RECEIVER ASSEM</li> <li>L7S1A CARBINE LENGTH QUAD RAIL UPPER RECEIVER ASSEM</li> <li>L7X1A CARBINE LENGTH MLOK UPPER RECEIVER ASSEM</li> </ol>	ABLY
<ol> <li>L7S1A CARBINE LENGTH QUAD RAIL UPPER RECEIVER AS</li> <li>L7X1A CARBINE LENGTH MLOK UPPER RECEIVER ASSEMD</li> </ol>	
2 L7X1A CARBINE LENGTH MLOK UPPER RECEIVER ASSEM	SSEMBLY
	BLY
2 L7Z1A MID LENGTH MLOK "SPECWAR" UPPER RECEIVER	ASSEMBLY
2 L7ZN2A MID LENGTH MLOK "SHOVELNOSE" UPPER RECEIV	VER ASSY
2 L7RA1A RIFLE LENGTH QUAD RAIL UPPER RECEIVER ASSEM	MBLY
2 L7Y1A RIFLE LENGTH MLOK UPPER RECEIVER ASSEMBLY	
3 LMP103 CHARGING HANDLE ASSEMBLY	
3 LMP103T TACTICAL CHARGING HANDLE ASSEMBLY	
3 LMP103TA AMBIDEXTROUS CHARGING HANDLE ASSEMBLY	
4 L7A3 SEMI-AUTO BOLT CARRIER GROUP, 5.56	
4 L7D3 FULL-AUTO BOLT CARRIER GROUP, 5.56	
4 L7FB3 FULL-AUTO BOLT CARRIER W/ ENHANCED BOLT, 5	5.56
4 L7EB3 SEMI-AUTO BOLT CARRIER W/ ENHANCED BOLT, 5	.56
4 L7XA3 ENHANCED SEMI-AUTO BOLT CARRIER GROUP, 5.5	6
4 L7Q3 ENHANCED FULL-AUTO BOLT CARRIER GROUP, 5.5	56
4 L7A3P PISTON SEMI-AUTO BOLT CARRIER GROUP, 5.56	
4 L7D3CPE PISTON FULL-AUTO BOLT CARRIER GROUP, 5.56	
4 L7M2 M2 TRAINING BOLT CARRIER GROUP, 5.56	
4 L7FB2 ENHANCED SEMI-AUTO BOLT CARRIER GROUP, 6.8	
4 L7FB1 ENHANCED FULL-AUTO BOLT CARRIER GROUP, 6.8	3
4 L7FBP3 PISTON SEMI-AUTO BOLT CARRIER W/ ENHANCED	) BOLT, 6.8
4 L7FBP4 PISTON FULL-AUTO BOLT CARRIER W/ ENHANCED	) BOLT, 6.8
5 L7B2 DEFENDER SEMI-AUTO M16A2 LOWER RECEIVER A	ASSEMBLY
5 L7C2 DEFENDER SEMI-AUTO M4 LOWER RECEIVER ASSE	EMBLY
5 L7LB2 DEFENDER SEMI-AUTO SOPMOD LOWER RECEIVED	R ASSY
5 L7D2F GUARDIAN FULL-AUTO M16A2 LOWER RECEIVER A	ASSEMBLY
5 L7D2 GUARDIAN FULL-AUTO M4 LOWER RECEIVER ASSE	EMBLY
5 L7D4 GUARDIAN FULL-AUTO SOPMOD LOWER RECEIVE	R ASSY
5 M7DA4 MARS-L SEMI-AUTO LOWER RECEIVER ASSEMBLY	
5 M7DM4 MARS-L SEMI-AUTO DMR LOWER RECEIVER ASSEM	ABLY
5 M7DA4SH MARS-L SEMI-AUTO PDW LOWER RECEIVER ASSEM	<b>ABLY</b>
5 M7D4AA MARS-L FULL-AUTO LOWER RECEIVER ASSEMBLY	
5 M7D4AASH MARS-L FULL-AUTO PDW LOWER RECEIVER ASSEM	MBLY



	DEFEND	ER/GUARDIAN/MARS-L BARREL PARTS LIST
1	L7S1B3BRA	MRP GAS TUBE, PISTOL LENGTH (300 BLACKOUT)
1	L7TF1B3	MRP GAS TUBE, COMPACT LENGTH (8" 5.56x45)
1	L7MA1B3	MRP GAS TUBE, CARBINE LENGTH
1	L7S1B3	MRP GAS TUBE, MID LENGTH
1	LM308B2E	MRP GAS TUBE, RIFLE LENGTH
2	LMP281	PIN, ROLL, GAS TUBE
3	LMP152AZ	WASHER, CRUSH
4	LMP129	COMPENSATOR
5	10435	SPRING, COMPRESSION, PISTON
6	L7S1B5	GAS PISTON ASSEMBLY
7	L7S1BA	GAS PISTON PLUG ASSEMBLY



1	DEFENDER/GUARDIAN/MARS-L UPPER RECEIVER PARTS LIST		
1	LMP251	PIN, ROLL, BOLT CATCH	
2	L7S1WAS	410 SS WASHER WITH NITRIDE	
3	L7S1D	SCREW, LOCKING	
4	LMP089	ASSEMBLY, EJECTION PORT	
5	LMP089B	SPRING, EJECTION PORT	
6	LMP089A	PIN, EJECTION PORT COVER	
7	LMP115G	PLUNGER SPRING	
8	LMP1115	FORWARD ASSIST ASSEMBLY	
9	LMP115F	PIN, ROLL	



DI	DEFENDER/GUARDIAN/MARS-L BOLT CARRIER GROUP PARTS LIST		
1	L7A3A	5.56 SEMI-AUTO CARRIER ASSEMBLY	
1	L7D3A	5.56 FULL-AUTO CARRIER ASSEMBLY	
1	L7R3A	5.56 ENHANCED SEMI-AUTO CARRIER ASSEMBLY	
1	L7Q3A	5.56 ENHANCED FULL-AUTO CARRIER ASSEMBLY	
1A	L7R3A1P	5.56 PISTON SEMI-AUTO CARRIER ASSEMBLY	
1A	L7Q3A1P	5.56 PISTON FULL-AUTO CARRIER ASSEMBLY	
2	L7A3B	5.56 BOLT ASSEMBLY	
2	L7A3BP	5.56 PISTON BOLT ASSEMBLY	
2	L7Q3B	5.56 ENHANCED BOLT ASSEMBLY	
2	L7Q3C	6.8 BOLT ASSEMBLY	
3	LMP099	CAM PIN	
4	LMP114	FIRING PIN	
5	LMP114A	FIRING PIN RETAINING PIN	
6	LMP114B	FIRING PIN RETAINING PIN (CAPTURED)	
7	L291B4	PIN, SPRING, ø5/64" x 3/8"	



DEFENDER/GUARDIAN/MARS-L BOLT PARTS LIST		
1	LMP105	EJECTOR
2	LMP113	SPRING, EJECTOR
3A	LMP82C	5.56 BOLT
3B	LMP820	5.56 ENHANCED BOLT
3B	LMP820A	6.8 BOLT
3C	LMP82D	5.56 PISTON BOLT (NOT PICTURED)
4	LMP113A	PIN, EJECTOR ROLL
5	LMP110	PIN, EXTRACTOR
6	LMP093	RING, BOLT
7	100632701	O-RING 1/16 C/S X 1/8 ID X 1/4
8A	LMP111	SPRING, EXTRACTOR, STANDARD, 5.56
8B	LMP1110B	SPRING, EXTRACTOR, ENHANCED, 5.56
9A	LMP112	EXTRACTOR, STANDARD, 5.56
9B	LMP1120	EXTRACTOR, ENHANCED, 5.56
9B	LMP1120A	EXTRACTOR, ENHANCED, 6.8
10	LMP11A	INSERT, EXTRACTOR SPRING, 5.56





	MARS-L LOWER RECEIVER PARTS LIST		
1	L7LA2BA	SOPMOD BUTTSTOCK ASSEMBLY, BLACK	
2	LMP259A	EXTENSION TUBE	
3	L7A2E	NUT, RECEIVER EXTENSION	
4	L7A2DERRR	PLATE, RECEIVER END, QD	
5	L8PG2-BLK	PISTOL GRIP ASSEMBLY	
6	LMP277	WASHER, LOCK	
7	LMP276	SCREW, PISTOL GRIP	
8	LMP092DA	FULL-AUTO AMBIDEXTROUS SELECTOR ASSEMBLY	
8	LMP092CAA	SEMI-AUTO AMBIDEXTROUS SELECTOR ASSEMBLY	
9	LMP101AL	CATCH, BOLT AMBI LEFT	
10	LMP252	PLUNGER, BOLT CATCH	
11	LMP109D	PIN, ROLL, TRIGGER GUARD	
12	LMP254	CATCH, MAGAZINE	
13	LMP253	SPRING, BOLT CATCH	
14	LM308A6	AMBI MAG RELEASE	
15	LMP149QA	FULL-AUTO MARS-L LOWER RECEIVER	
15	LMP149Q	SEMI-AUTO MARS-L LOWER RECEIVER (NOT PICTURED)	
16	LMP251	PIN, ROLL, BOLT CATCH	
17	LMP250	DETENT, TAKEDOWN	
18	LMP249	SPRING, DETENT, TAKEDOWN	
19	LMP162	PIN, RECEIVER PIVOT	
20	LMP255	SPRING, MAGAZINE CATCH	
21	LMP106	BUTTON, MAGAZINE CATCH	
22	LMP101AR	AMBI BOLT CATCH ASSEMBLY, RIGHT	
23	LMP113	SPRING, EJECTOR	
24	84178	6-32 FLATHEAD SCREW	
25	LMP092L	LEFTY FIRE SWITCH	
26	LMP248	DETENT, FIRE CONTROL	
27	LMP163	TAKEDOWN PIN	
28	*	*TRIGGER GROUP (SEE PAGE 48-49)	
29	L7CB2F	ASSEMBLY, H BUFFER	
30	LMP258	SPRING, BUFFER RETAINER	
31	LMP257	RETAINER, BUFFER	
32	LMP262A	SPRING, CARBINE ACTION	
33	LMP109AE	WINTER TRIGGER GUARD ASSEMBLY	
34	LMP101C	CAP	
35	LMP200	AUTOMATIC SEAR ASSEMBLY	
36	LMP275	PIN, AUTOMATIC SEAR	
37	LMP101AR4	PIN, CLDP .062 X .285 MBK	
38	CM004	HEAVY DUTY PUSH BUTTON SWIVEL	



	DEFENDER/GUARDIAN LOWER RECEIVER PARTS LIST		
1	LMP250	DETENT, TAKEDOWN	
2	LMP263	SPRING, HAMMER	
3	LMP277	WASHER, LOCK	
4	LMP276	SCREW, PISTOL GRIP	
5	LMP248	DETENT, FIRE CONTROL	
6	LMP251	PIN, ROLL, BOLT CATCH	
7	LMP101	CATCH, BOLT	
8	LMP149H	SEMI-AUTO DEFENDER LOWER RECEIVER	
8	LMP149D	FULL-AUTO GUARDIAN LOWER RECEIVER (NOT PICTURED)	
9	LMP090	ASSEMBLY, HAMMER, SEMI	
10	LMP249	SPRING, DETENT, TAKEDOWN	
11	LMP253	SPRING, BOLT CATCH	
12	LMP254	CATCH, MAGAZINE	
13	LMP106	BUTTON, MAGAZINE CATCH	
14	LMP255	SPRING, MAGAZINE CATCH	
15	LMP092A	SEMI-AUTO SELECTOR	
15	LMP092B	FULL-AUTO SELECTOR	
16	LMP163	TAKEDOWN PIN	
17	LMP252	PLUNGER, BOLT CATCH	
18	LMP91B	SPRING, DISCONNECTOR	
19	L7A2E	NUT, RECEIVER EXTENSION	
20	L7A2F	ASSEMBLY, CARBINE BUFFER	
21	LMP109D	PIN, ROLL, TRIGGER GUARD	
22	LMP264	SPRING, TRIGGER	
23	L7A2DERRR	PLATE, RECEIVER END, QD	
24	LMP113	SPRING, EJECTOR	
25	LMP93A	TRIGGER, SEMI-AUTO	
26	LMP165	DISCONNECTOR, SEMI-AUTO	
27	LMP109A	ASSEMBLY, TRIGGER GUARD	
28	LMP258	SPRING, BUFFER RETAINER	
29	LMP262A	SPRING, CARBINE ACTION	
30	LMP162	PIN, RECEIVER PIVOT	
31	LMP256	PIN, HAMMER AND TRIGGER	
32	LMP257	RETAINER, BUFFER	
33	L291B	ASSEMBLY, COLLAPSIBLE BUTTSTOCK	
34	LMP259A	EXTENSION TUBE	
35	L8PG2-BLK	PISTOL GRIP ASSEMBLY	



	MARS-H MAJOR ASSEMBLY PARTS LIST		
1	LM308B413	13.5" CL 1:10 RH 7.62 BARREL ASSEMBLY	
1	LM308B113	13.5" CL 1:10 RH LIGHTWEIGHT 7.62 BARREL ASSEMBLY	
1	LM308B213S	13.5" SS 1:11.25 RH 7.62 BARREL ASSEMBLY	
1	LM308B113S	13.5" SS 1:11.25 RH LIGHTWEIGHT 7.62 BARREL ASSEMBLY	
1	LM308B216	16" CL 1:10 RH 7.62 BARREL ASSEMBLY	
1	LM308B116	16" CL 1:10 RH LIGHTWEIGHT 7.62 BARREL ASSEMBLY	
1	LM308B116PSE	16" CL 1:10 RH LIGHTWEIGHT PISTON 7.62 BARREL ASSY	
1	LM308B216S	16" SS 1:11.25 RH 7.62 BARREL ASSEMBLY	
1	LM308B116S	16" SS 1:11.25 RH LIGHTWEIGHT 7.62 BARREL ASSEMBLY	
1	LM308B116SPSE	16" SS 1:11.25 RH LIGHTWEIGHT PISTON 7.62 BARREL ASSY	
1	LM308B220	20" CL 1:10 RH 7.62 BARREL ASSEMBLY	
1	LM308B220S	20" SS 1:11.25 RH 7.62 BARREL ASSEMBLY	
1	LM650B220S	20" SS 1:11.25 RH 6.5 CREEDMOOR BARREL ASSEMBLY	
1	LM260B220S	20" SS 1:11.25 RH .260 REMINGTON BARREL ASSEMBLY	



	MARS-H MAJOR ASSEMBLY PARTS LIST		
2	LM308B1	CARBINE QUAD RAIL MRP-H UPPER RECEIVER ASSEMBLY	
2	LM308BML1	CARBINE MLOK MRP-H UPPER RECEIVER ASSEMBLY	
2	LM308BML4A	RIFLE MLOK MRP-H UPPER RECEIVER ASSEMBLY	
3	LM308CA	MRP-H TACTICAL CHARGING HANDLE ASSEMBLY	
3	LM308CB	MRP-H AMBIDEXTROUS CHARGING HANDLE ASSEMBLY	
4	LM308D	SEMI-AUTO BOLT CARRIER GROUP, 7.62	
4	LM308DA	FULL-AUTO BOLT CARRIER GROUP, 7.62	
4	LM308DPS	PISTON BOLT CARRIER GROUP, 7.62	
5	LM308AM	MARS-H SEMI-AUTO SOPMOD LOWER RECEIVER ASSEMBLY	
5	LM308AMD	MARS-H SEMI-AUTO DMR LOWER RECEIVER ASSEMBLY	
5	LM308AAM	MARS-H FULL-AUTO SOPMOD LOWER RECEIVER ASSEMBLY	
5	LM308AAMD	MARS-H FULL-AUTO DMR LOWER RECEIVER ASSEMBLY	



MARS-H BARREL PARTS LIST		
1	LMP129E	5/8X24 A2 FLASH HIDER
1	LMP152AE	5/8 CRUSH WASHER (NOT PICTURED)
1	L8FH3P308E	LMT 5/8X24 3 PRONG FLASH HIDER
2	L7S1B3	MRP GAS TUBE, MID LENGTH
2	LM308B2E	MRP GAS TUBE, RIFLE LENGTH
3	LMP281	PIN, ROLL, GAS TUBE
4	LM308B6CE	GAS PLUG, .308, 1 POSITION
5	LM308B5	GAS PISTON ASSEMBLY, .308



	MARS-H UPPER RECEIVER PARTS LIST		
1	LMP251	PIN, ROLL, BOLT CATCH	
2	LM308B1WAS	SS WASHER	
3	L7S1D	SCREW, LOCKING	
4	LM308B1A1	.308 EJECTION PORT COVER	
5	LMP089B	SPRING, EJECTION PORT	
6	LMP089A	PIN, EJECTION PORT COVER	



	MARS-H BOLT CARRIER GROUP PARTS LIST		
1	LM308D1	.308 SEMI-AUTO CARRIER ASSEMBLY	
1	LM308DA1	.308 FULL-AUTO CARRIER ASSEMBLY	
1A	LM308D1PS	.308 PISTON CARRIER ASSEMBLY	
2	LM308D7	5.56 BOLT ASSEMBLY	
2A	LM308D7PS	5.56 PISTON BOLT ASSEMBLY	
3	LM308D4	CAM PIN	
4	LM308D3	FIRING PIN	



MARS-H BOLT PARTS LIST		
1	67501122	EJECTOR RETAINING PIN
2	LM308D2AA	BOLT, DUAL EJECTOR
3	LM308D2B1	EXTRACTOR SPRING
4	LM308D2B2	EXTRACTOR BUFFER
5	LM308D2BA	EXTRACTOR
6	LM308D2D	EXTRACTOR PIVOT PIN
7	LM308D2E1	GAS RING
8	LM308D2E2	GAS RING INNER
9	LM308D2H	EJECTOR, TWIN SPRING
10	LMP113B	EJECTOR SPRING .308



MARS-H LOWER RECEIVER PARTS LIST					
1	* *SUBCOMPONENT OF ITEM 17				
2	DMR308	DMR BUTTSTOCK			
3	L7A2DERRR	PLATE, RECEIVER END, QD			
4	L7A2E	NUT, RECEIVER EXTENSION			
5	L8PG2-BLK	PISTOL GRIP ASSEMBLY			

	MARS-H LOWER RECEIVER PARTS LIST			
6	5 * SUBCOMPONENT OF ITEM 5			
7	*	SUBCOMPONENT OF ITEM 5		
8	LMP092DA	FULL-AUTO AMBIDEXTROUS SELECTOR		
8	LMP092CAA	SEMI-AUTO AMBIDEXTROUS SELECTOR		
9	LM308A10L	BOLT CATCH, AMBI LEFT		
10	LM308A3	PIN, RECEIVER PIVOT		
11	LM308A6	AMBI MAG RELEASE		
12	LM308A7	PIN, TAKEDOWN		
13	LM308A8	BUFFER ASSEMBLY H3		
14	LM308A9	SPRING, ACTION		
15	LM308AAM1	FULL-AUTO MARS-H LOWER RECEIVER		
15	LM308AM1	SEMI-AUTO MARS-H LOWER RECEIVER (NOT PICTURED)		
16	LM308AAZ	AUTO SEAR ASSEMBLY		
17	LMP092DA	FULL-AUTO AMBIDEXTROUS SELECTOR ASSEMBLY		
17	LMP092CAA	SEMI-AUTO AMBIDEXTROUS SELECTOR ASSEMBLY		
18	*	*SUBCOMPONENT OF ITEM 17		
19	LMP101AR	AMBI BOLT CATCH ASSEMBLY, RIGHT		
20	LMP101AR4	ROLL PIN, .062 X .285 MBK		
21	LMP101C	CAP		
22	LMP106	BUTTON, MAGAZINE CATCH		
23	LMP109AE	WINTER TRIGGER GUARD ASSEMBLY		
24	LMP109D	PIN, ROLL, TRIGGER GUARD		
25	LMP113	SPRING, EJECTOR		
26	LMP2420EA	FULL-AUTO AXLE 2-STAGE TRIGGER ASSEMBLY		
27	LMP2430D	FULL-AUTO 2-STAGE HAMMER ASSEMBLY		
28	LMP248	DETENT, FIRE CONTROL		
29	LMP249	SPRING, DETENT, TAKEDOWN		
30	LMP250	DETENT, TAKEDOWN		
31	LMP251	PIN, ROLL, BOLT CATCH		
32	LMP252	PLUNGER, BOLT CATCH		
33	LMP253	SPRING, BOLT CATCH		
34	LMP254	CATCH, MAGAZINE		
35	LMP255	SPRING, MAGAZINE CATCH		
36	LMP256B	PIN, HAMMER AND TRIGGER		
37	LMP257	RETAINER, BUFFER		
38	LMP258	SPRING, BUFFER RETAINER		
39	LMP259C	.308 RECEIVER EXTENSION TUBE		
40	LMP263	SPRING, HAMMER		
41	LMP264B	SPRING, TRIGGER		
42	LMP275	PIN, AUTOMATIC SEAR		
43	LMP276	1" L 1/4-28 THRD FHCS		
44	LMP277	WASHER, LOCK		



1	AXLE 2-STAGE TRIGGER GROUP PARTS LIST			
1	LMP2400ES	SEMI-AUTO AXLE 2-STAGE TRIGGER GROUP		
1A	LMP2400EA	FULL-AUTO AXLE 2-STAGE TRIGGER GROUP		
2	LMP2420ES	SEMI-AUTO AXLE 2-STAGE TRIGGER ASSEMBLY		
2A	LMP2420EA	FULL-AUTO AXLE 2-STAGE TRIGGER ASSEMBLY		
3	LMP242E	AXLE TRIGGER		
4	LMP241EF	HOOK, FRONT TRIGGER		
5	LMP91FE	TRIGGER PIN TUBE		
6	LMP241ES	AXLE SEMI-AUTO DISCONNECTOR		
6A	LMP241EA	AXLE FULL-AUTO DISCONNECTOR		
7	W-1	AXLE DISCONNECTOR SPRING		
8	LMP256B	PIN, HAMMER AND TRIGGER, TWO-STAGE		
9	LMP2430C	SEMI-AUTO 2-STAGE HAMMER ASSEMBLY		
9A	LMP2430D	FULL-AUTO 2-STAGE HAMMER ASSEMBLY		
10	LMP264	SPRING, TRIGGER, 2-STAGE		
11	LMP263	SPRING, HAMMER		



1	AXLE EURO 2-STAGE TRIGGER GROUP PARTS LIST			
1	LMP2400EUS	SEMI-AUTO AXLE EURO 2-STAGE TRIGGER GROUP		
1A	LMP2400EUA	FULL-AUTO AXLE EURO 2-STAGE TRIGGER GROUP		
2	LMP2420EUS	SEMI-AUTO AXLE EURO 2-STAGE TRIGGER ASSEMBLY		
2A	LMP2420EUA	FULL-AUTO AXLE EURO 2-STAGE TRIGGER ASSEMBLY		
3	LMP242EU	AXLE EURO TRIGGER		
4	LMP241EF	HOOK, FRONT TRIGGER		
5	LMP91FE	TRIGGER PIN TUBE		
6	LMP241ES	AXLE SEMI-AUTO DISCONNECTOR		
6A	LMP241EA	AXLE FULL-AUTO DISCONNECTOR		
7	W-1	AXLE DISCONNECTOR SPRING		
8	LMP256B	PIN, HAMMER AND TRIGGER, TWO-STAGE		
9	LMP2430C	SEMI-AUTO 2-STAGE HAMMER ASSEMBLY		
9A	LMP2430D	FULL-AUTO 2-STAGE HAMMER ASSEMBLY		
10	LMP264	SPRING, TRIGGER, 2-STAGE		
11	LMP263	SPRING, HAMMER		



	STANDARD SINGLE STAGE TRIGGER GROUP PARTS LIST			
1	LMP263	SPRING, HAMMER		
2A	LMP090	SEMI-AUTO STANDARD HAMMER ASSEMBLY		
2B	LMP96	FULL-AUTO STANDARD HAMMER ASSEMBLY		
3A	LMP165	DISCONNECTOR, SEMI-AUTO		
3B	LMP166	DISCONNECTOR, FULL-AUTO		
4	LMP91B	SPRING, DISCONNECTOR		
5A	LMP93A	TRIGGER, STANDARD, SEMI-AUTO		
5B	LMP94A	TRIGGER, STANDARD, AUTO		
6	LMP256	PIN, HAMMER AND TRIGGER		
7	LMP264	SPRING, TRIGGER		

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FIREARM MAINTENANCE RECORD		
DATE	SERVICE PERFORMED	PERFORMED B
3		
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2		
3		
1		
2		
3		

### NOTES

### NOTES





#### ISO 9001:2015 Registered.

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