

MARCO LMAR

PO Box 1523 400 North A Street
Richmond, IN 47375

FIREARMS



CETME L, LC, LV MANUAL

VER. 1.0

**MarColMar Firearms LLC proudly uses
CERAKOTE on its CETME L, LC, and LV firearms:**



MarColMar CETME Model L, LC, LV Manual
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Manual may be found online at: www.marcolmarfirearms.com

***** IMPORTANT SAFETY NOTICE *****

BEFORE YOU OPERATE YOUR CETME L, LC or LV, YOU MUST READ AND UNDERSTAND THIS MANUAL! Owning a firearm brings with it a lot of responsibility for your own safety, and the safety of others... **SO READ THE MANUAL AND FAMILIARIZE YOURSELF WITH THE FIREARM'S OPERATION BEFORE ATTEMPTING TO USE IT.**

SHOOTING IS AN INHERENTLY DANGEROUS ACTIVITY - FIREARMS CAN CAUSE SERIOUS INJURY OR DEATH. THIS IS ESPECIALLY TRUE IF YOU ARE NOT KNOWLEDGEABLE ABOUT THE OPERATION AND FEATURES OF YOUR FIREARM, OR IF THEY ARE HANDLED IN AN UNSAFE MANNER. BY SHOOTING THIS FIREARM THE OPERATOR ASSUMES FULL RESPONSIBILITY FOR THEIR ACTIONS, THE ACTIONS OF OTHERS ALLOWED TO USE, THOSE WHO GAIN ACCESS TO THE FIREARM, AND THE SAFETY OF OTHERS WHO MAY BE UNAWARE OF THE SHOOTING ACTIVITY. YOU ARE RESPONSIBLE FOR EVERYONE, WHEN YOU SHOOT.

PREVENT ACCESS TO THIS FIREARM BY CHILDREN AND/OR UNAUTHORIZED PARTIES! KEEP IT LOCKED AWAY AND UNLOADED WHEN NOT IN USE. ALWAYS USE THE CABLE LOCK WHEN STORED, AND KEEP AMMO AND MAGAZINES STORED SEPARATELY AND AWAY FROM THE FIREARM! SEVERE PENALTIES EXIST IF A CHILD OR ANOTHER PERSON OBTAINS AND IMPROPERLY USES A FIREARM, YOU MAY BE HELD FINANCIALLY RESPONSIBLE, AND EVEN BE SENT TO PRISON.

WE RECOMMEND ONLY NEW, FRESH COMMERCIAL / BRASS CASED AMMUNITION BE USED IN THIS FIREARM. WE ARE NOT RESPONSIBLE FOR DAMAGE OR INJURY AS A RESULT OF USING FAULTY, NON-STANDARD, RELOADED, OR REMANUFACTURED AMMUNITION. ALWAYS ENSURE THE GUN IS POINTED IN A SAFE DIRECTION, ESPECIALLY BEFORE LOADING!

DO NOT MODIFY OR CHANGE THIS FIREARM. ITS SYSTEMS HAVE BEEN DESIGNED TO BE SAFELY USED BY THE OPERATOR. WE ARE NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY DUE TO ANY MODIFICATION OR CHANGE MADE BY THE OWNER OR USER.

MARCOLMAR FIREARMS LLC IS NOT RESPONSIBLE FOR ACCIDENTS, INJURIES, DAMAGE OR DEATH RELATED TO UNSAFE HANDLING, IMPROPER ACTIONS, UNFAMILIAR OPERATION, IMPROPER BACKSTOP, FAULTY AMMUNITION, OR WORN COMPONENTS. DON'T TAKE RISKS – THOROUGHLY FAMILIARIZE YOURSELF WITH THE FIREARM AND ITS FEATURES. IF YOU ARE UNSURE – STOP – MAKE THE FIREARM SAFE – AND CONSULT THE MANUAL OR CONTACT US!

REMEMBER – DON'T RELY ON MECHANICAL SAFETIES – TREAT EVERY GUN AS IF IT IS LOADED AT ALL TIMES! THOROUGHLY CLEAR / UNLOAD ANY GUN THAT IS NOT TO BE IMMEDIATELY FIRED!!

SAFETY:

Safety is **EVERYONE'S** responsibility. We want to ensure that you, your CETME L, and anyone who may be close while firing, or around the gun while stored, are always safe. **DON'T GIVE THE ANTI-GUNNERS ANYTHING TO TALK ABOUT!** Ensure the firearm is always secured and follow the NRA's Rules of Safety:

1. **TREAT EVERY FIREARM AS IF IT WERE LOADED AT ALL TIMES.**
2. **ALWAYS KEEP THE GUN POINTED IN A SAFE DIRECTION.**
3. **KEEP YOUR FINGER OFF THE TRIGGER UNTIL READY TO SHOOT.**
4. **ALWAYS CARRY YOUR FIREARM IN A MANNER SO NO ONE WOULD BE HURT IF YOU STUMBLED OR FELL.**
5. **BEFORE YOU SHOOT CHECK THE BARREL FOR OBSTRUCTIONS AND THE ACTION FOR PROPER FUNCTIONING.**
6. **ALWAYS KEEP THE GUN UNLOADED AND SECURED WITH THE ACTION LOCK IN PLACE, WHEN NOT IN USE.**
7. **KNOW YOUR TARGET! DO NOT SHOOT AT UNSAFE TARGETS OR THOSE THAT COULD POSE A RICHOCHET THREAT.**
8. **KNOW YOUR BACKSTOP! MAKE SURE IT IS CLEAR AND SAFE AND THERE ARE NOT PEOPLE OR PROPERTY BEYOND AT RISK.**
9. **ALWAYS USE HEARING AND EYE PROTECTION.**
10. **KNOW HOW TO USE THE FIREARM AND MAINTAIN IT. NEVER ALLOW THOSE UNFAMILIAR WITH ITS OPERATION TO USE IT.**
11. **USE THE CORRECT AMMUNITION FOR YOUR GUN. USE CLEAN AND FRESH, FACTORY LOADED, BRASS CASED AMMUNITION OF THE CORRECT CALIBER AND BULLET WEIGHT (62 OR 55 GRAIN 5.56 OR .223).**
12. **NEVER PASS A LOADED FIREARM TO ANOTHER PERSON. ENSURE THE FIREARM IS UNLOADED AND THE ACTION IS OPEN AND SAFE.**
13. **NEVER USE ALCOHOL, ILLEGAL DRUGS, OR OVER-THE-COUNTER DRUGS BEFORE OR WHILE SHOOTING!**
14. **STORE THE FIREARM SECURELY SO THAT IT IS NOT AVAILABLE TO UNAUTHORIZED PERSONS – ESPECIALLY CHILDREN! NEVER STORE THE AMMUNITION WITH THE GUN – PLACE AMMUNITION IN SECURE STORAGE AS WELL. USE THE PROVIDED ACTION LOCK WHEN STORED.**
15. **NEVER STORE THE FIREARM LOADED! WHEN SHOOTING IS COMPLETE, UNLOAD THE FIREARM BEFORE TRANSPORT AND STORAGE.**
16. **DON'T RELY ON YOUR FIREARMS SAFETY MECHANISM. HANDLE EVERY FIREARM AS IF IT WILL GO OFF AT ANY TIME – EVEN WITHOUT THE TRIGGER BEING PULLED.**
17. **DO NOT ALTER OR MODIFY THIS GUN IN ANY WAY. IF YOU ARE HAVING PROBLEMS CONTACT US DIRECTLY. ALTERING OR MODIFYING THIS FIREARM VOIDS THE WARRANTY AND MAY CAUSE UNSAFE CONDITIONS OR EVEN DEATH.**
18. **HAVE YOUR FIREARM OCCASIONALLY INSPECTED BY A COMPETENT**

GUNSMITH TO ENSURE IT IS STILL IN GOOD RUNNING CONDITION.

19. IF THE FIREARM FAILS TO FIRE WHEN THE TRIGGER IS PULLED – BE EXTREMELY CAUTIOUS! KEEP THE MUZZLE POINTED IN A SAFE DIRECTION IN CASE THE FIREARM DOES DISCHARGE AND WAIT AT LEAST 30 SECONDS TO ENSURE THAT IT IS NOT A DELAYED IGNITION CARTRIDGE. AFTER 30 SECONDS CAREFULLY REMOVE THE MAGAZINE, AND RETRACT THE BOLT TO UNLOAD THE FIREARM, AND SAFELY DISPOSE OF THE ROUND. CHECK THE BARREL TO ENSURE IT DOES NOT HAVE AN UNFIRED CARTRIDGE IN IT.
20. DO NOT ALLOW THE FIREARM TO BUILD UP EXCESSIVE HEAT BY RAPID AND CONTINUOUS SHOOTING. DOING SO MAY ALLOW THE FIREARM TO HEAT TO THE POINT THAT ROUNDS BEGIN TO “COOK OFF” IN THE ACTION. THIS CONDITION WILL ALLOW THE ROUND TO FIRE WITHOUT THE OPERATOR PRESSING THE TRIGGER. IT MAY ALSO CAUSE PREMATURE BARREL WEAR AND DAMAGE. PERIODICALLY ALLOW THE FIREARM TO TOTALLY COOL BEFORE CONTINUING TO SHOOT.

WARNING: SHOOTING FIREARMS IN POORLY VENTILATED AREAS, CLEANING THEM, AND HANDLING AMMUNITION, MAY RESULT IN EXPOSURE TO LEAD AND OTHER SUBSTANCES KNOWN TO CAUSE BIRTH DEFECTS, REPRODUCTIVE HARM, AND OTHER SERIOUS INJURIES. ALWAYS ENSURE YOU HAVE ADEQUATE VENTILATION WHEN SHOOTING AND CLEANING YOUR FIREARM. ALWAYS WASH YOUR HANDS WHEN YOU ARE THROUGH SHOOTING AND CLEANING YOU FIREARM, AND AFTER HANDLING AMMUNITION.

YOUR PURCHASE AND SUBSEQUENT USE OF THIS FIREARM DEMONSTRATES YOUR UNDERSTANDING AND AGREEMENT WITH THE PRECEDING STATEMENTS. AND YOUR PERSONAL ACCEPTANCE OF ALL RESPONSIBILITY FOR THIS FIREARM AND ITS USE.



CONGRATULATIONS ON YOUR PURCHASE OF THE CETME L!

We hope that this run of CETME L's will be one of the highlights of your military firearms collection. MarColMar Firearms LLC has taken great care to ensure the quality of its design, construction and production. We know you'll be pleased to own, display, and shoot the CETME L. While this manual uses the designation CETME L, everything in the manual is equally applicable to the CETME LC, and LV.

Just like its original full-auto cousin, the PATENT-PENDING Semi-Auto CETME L design was developed to be robust, simple, and easy to maintain. The CETME L was the only roller-locked military firearm for the individual soldier, specifically designed to fire the 5.56 / .223 cartridge, unlike the HK33 series that was based on the size of the original CETME C / G3's 7.62x51 receiver. We wanted this semi-auto copy to be as true to the original as possible, and be virtually indistinguishable from its full auto cousin. We believe that this has been achieved. Our initial production models have been extensively torture tested, with over 10,000 test rounds fired and counting.

THE CETME L, LC, LV PACKAGE:

You received the following in your semi-auto CETME L package:

- 1) Semi-auto CETME L, LC, or LV
- 2) 30 round STANAG magazine (where allowed by law)
- 3) Semi-Auto Manual for the CETME L
- 4) Translated Spanish CETME L manual
- 5) Action Lock
- 6) Brothers & Arms Oil
- 7) Custom Shipping Box

CETME L SPECIFICATIONS:

Your CETME L has been designed to be as faithful to the original as possible, but MarColMar has incorporated as many improvements in manufacturing (ex. our robotic welding station), and materials (ex. nitride, hammer-forged barrels) to improve the quality and reliability of the firearm. Below are the specifications of your new semi-auto CETME L, and if applicable, any changes that were made to the original design:

Ammunition: 5.56 / .223 Brass-cased SAAMI Spec.

Receiver: Laser cut blank, 4 station progressive die, 600 ton pressed, robotic welded, modified for STANAG magazine feed geometry

Barrel: 16", 1 in 7 twist, hammer-forged, nitride, fluted to original CETME specs, chamfered feed ramp / CETME LC length 12.6"

Magazine: STANAG AR-15/M-16 magazines

Rear Sight: Short range aperture I.D. increased for ease of vision and target tracking; sight adjustment dial changed to allow easier disassembly

Length:	As original: 37.5 inches, 26.2" LC Stock Collapsed
Width:	As original: 2.25 inches
Weight:	7.5 lbs. +/-
Furniture:	Nylon 66 molded in color, not polypropylene so much more resistant to UV, temperature extremes, and no degradation over time
Springs:	All spring strengths upgraded for better reliability, Chrome Silicon used for extractor spring to Increase life and heat resistance
Finish:	Cerakote - by Certified Installer onsite

CETME L HISTORY:

CETME, or the ***Centro de Estudios Técnicos de Materiales Especiales*** was established in Spain just after World War II. Its primary goal was to understand the use and development of small arms in WWII, and use this information to develop new arms for the Spanish military. They made great use of former German weapons developers and their wartime designs, especially those from Mauser.

One of these individuals was Ludwig Vorgrimmler, who along with other former Mauser employees, moved to Spain to continue their work at the end of the war. Their designs continued to follow the direction of the Mauser factory by utilizing the delayed blowback, roller-locking system of operation.



Their first rifle, the CETME 58/64/C, was officially adopted by Spain 1957. Originally designed for the German Sturmgewehr round, the 7.92x33 Kurz, it was then redesigned for the reduced power 7.62x51mm CETME, and finally chambered in the familiar 7.62x51mm that NATO had adopted. This rifle utilized the delayed blowback, roller-locking system. The CETME Modelo 58 was a great success, and was even subsequently licensed to Germany for their military use, designated the G3; for U.S. shooters and collectors this became better known as the HK91 series of semi-auto rifles.



In what to this day is still a hotly disputed move, in the late 60's and early 70's, NATO began to push its member countries to move toward the 5.56 round. The United States of course, moved to the M-16 platform. Heckler & Koch saw an opportunity to sell new 5.56 firearms to NATO countries, so they based their new 5.56 weapon

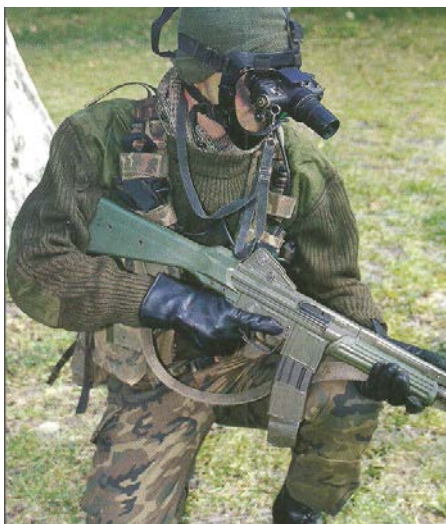


on the tried and true G3 platform. Starting with the G3 receiver, they simply shortened the G3's receiver and magazine well to fit the 5.56 round in their new HK33 model. They eventually did the same thing with the development of the

MP5, shortening the receiver yet again for the 9mm, and .40. A marginal success, it never saw widespread military adoption.

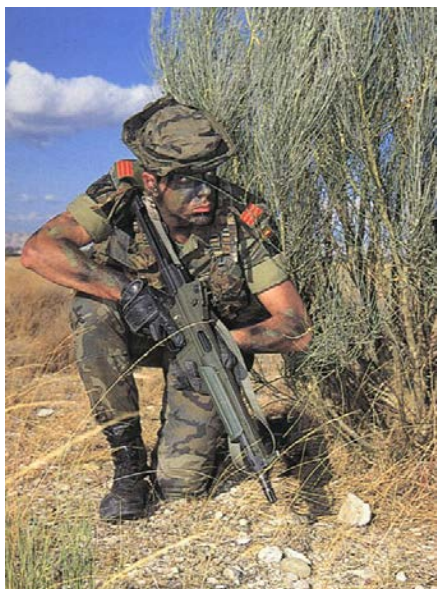
While there are other subtle changes between the designs (ejectors, hammers, etc.), the basis of the design of the HK33 and MP5 is still the G3; this is aptly demonstrated by the fact that the G3 bolt will fit into an HK33 and MP5 receiver.

Spain did not join NATO until May of 1982. Although they were still fielding the CETME C, they took note of the move to smaller calibers by militaries throughout the world, and had started research on a new weapon in the 1970s. However, with their impending membership in NATO, by the early 1980's, this effort dramatically increased in priority. CETME decided to design a totally new firearm instead of using the CETME Model C receiver as its starting platform. The result was the CETME Model L - the first and only roller-locking firearm designed specifically for the 5.56 / .223 round from the ground up.



Trials began in 1981-2, and the design was finally approved for production in 1984. The rifle was produced by the **Empresa Nacional Santa Bárbara** factory (or *Santa Bárbara Sistemas*) and initial deliveries began in 1987. While reports state that the Spanish military ordered about 60,000 rifles, it is believed that only approximately 50,000 were built.

Since the CETME L began with a clean slate, the receiver is much narrower, and the bolt and carrier are much smaller vs. the HK33 system. The net effect of



designing the gun for the 5.56/.223 round from its start, is a much thinner, and arguably quicker handling rifle than the HK33, and with much less felt recoil due to its lighter reciprocating mass. This is very easy to see when the CETME L is disassembled. The bolt, carrier, and rollers are all much smaller in relation to its German cousin.

The initial CETME L had a longer handguard and a protected rear sight with a familiar diopter setup like HK 9X series rifles (seen in the series picture below). However, these were dropped quickly after fielding the guns. The handguard tended to get very hot during firing, and the rear sight was deemed too expensive and hard to adjust for windage. The updated CETME L has the now familiar shorter handguard with the exposed heat shield, allowing

increased air flow for cooling, and the 200m and 400m two leaf rear sights.

The CETME L also saw its share of variants while in service with the Spanish military. The first, the CETME LC, was fielded in at least two barrel lengths, the standard "commando" configuration had a 12.6" barrel and a collapsible stock. There is also a "paratrooper" version of the LC, which retained the collapsible stock, but had the CETME L's longer 16" barrel. Due to the collapsible stock, both versions of the LC have a different mainspring assembly than the CETME L which does not have a buffer spring.

In addition, the CETME LV was fielded, and was given to designated marksmen – although reports from ex-Spanish military personnel maintain that they rarely if ever saw them in the field.

Spain



Cetme Modelo L



The LV was fielded in at least two models or variants, being differentiated by their rear sight setup. Two scopes were offered, and seem to be the determining factor for the type of scope setup on the receiver, the domestically produced ENOSA, and the British SUSAT. In addition, a night vision scope was offered, which could be mounted to either sight base. Both sight bases accepted standard STANAG scopes.

There were also ENOSA scopes with quick detachable mounts that were fitted to standard CETME L rear sights.

The only area of major combat the CETME L saw during its time in service, was during the Gulf War, when the Spanish served with Coalition troops in Kuwait. Information gathered from ex-Spanish military during our development, demonstrates that the troops generally liked the rifle and it was employed to great effect where ever they saw action. They liked that it was small, quick handling, and was generally reliable.

However, some troops did have issues. Most did **NOT** like the magazines that were issued with the rifle, as well as the ammunition (see the information in the *Magazine* section of this manual), which were the cause of most of the issues experienced with the CETME L.



The CETME continued to serve with the Spanish military until 1999, when it was largely replaced by a license-built variant of the HK G36E, due to reportedly aggressive pricing by HK. CETME L's continue to be used by Police and are in stock with Reserve Units to this day.



When Spain decided to surplus its CETME L's, we were the lucky beneficiary of the sale. The CETME L will likely be the most modern military arm to be sold as surplus *en masse* to the market, due to draconian EU and UN sponsored rules for weapons parts sales.

The CETME L's history as a semi-auto rifle for the U.S. Market is now just beginning. Over the course of two years, and two million dollars, MarColMar Firearms has worked to bring this firearm to the collectors and shooters of the USA. While we made every effort to be as faithful to the original as possible, where ever there was an opportunity to increase quality, reliability, and functionality with newer materials and production methods, we did so. Through extensive high-speed photography and analysis of the CETME L's timing and bolt velocities, we were able to add to its reliability and functionality, in order to ensure you have the best rifle we can possibly provide. Thank you for purchasing our CETME L, and we hope you will safely enjoy it, and that it will be proud to addition to your collection. REMEMBER to stay ever vigilant and guard our freedoms for not only you, but future generations.



AMMUNITION:

The MarColMar CETME L has been designed for SAAMI Spec. 5.56 / .223 ammunition. With its 1 in 7" barrel twist, 62 grain bullets are preferred, but 55 grain can be used as well. We recommend only brass-cased, copper-jacketed ammunition be used for the CETME L. NEVER use lacquered steel case ammunition as the lacquer can flow and fill the barrel flutes.

You may notice that lower power ammunition will tend to make spent cartridges eject in wider patterns, and closer to the shooter, than hotter makes of ammunition, which will tend to be ejected much farther and in a more consistent pattern.

For warranty purposes, the barrel and the extractor / extractor spring are normal wear items, as with any other firearm. MarColMar does not warranty barrel or extractor wear.

IMPORTANT BREAK-IN INFORMATION:

It is not unusual for firearms to need a break-in period after manufacture. While milled firearms require more rounds, stamped guns also require a short period of break-in. Each CETME L is test-fired at our facility to ensure proper operation, extraction, and ejection. We suggest that you only use high-quality, brass-cased, copper-jacketed ammunition for all shooting sessions, as well as new high-quality STANAG AR-15/ M-16 magazines.

You may encounter a few failures to feed, or eject during an initial period. If such an issue persists, check your magazines and ammunition first. This is generally the issue with any functioning problems. If this does not cure the problem, ensure that the rifle has sufficient lubrication. If there is still a problem, contact us at MarColMar.

PARTS:

Your Semi-Auto CETME L was made utilizing good to excellent condition CETME L parts secured from the Spanish military, as well as new U.S. made parts. As these surplus parts were good to excellent military surplus kits, they did exhibit finish wear and use. MarColMar inspected each kit, and all the parts to ensure their use in the new rifle would be acceptable.

Bear in mind however, this is NOT a high-grade Browning or Beretta hunting rifle, but a collectible military firearm that had been through arsenal inspection and possibly even rebuilds over time. However, every effort was made to ensure the quality and consistency of each build, despite using surplus parts. This allows the best CETME L to be made available at the lowest price for you the shooter and collector.

FINISH:



MarColMar has gone to great lengths to provide the highest quality of finish for the CETME L, working directly with Cerakote and installing a commercial oven and cross-draft paint booth to ensure consistent quality. As with the originals, MarColMar paint fills the markings on the receiver. This paint is standard white

or black enamel paint, and thus should be protected from gun solvents. While Cerakote is one of the best finishes on the market, it must still be protected from abrasion and abrasive surfaces, and should still be oiled to reduce the potential of corrosion both on the inside and outside of the rifle.

922(r) COMPLIANCE:

Title 18 Chapter 44 Section 922(r) of the United States Code, defined further by Title 27 Part 478.39 of the Code of Federal Regulation (CFR), makes illegal the manufacture and assembly of semi-automatic rifles and shotguns using any more than 10 imported parts.

Twenty total parts are included in this regulation. We have marked the imported parts your CETME L uses, this serves to document its compliance with 922r:

(1) Frames, receivers, forgings or stampings	U.S. Made
(2) Barrels	U.S. Made
(3) Barrel extensions	Not Applicable
(4) Mounting blocks (trunnions)	Imported
(5) Muzzle attachments	Imported
(6) Bolts	Imported
(7) Bolt carriers	Imported
(8) Operating rods	Not Applicable
(9) Gas pistons	Not Applicable
(10) Trigger housings	U.S. Made
(11) Triggers	Imported
(12) Hammers	Imported
(13) Sears	Imported
(14) Disconnectors	Imported
(15) Butt stocks	U.S. Made
(16) Pistol grips	U.S. Made
(17) Forearms, hand guards	U.S. Made
(18) Magazine bodies	U.S. Made
(19) Followers	U.S. Made
(20) Floorplates	U.S. Made

Your CETME L uses only 8 imported parts, putting it well within the limits of 922(r). Any use of imported parts that take this count above 10, would violate 922(r).

ATF DESIGN APPROVAL:

MarColMar Firearms submitted this design to the ATF Technology Branch, and received approval for its design as a semi-auto firearm on 11/15/2017. This approval was received due to our design elements that eliminate the possibility of converting the CETME L to full-auto operation. These steps include the welding of a blocking plate inside the receiver, and the removal of the auto-sear from the lower fire-control assembly. This blocking plate will not allow the installation of an original lower fire-control assembly. In addition, ATF affirmed the 922(r) imported parts count that is outlined above.

MAGAZINES:

The original CETME L was issued with a Spanish magazine that utilized a thicker steel construction, had a different follower design, and had a different feed geometry than our aluminum STANAG AR-15/M-16 magazines. Unfortunately, this Spanish magazine was poorly designed, and very inconsistent in its manufacture. These magazine issues, as well as poor quality control with the Santa Barbara ammo used during Desert Storm (far too hot), caused the CETME L to have some operational issues in its combat deployment.

These issues were actually addressed in country by Spanish soldiers who began picking up discarded M-16 STANAG magazines, or even trading with U.S. Soldiers for STANAG magazines and U.S. sourced ammunition, which readily addressed the CETME L's issues. This became so widespread, Spanish troops were reportedly threatened with discipline and required to pay for their "lost" magazines, if they were found using U.S. STANAG magazines and foreign ammunition with their CETME Ls.

MarColMar Firearms understood this issue, and addressed this with the CETME L. Although STANAG magazines functioned with original CETME Ls, it was not a perfect solution. Through the use of high-speed video and photography, we analyzed bolt velocities, different ammunition loads, and magazine feeding, and changed the magazine angle, feed geometry, and added a barrel chamfer, to better match that of the STANAG magazine, and aid in smoother loading.

For this reason, we only recommend you use a new or like new milspec STANAG magazines with your CETME L. For those who are unfamiliar, a STANAG magazine is constructed of aluminum, with no texture or surface features on the magazine body, just like the one provided in your package.

A NOTE ON STANAG MAGAZINES: Please note that **NOT ALL STANAG MAGAZINES ARE CREATED EQUAL!** Due to the popularity of PMAGS and other polymer magazines, many STANAG magazine manufacturers are not maintaining their dies and thus the cutout that locks the magazine in the firearm, is now out of spec. This may not be a problem with the AR mag-well due to its design, but the long magwell and design of the CETME L makes the placement of this feature very important. We actually tested many new STANAG magazines during development, and found out-of-spec tolerances from brand new magazines. One manufacturer when questioned, even admitted to being out of spec. In addition, well used aluminum STANAG magazines may also have wear in the lockup cutout, which could cause problems.

For these reasons, we recommend new AR-15/M-16 STANAG magazines be used with your CETME L, from the same provider we have packaged with your rifle.

Finally, PMAGS and many other polymer magazines will not work with your CETME L due to the angled mold line that corresponds to the bottom of the AR-15/M-16 mag-well. If this molding feature is removed, we have successfully used PMAGS in the CETME L.

If you need magazines, just contact us at MarColMar or go to our website online, and we'll have extras for sale.

PARTS IDENTIFICATION:

Use the diagram below, to identify the common parts that this manual refers to, in the overview of the CETME L's operation:



LOADING THE CETME L:

Loading a STANAG magazine is easy due to its double stack configuration. Simply place a round on top of the magazine's feed lips, and press downward, ensuring that the round is under the lip and fully to the rear.

Just like the military, we do **NOT** recommend that you load more than **28 rounds** in a 30-round magazine. Based on the magazine's manufacture, "over-loading" the magazine can cause feeding and ejection problems, or cause issues with the magazine securely locking into the rifle.



SAFETY: First place the rifle on SAFE, by simply rotating the Safety Lever up to the “S” setting on the receiver. **NEVER RELY ON THE RIFLE’S SAFETY FOR YOUR SAFETY. UNLOAD THE GUN WHENEVER YOU ARE NOT ACTIVELY FIRING, DO NOT STORE IT LOADED OR WITH AMMUNITION.**



BOLT: Then pull back on the charging handle, located on the left side, near the front of the rifle...



While holding the charging handle, press the bolt hold open located on the right side of the rear sight, to lock the bolt to the rear. Slowly release the charging handle until you can feel the bolt lock back under pressure from the mainspring and held by the bolt hold open. Once locked back, **NEVER** place your hand or fingers inside the ejection port, as the bolt could come unlocked and cause injury (see the following pic).



Now insert a loaded magazine (with the bullets pointed toward the muzzle) into the magazine well, and push up until the magazine release locks into the magazine. **DO NOT PUSH TOO HARD**, as you could cause the magazine to travel too far into the mag-well and jam into the receiver. Just push until the magazine lock engages.



BE SURE TO ONLY CHARGE / LOAD THE GUN WITH THE BARREL POINTED IN A SAFE DIRECTION! SHOULD A SLAM FIRE OCCUR (ROUND FIRES WHEN LOADING) IMMEDIATELY STOP USING THE GUN AND CONTACT US! IN ADDITION, SHOULD THE GUN EVER DOUBLE OR RUN AWAY, THIS INDICATES DAMAGED COMPONENTS! DISCONTINUE USE OF THE GUN AND CONTACT US IMMEDIATELY!

NOTE: Once the magazine is fully inserted into the gun, you should always use the bolt release button, on the left side of the rear sight, to load. This will allow the bolt to close with the full force of the mainspring and buffer spring. Using the charging handle to allow the bolt to move forward may result in the bolt and carrier not fully moving forward, and the rollers not fully engaging into the trunnion! (see the following pic).



FIRING THE CETME L:

Now with the loaded magazine in the rifle, and the bolt fully closed, provided you are aimed at an appropriate target, with a suitable backstop, you may rotate the safety lever down to FIRE or "F", take a sight picture, and pull the trigger. You will feel a light recoil sensation, and see the expended cartridge eject from rifle.

WARNING: EXCESSIVE RAPID FIRING OF THE CETME L WILL CAUSE PREMATURE BARREL / RIFLING WEAR. The CETME L was designed by the Spanish to be a lightweight, easily carried and fast-handling rifle. As such the barrel O.D. is very thin, very much like a pencil barrel AR-15/M-16. We do not recommend firing more than two back-to-back magazines in rapid succession, without allowing the barrel time to cool off. As an original machine gun, the CETME L is designed to be shot in bursts, but continuous rapid fire will negatively affect overall barrel life.

As your rifle wears, you may begin to experience extraction and ejection issues, as primarily the extractor spring wears (approx. 6k to 8k rounds). If a replaced extractor spring does not fix the issue, you may also have a worn extractor and/or ejector. Evidence of wear in these components can be seen when ejected cases fail to fully clear the ejection port. This is a natural result of firing wear, and is addressed by first replacing the extractor spring. If that does not address the issue, the extractor and/or ejector may need to be replaced.

DISASSEMBLY / ASSEMBLY:

STEP 1: REMOVE THE MAGAZINE FULLY FROM THE RIFLE

Press the magazine release, and remove the magazine from the rifle (see the following pic).



STEP 2: PLACE THE RIFLE ON SAFE

Rotate the Safety Selector to SAFE by pushing it up to the “S” position.



STEP 3: SHARPLY PULL BOLT HANDLE TO THE REAR

With force, pull the bolt handle to the rear, to clear any unfired round in the chamber. You may want to cycle the action several times (see the following pic).



STEP 4: LOCK BOLT TO REAR USING BOLT HOLD OPEN

Press the bolt hold open, on the right side of the rear sight, while holding the charging handle to the rear. Slowly move the bolt handle forward until you can feel the bolt hold open catch the bolt and carrier.



STEP 5: INSPECT THE CHAMBER TO ENSURE RIFLE IS UNLOADED

Look into the action to ensure there is no unfired round in the barrel. If you cannot fully see into the action, use a light to illuminate the chamber. If you see an unfired round, while keeping the rifle pointed in a safe direction, press the bolt release on the left side of the rear sight, and allow the bolt to close. Once closed, pull back with force on the bolt handle to eject the round.

If it still does not come out of the barrel, WITH GREAT CARE continue these steps to fully break down the gun, and **DO NOT UNDER ANY CIRCUMSTANCE PULL THE TRIGGER!** (see the following pic).



STEP 6: PUSH THE BOLT RELEASE TO ALLOW THE BOLT TO MOVE FORWARD DO NOT PULL THE TRIGGER!



STEP 7: REMOVE THE BUTTSTOCK PINS

Push on both rear pins and remove them from stock.



STEP 8: STORE THE BUTTSTOCK PINS

So you don't lose the pins, place them in their keepers, on either side of the rear sling attaching plate. (see the following pic).



STEP 9: PULL BUTTSTOCK AND MAINSPRING TO REAR

Remove the buttstock and mainspring from the rifle.



STEP 10: REMOVE MAINSPRING ASSEMBLY

Remove the mainspring from the buttstock (see the following pic).



STEP 11: INSPECT MAINSPRING BUFFER ASSEMBLY

Every time you disassemble, check to ensure that the buffer nut is fully seated on the rear of the mainspring! If this nut ever begins to come loose, you will notice a sharp increase in recoil in the CETME L, and eventually stock damage may occur. Always check to make sure the nut is flush with the end of the shaft. This part should have **LOCTITE®** (Blue 242) on it, and remember despite what the internet may say, this **IS NOT AN ADJUSTMENT**. Simply ensure the nut and bolt are flush.

NOTE: For the CETME LC there is no buffer spring, simply, make sure the nut is flush with the end of the guide rod.



STEP 12: PULL BOLT HANDLE TO REAR TO REMOVE BOLT AND CARRIER

With care, gently pull the charging handle to bring the entire bolt and carrier to the rear for removal from the receiver (see the following pic).



STEP 13: REMOVE BOLT FROM LOCKING PIECE

With your hand, or the help of a screwdriver, as you are looking at the bolt face, rotate the bolt head counter clockwise, until it releases from the bolt latch.



STEP 14: REMOVE THE LOCKING PIECE

Carefully turn the locking piece until it removes from the bolt latch and carrier.
WARNING: THE FIRING PIN AND FIRING PIN SPRING ARE UNDER PRESSURE BEHIND THE LOCKING PIECE. TAKE CARE WHEN YOU ARE REMOVING, (see the following pic).



Then remove the firing pin and spring.



STEP 13: (OPTIONAL) REMOVE HANDGUARD PIN

While not required for routine cleaning, you may remove the handguard as well, first push the pin out of the handguard (see the following pic).



STEP 14: (OPTIONAL) ROTATE SLING SWIVEL FULLY UP

Rotate the sling swivel fully upward so it will clear the handguard.



STEP 15: (OPTIONAL) PUSH HANDGUARD FORWARD AND ROTATE DOWN TO REMOVE

Push on the rear of the handguard until it will clear the trunnion, then pull down to remove. (See the following pic).



STEP 16: (OPTIONAL) REMOVE HAMMER PACK PIN

If you desire to remove the hammer pack, push the pin out of the front of the pack. Note that the pin always goes in from the left side!



STEP 17: (OPTIONAL) PULL HAMMER PACK TO REAR

With the pin out, push or pull on the pistol grip toward the rear of the receiver until it will not move any further. This will align the safety selector hole with the “egg” shaped hole in the receiver (see the following pic).



STEP 18: (OPTIONAL) ROTATE SAFETY SELECTOR TO FRONT

Now rotate the safety selector through the FIRE position, and forward so the thumb rest is pointed forward.

STEP 19: (OPTIONAL) PRY SELECTOR UPWARD AND OUT

With your fingers pry up and move the selector back and forth a small amount to begin to pull it from the hammer pack. There is a fair amount of manipulation required, especially until the rifle fully breaks in. When the safety selector is removed, the hammer pack is free of the receiver.



STEP 20: (OPTIONAL) REMOVE HAMMER PACK

Pull the hammer pack down to remove it. With the hammer pack removed, you may clean and oil it to ensure that it remains in top operating condition (see the following pic).



We do not recommend grease or large amounts of oil. Simply put oil into the areas that have friction or pivot for operation. Take the time to inspect your hammer spring as well. **We do not recommend any further disassembly of the hammer pack for routine maintenance.**

Several wear items are in the hammer pack. The hammer spring, trigger spring, and ejector spring are components that will eventually need replacing with wear and use of the CETME L. This does not indicate a problem, just normal wear-and-tear. If you experience a failure in the hammer pack, or the need to replace components, get in touch with us for replacements, and/or repair services.

WE DO NOT RECOMMEND ANY FURTHER DISASSEMBLY OF THE CETME L.

REASSEMBLY:

Reassembly is done by doing the steps above in reverse. **However**, there are some helpful hints and needed steps for reassembly:

1) **IMPORTANT!** When reassembling the rifle, put the bolt and carrier into the receiver before putting the hammer pack in. If you do not, in order to put the hammer pack in, you will need to use a tool or your finger to push the hammer down so it clears the bolt carrier as it is inserted into the receiver. This is due to the ATF's insistence that all safety sears be removed from military semi-auto conversions.

2) If during reassembly, you find that the rollers are out in the locked position, and the bolt and carrier will not go back into the receiver, simply take a screwdriver and rotate the bolt head 90 degrees, pull it forward while pushing the rollers in, and then rotate it back to its proper orientation (see the following pic).



3) When replacing the hammer pack into the rifle, it is important to ensure the safety selector is properly seated. After the safety selector has been seated and rotated to the FIRE position, push down on the safety selector as you push the pack forward to align the holes for the pin. If you do not, the safety selector may hang up on the receiver and not allow it to fully move forward and allow the hammer pack pin to go back in.



4) Like the FAL and Sig 55X series of rifles, the CETME L will mark the ejection port area with the ejected cartridges. Contrary to popular belief, the ejection port flare is only there as added protection to keep an odd cartridge from hitting the shooter, not the side of the receiver. Due to this, if you want to keep your CETME L looking its best, we recommend you apply black tape or Velcro with adhesive to the area just below, and just behind the ejection port, whenever you shoot the CETME L (see the following pic).



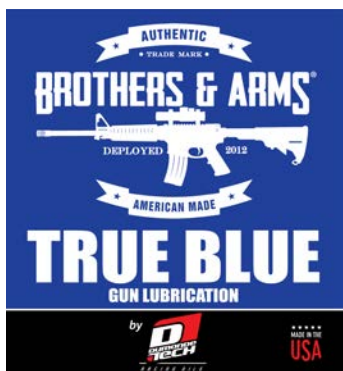
For additional information on the CETME L, consult the translated Spanish CETME L manual on the backside of this manual. Inside the translated Spanish manual is background information you may find interesting and helpful!

CLEANING & LUBRICATION:

Although roller-locking guns are incredibly reliable, they are notoriously dirty after firing. Make sure the CETME L is thoroughly cleaned after each shooting session! We recommend using only top-quality cleaning solvents and materials from reputable manufacturers. Once disassembled the Semi-Auto CETME L is easy to clean and maintain. Clean all of the components that come in contact with the residue from firing the gun, these include the barrel, flash hider, bolt carrier, bolt, rollers, and locking piece. Once cleaned, use a quality solvent like Hoppes #9 or similar.

The barrel is nitrided, but does need to be thoroughly cleaned. With a roller locking firearm, it is imperative to make sure the chamber flutes are very clean and free of any obstruction. We recommend thoroughly cleaning the barrel with a copper brush, and then a .223 jag and patch, alternating solvent and dry, until the patch comes out clean.

We recommend that ALL barrel cleaning be done from the rear or chamber end of the barrel. After disassembly just run the cleaning rod in from the rear of the receiver. As a final measure, spray the entire firearm with a light coating of oil and wipe with a dry cloth. This includes the inside of the receiver! After reassembly test the function of the firearm. If it sounds right and looks right, it probably is!



With your CETME L you received a sample bottle of Brothers & Arms True Blue oil. We recommend Brothers and Arms® TRUE BLUE Gun Oil for our weapons, with its low coefficient of friction, it has proven performance in extreme conditions from sub-zero temperatures to hot and dusty climates.

Ensure that at a minimum the bolt head, bolt carrier, firing pin, locking piece, and the bolt rails have lubrication, as well as all surfaces inside the receiver.

USE OF THE SIGHTS:

NOTE: Everyone sees sights differently. Your CETME L was test fired and preliminarily sighted during production. However, you may need to adjust the sights to fit your physiology and shooting style. You may do so by manipulation of the rear sight for windage, or by adjustment of the front sight up and down for range.

The rear sights are windage adjustable. To do so, simply use the end of a cartridge and press the detent in, and move the dial to move the sight. Moving the dial clockwise (facing the dial) will move the point of impact to the right. Moving the dial counter-clockwise will move the point of impact to the left.



The front sight is adjustable for range. Moving the front sight clockwise (when looking down at the front sight) will lower the front sight, and raise the point of impact. Moving the front sight counter-clockwise will raise the front sight, and lower the point of impact.



The general rule is that the rear sight is moved in the SAME direction you wish to move the point of impact, while the front sight moves the opposite direction.

You can use a normal M-16 front sight adjustment tool for this. **PLEASE NOTE:** The front sight was changed from the original. The detent now interfaces on the bottom of the front sight, not in its original 4 positions around the outside of the dial. This was done to allow more precise adjustment, and standardization of the front sight blade. As a result, the detent does not lock into the four openings in the front sight, they are just there to accept an adjustment tool.

MALFUNCTIONS AND TROUBLESHOOTING:

In the event of a malfunction or failure to fire, your first priority is to keep the firearm safe. **IF THE FIREARM FAILS TO FIRE WHEN THE TRIGGER IS PULLED – BE EXTREMELY CAUTIOUS! KEEP THE MUZZLE POINTED IN A SAFE DIRECTION IN CASE THE FIREARM DOES DISCHARGE. WAIT AT LEAST 30 SECONDS TO ENSURE THAT IT IS NOT A HANG FIRE / DELAYED IGNITION OF THE CARTRIDGE. AFTER 30 SECONDS CAREFULLY OPEN THE ACTION, UNLOAD THE FIREARM, AND SAFELY DISPOSE OF THE ROUND.**

In the Spanish manual you will find a chart of common malfunctions of the CETME L, we recommend that you make yourself familiar with them. In addition, through our testing we found a couple of common occurrences you may encounter as the CETME L wears:

Due to how the bolt carrier interfaces with the cocking piece of the charging handle, from time-to-time a cartridge may bounce into the area and become jammed between the two. Drop the magazine and clear the rifle first. Then pull the charging handle to the rear and lock the bolt. You may then clear the cartridge (see the following pic).



Second you may have a jam between the bolt head and the cartridge. Just as before, first drop the magazine and clear the rifle. Then pull the charging handle to the rear and lock the bolt. Finally clear the cartridge.



Both of these issues may be experienced as your extractor spring, extractor, and ejector begin to wear, or could be due to weak ammunition, dirty flutes in the barrel, or even a bad magazine. We recommend you check for any and all of these conditions and rectify if identified.

STORAGE:

Whenever you store your CETME L, we recommend you **ALWAYS** use the action lock that was provided. With your finger off of the trigger, and the rifle on SAFE "S", simply remove the magazine, and pull the bolt to the rear. Visually check to make sure there is no cartridge in the receiver. If not clear, remove the cartridge.

Once clear, lock the bolt to the rear. Now with the lock unlocked, drop the end of the cable through the ejection port until it comes out of the magazine well. Lock the cable into the lock and remove the key. Test to make sure the lock is secure.

Now with the charging handle, **NOT** the bolt release, pull the charging handle to the rear until you feel the bolt, and slowly move the bolt forward until it contacts the cable near the front of the ejection port. Do not leave the bolt locked at the rear, it can prematurely wear the mainspring.

When complete your CETME L is secure. Place the key in a safe and secure location. We further recommend that you **DO NOT** store ammunition and magazines with your CETME L.



LIMITED WARRANTY:

In the event of a problem with your Semi-Auto CETME L, LC, or LV, you must contact MarColMar Firearms LLC, PO Box 1523, Richmond IN. 47375 at (765) 983-8200 or via the web at sales@marcolmarfirearms.com. In order for the warranty to be valid, the original purchaser must complete the enclosed warranty card and mail to MarColMar Firearms LLC within 30 days of receipt, **or fill out the online warranty registration at www.marcolmarfirearms.com.**

MarColMar Firearms LLC warrants the Semi-Auto CETME L for a period of 1 year to the original retail purchaser. This Limited Warranty covers any issue or problem caused by a Manufacturer's Material Defect on the Semi-Auto parts, or Manufacturer's workmanship. Wear-and-tear, finish, failure due to ammunition, improper use, improper maintenance, and issues with original parts are not covered. Accessories, and Acts-of-God are not covered under this warranty. The owner is responsible for all shipping costs in the event of a warranty claim. Manufacturer reserves the sole right to make such determination from an examination of the firearm.

SPARE PARTS / SERVICE:

MarColMar Firearms will continue to provide support and spare parts for the CETME L for some time. HOWEVER, don't be caught short handed. We encourage you to buy spare springs, extractors, and barrels so that you can properly maintain your rifle for years to come. Simply visit us at www.marcolmarfirearms.com to find a full selection of parts.

THANK YOU!

Thanks once again for your purchase of our Semi-Auto CETME L, LC, or LV. MarColMar Firearms LLC thanks you for supporting us, the firearms industry, and for keeping the military gun collecting and shooting passion alive. Pass it down to the next generation and be sure to tell them why it's important to exercise and protect this crucial liberty! In Liberty!

Dave Bane
Owner – MarColMar Firearms

**NOTE: IF YOU LOSE THIS MANUAL AND EVER NEED A REPLACEMENT,
JUST GIVE US A CALL AND WE'LL GET ONE RIGHT OUT!**



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ASSAULT RIFLE - CETME 5.56 "LC"



MODEL "LC"

Grenade Launcher Attachment



View of different bolt carrier
without the larger recess for the
mainspring

CHARACTERISTIC DIFFERENCES VS. THE MODEL "L"

Basically the operation of the "LC" model is identical to what has already been described for the "L" model. Only a few differences can be seen that make it suitable for special use.

Rate of Fire:

Length:

Barrel Length

Length of Sight

Muzzle Velocity

650 to 800 rpm.

26.18 inches (with collapsed).

33.86 inches (with stock extended).

12.60 inches.

17.32 inches.

2,729 fps.



View of extended stock

- No attachment provision for knife bayonet.
- No buffer spring.
- Has a collapsible stock.
- Bolt handle does not have cocking extension.
- Grenade launcher must be attached to muzzle to launch grenades or gas.

ASSAULT RIFLE - CETME 5.56 "L"

MOST FREQUENT INTERRUPTIONS

GENERAL

Most interruptions in the operation of the assault rifle are due to either inexperienced handling of the weapon, and more frequently defective cartridges or magazines that are damaged due to improper handling.

Whenever a cartridge does not fire, it is necessary to wait approximately 15 seconds before trying to correct the condition. The first thing that should be done is to remove the magazine.

To correct the problem, it is usually sufficient to pull the bolt back by hand, and do the following:

- 1) Remove the magazine.
 - 2) Pull back the charging lever in order to eject the defective or jammed cartridge from the weapon.
 - 3) Check that nothing is left in the bore or in the chamber of the barrel.
 - 4) Release the charging lever to allow the bolt and carrier to move freely forward; do not hold it while it returns to battery.
 - 5) Replace the magazine.
 - 6) Quickly pull back on the charging lever, and release it, to load a new cartridge into the chamber.
 - 7) Resume shooting.
- Shooting interruptions are not frequent if the weapon is clean and well oiled. The following table details the interruptions, their causes, and how to properly correct them.

INTERRUPTION	CAUSE OF INTERRUPTION	WAYS TO RESOLVE
Weapon will not fire when pulling the trigger	Ammunition is not properly loaded	When loading with the charging lever, do not hold the lever while the bolt and carrier move forward. The lever must be pulled back strongly and sharply released. If the bolt and carrier do not fully move forward and into the locked position, if this does not fix the issue, remove the magazine and reinsert to replace it when the issue is fixed.
Cartridge will not properly load	<p>1) The cartridge is stuck between the Magazine and the feed ramp.</p> <p>a) Due to poor placement of the cartridges in the magazine, or the magazine is not properly locked in the magazine.</p> <p>b) By a damaged magazine.</p> <p>2) Trunnion is dirty or bolt head is dirty not allowing the action to lock.</p>	<p>1) a) Remove the magazine and hit the back of the it several times with the palm of the hand to correct the position of the cartridges. If not fixed, empty the magazine and reload it.</p> <p>b) Change the magazine.</p> <p>2) Clean these pieces.</p>
Failure to fire.	<p>1) Cartridge is defective, moisture in the primer or gunpowder.</p> <p>2) Broken hammer.</p> <p>3) Hammer spring is weak.</p> <p>4) Dirty roller housing.</p>	<p>1) Remove the magazine.</p> <p>Check the protrusion of the firing pin through the bolt head. Insert a cartridge manually into the chamber and shoot. Repeat the operation with other cartridges. If they do not fire, change the batch of ammunition. If not fixed, the cause will be found in 2, 3, or 4</p> <p>2) Change the hammer.</p> <p>3) Change the hammer spring.</p> <p>4) Thoroughly clean the roller housing in the bolt head and the roller recesses in the trunnion.</p>
Failure to extract	<p>1) Sticky chamber.</p> <p>2) Broken extractor</p> <p>3) Loss of spring power in the extractor spring.</p>	<p>1) Thoroughly clean the chamber and flutes (pour a drop of oil externally to the recess).</p> <p>2) Change the extractor.</p> <p>3) Change the extractor spring.</p>
Failure to eject.	<p>1) Dirt in the chamber, bolt head, and locking piece or the rails that reduce the force of the cartridge on the ejector.</p> <p>2) Broken ejector lever.</p>	<p>1) Cleaning as indicated in Section 1 under daily extraction.</p> <p>2) Change the ejector lever.</p>

ASSAULT RIFLE - CETME 5.56 "L" & "LC"

MAINTENANCE AND CLEANING:

GENERAL

The weapon must be kept in perfect condition by detailed cleaning, where all parts exposed to gases during firing are thoroughly cleaned within 24 hours.

The use of emery cloth or other abrasive materials that may scratch the finish, is prohibited.

If the rifle is so dirty that it cannot be removed by rags or cleaning jags, the pieces should be immersed in non-corrosive solvent until clean, and thoroughly dried afterward.

Once cleaning is complete, the preservation of the weapon, as well as good operation, is dependent on a light application of oil.

Excessive use of grease is not required, and is to be avoided in dusty environments and low temperatures. It is sufficient to lightly oil the rollers, the bolt head, and the locking piece, as well as the extractor and the pivot points of the components in the firing mechanism.

CLEANING THE BARREL

Proceed as follows:

- Clean the chamber with the brass wire brush, repeatedly pushing the brush in and out of the chamber, to fully clean the flutes.

- Repeat this with the nylon brush.

- Clean the bore with the wire brush first, and then the nylon brush.

- Pass the wool tool through the chamber and bore, smeared with a light application of oil.

CLEANING THE TRUNNION

With the steel wire brush, turn it clockwise and counterclockwise until the inside of the trunnion is thoroughly cleaned, especially the roller recesses.

CLEANING THE REST OF THE WEAPON

After shooting, disassemble the bolt group, and clean the parts with a cotton cloth soaked with solvent. Dry and lightly oil.

The rest of the weapon can be cleaned with a cloth lightly soaked with solvent, then dried and followed by a cloth with oil.

LUBRICATION

Oil is required after cleaning in order to protect the weapon and ensure its proper functioning.

Grease is essential for areas that are oxidized, or in places that have tight tolerances or have lots of friction and movement.

Oiling can become detrimental if the following rules are not followed:

- No part that is not perfectly clean and free of moisture, should be oiled.
- If the weapon is not used for some time, it is essential to re-oil to keep it preserving the weapon.
- Excessive oil is not good. A drop of oil in each roller and between the bolt head and locking piece is sufficient for operation.
- In rainy and humid circumstances or environments, grease should be maintained on metal pieces, both inside and out. A light layer of oil on a cloth should also be occasionally used to wipe the weapon.
- In general, all moving parts of the weapon, and areas with friction, should be lightly oiled. A few drops are enough on the bolt and carrier, springs, and firing mechanism.
- In dry and dusty conditions and environments, deserts, etc., an excessively oiled weapon is more prone to interruptions and failures than being dry and clean without any oil or grease.

ASSAULT RIFLE - CETME 5.56 "L"

ASSEMBLY AND DISASSEMBLY OF WEAPON:



DISMANTLING INTO SUBCOMPONENTS.

- Remove the magazine if in weapon.
- Make sure there is no cartridge in the chamber. To do this, pull the bolt handle backwards and after ensuring the chamber is empty, release so that the bolt closes.
- Remove the two rear stock pins and place in the rear holes on either side of the sling attachment.
- Move the mainspring assembly.
- Pull back on the bolt handle and remove the bolt and bolt carrier assembly.
- Remove the hammer pack pin. Push the pistol grip until it reaches its stopping point (approximately .060 inches). In this position the selector can clear the receiver. Pull the selector upward perpendicular to the axis of the weapon.
- Remove the handguard pin, move the handguard parallel to the barrel in the direction of the muzzle, and then downward, turning the sling ring up to avoid interference.

DISASSEMBLY OF THE FIRING MECHANISM.

It is not necessary to disassemble the firing control mechanism for normal / routine maintenance. It should only be dismantled by trained personnel, and only when it is strictly necessary to correct damage or a broken part.

DISASSEMBLY AND ASSEMBLY OF THE BOLT AND CARRIER.

To disassemble the bolt and carrier, proceed as follows:

- Press the bolt head in toward the carrier until it stops, then turn the bolt head half a turn to the left, and in this position pull it to separate it from the locking piece.
 - Turn the locking piece and remove it with the firing pin and spring.
- The assembly is done following the reverse of the process outlined above.

ASSEMBLY OF THE WEAPON.

- Put on the handguard, push it over the trunion and align and place the pin.
- Place the firing pack into the receiver and align the selector. Put the selector in and rotate to firing position. Push the firing pack forward and replace the pin.
- Insert the assembled bolt and carrier into the receiver until the rear of the carrier just protrudes from the receiver.
- Place the mainspring into the back of the carrier and allow it to move fully forward.
- Replace the pins in the buttstock.

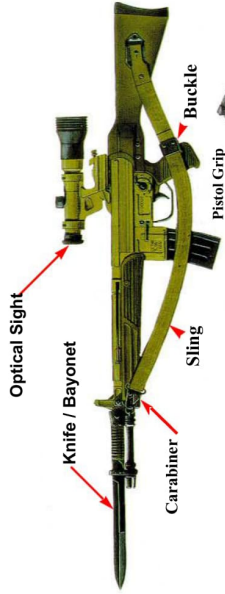
CHECK THE WEAPON.

Place the thumb rest of the selector into the "T" or "R" position, and pull the trigger. The gun must close and lock, and when the trigger is pulled, the hammer should be heard striking the rear of the firing pin.

NOTE: Only disassembly and assembly operations which are necessary for the normal maintenance of the weapon, are included in this chapter.

ASSAULT RIFLE - CETME 5.56 "L"

ACCESSORIES AND AMMUNITION:



MAGAZINE: Stamped sheet metal. Versions issued for 12 & 30 round capacities.

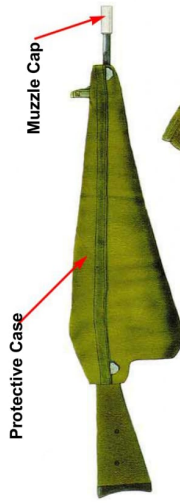
SLING: Made of polyester, it features an attachment clip on one end, and a buckle to regulate overall length.

CLEANING KIT: The cleaning kit is stored in the canvas carrier designed for the 12 round magazine. It contains cleaning attachments a) chamber brush, b) bore brush, c) wool swab, handle, and pull cable.

MUZZLE CAP: Made of plastic. It protects the inside of the barrel from dirt. While it should be removed before firing, if forgotten, it does not present a danger.

PROTECTIVE CASE: The case is used to keep the weapon in serviceable condition, when stored for long periods of time, or to protect it from adverse conditions such as dust or sand.

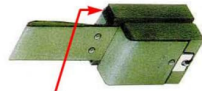
KNIFE - BAYONET: The bayonet is attached by a latch located on the heel of the bayonet, and a recess which fits over the bayonet lug on the front of the sight tower.



SHEATH FOR BAYONET



Pocket for cleaning kit



DETACHABLE BIPOD



CARRIER FOR 12 ROUND MAGAZINE

CLEANING JAGS & PULL THROUGH

ab c d



AMMUNITION 5.56x45 NATO



MAGAZINE FOR 30 CARTRIDGES

OPTICAL SIGHT: Mounted by the use of a dedicated sight mount with the appropriate height. A night vision device may also be fitted.

DETACHABLE BIPOD: (Telescoping, tilting joint, with wire cutter). Telescoping bipod which allows the use of two heights, and has a built-in wire cutter, which can only be used when the legs are in the shortest position.

ASSAULT RIFLE - CETME 5.56 "L"

B: SELECTOR IN POSITION "R"

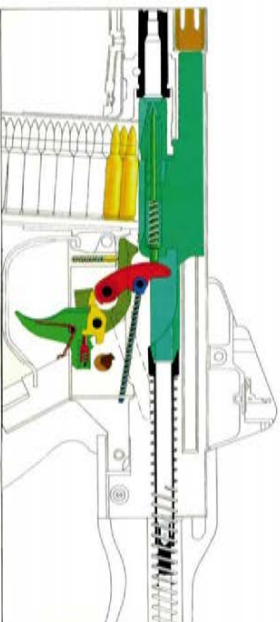


Fig. 11

In this position, the trigger stop is faced with the milled part of the selector shaft,

which is cut deeper than the semi auto setting. This allows the trigger to travel far enough to release the hammer, with the sear forward of the lug on the trigger.

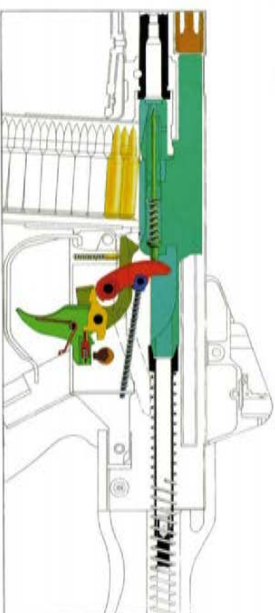
The hammer does not catch on the trigger sear when the selector is in this position. It is controlled by the safety sear.

In this way, each time the cammer fully closes, the safety sear releases the hammer and fires. When you release the trigger, the sear jumps to its initial position and holds the hammer, interrupting the burst.

C: SELECTOR IN POSITION "S"

When the safety selector is rotated to the SAFE or "S" position, the safety selector will not allow the movement of the trigger to the rear and up, thus restricting the firing of the rifle by pulling the trigger.

Fig. 12



ASSAULT RIFLE - CETME 5.56 "L"

10

9: EXTRACTION AND EJECTION

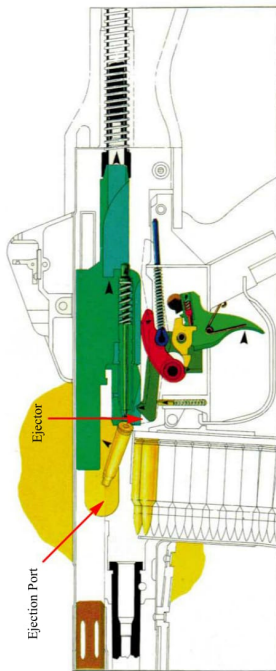


FIG. 9

Once the shot has been fired, and due to the pressure of the gases generated, the bolt and carrier are pushed to the rear. The following actions occur:

- The rollers and bolt head are unlocked.
- The fired cartridge is attached to the bolt head by the extractor. In recoil, the rear of the case hits the ejector lever, positioned so that it causes the case to be expelled out of the ejection port in the right side of the receiver.
- The bolt and carrier overcome the mainspring's resistance. As the bolt and carrier move to the rear, the hammer is pushed downward until it is captured by the sear.

The bolt and carrier are now fully to the rear, as seen in FIG. 3.

From this moment the firing cycle is repeated.

Even if the trigger is held, the weapon cannot fire another round, because as can be seen in the drawing, the trigger stop cannot push the sear far enough to release the hammer (it is prevented by the selector shaft). It will be necessary then to release the trigger so that the sear returns to the top of the lug on the trigger.

10: CLOSING OF BOLT

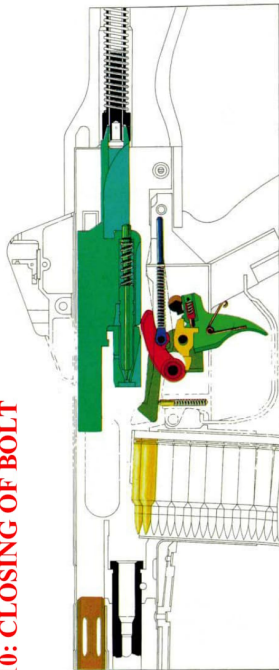


FIG. 10

ASSAULT RIFLE - CETME 5.56 "L"

7: SECOND ROUND FIRING

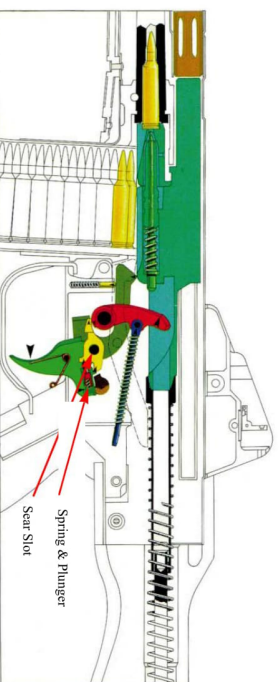


FIG. 7

With the trigger pressed, its stop makes contact with the milled part of the safety selector, preventing a longer travel, but enough to rotate the sear and allow it to clear the sear surface of the hammer. At the same time, the sear has been pushed forward by the spring and plunger, off the trigger stop, leaving the rear resting in front of the trigger stop lug.

Now the hammer has been released and hits the rear of the firing pin due to the pressure from the hammer spring.

The hammer hits the firing pin on its end, overcoming the resistance of the firing pin spring, the firing pin moves forward and hits the primer of the cartridge igniting the powder and firing the weapon.

8: PERCUSSION

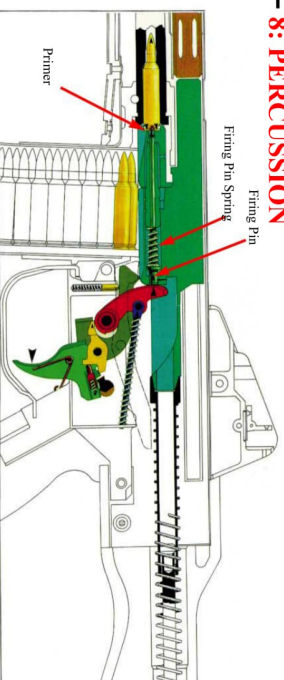


FIG. 8

RESTRICTED

ASSAULT RIFLE - CETME 5.56 "L"

5: LOADED WEAPON

Now the mainspring and buffer move the bolt and carrier into its forward and locked position. The cartridge is now loaded in the chamber, and is underneath the extractor, located in the bolt head.

The weapon is loaded.

The safety sear has been released by the trip surface on the bolt carrier, allowing the trigger sear to control the hammer.

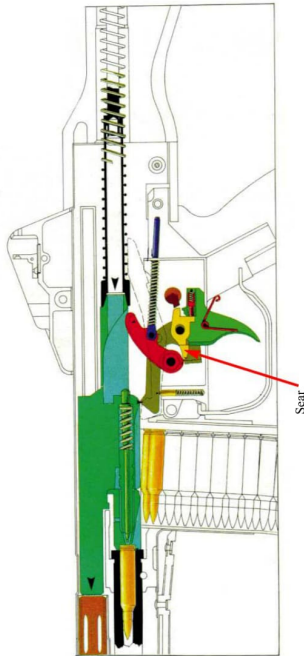


FIG. 5

This position occurs as the trigger is starting to be pressed.

As illustrated, the trigger pushes the rear of the sear upwards, releasing the hammer to strike the firing pin.

6: FIRST ROUND FIRED

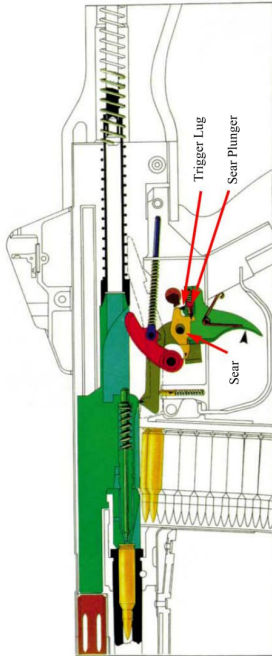


FIG. 6

ASSAULT RIFLE - CETME 5.56 "L"

3: CHARGING HANDLE AT REAR-

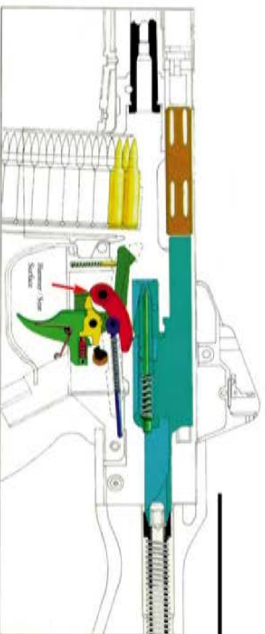


FIG.3

Having pulled the charging handle and cocking piece fully to the rear, the resistance of the mainspring and buffer assembly is fully overcome and the springs compressed. The hammer has been pushed down and is in its lowest position. The hammer has moved to a position where the hammer engages the safety sear.

If you wish to keep the weapon in this position, simply press the bolt hold open. To unlock it, you may pull the charging handle back slightly and release, or lift the bolt hold open release with the hand.

This position occurs when the charging lever is released.

The mainspring assembly, which was compressed, is now pushing the bolt and carrier to close the action.

The bolt head, as it passes over the magazine, pushes a round out of the magazine and loads it into the chamber. The hammer is still retained by the safety sear.

4: CARTRIDGE FEEDING -

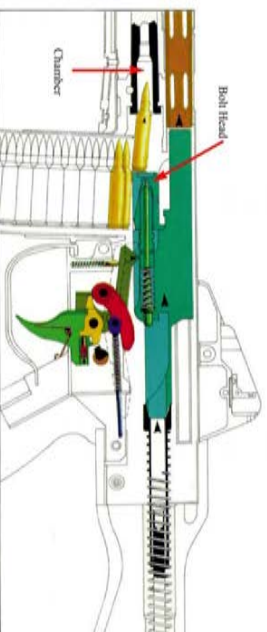


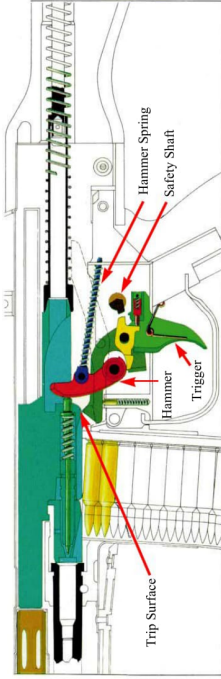
FIG.4

ASSAULT RIFLE - CETME 5.56 "L"

OPERATION OF THE FIRING MECHANISM

A: SELECTOR IN POSITION "T"

1: WEAPON AT REST



The trigger is in its normal position, kept forward by the trigger spring.

The safety selector provides a milled surface in front of the trigger stop, so the trigger can be pulled.

The hammer is in its forward position, resting on the rear of the firing pin; at this time the rollers in FIG 1. are located in the recesses in the trunion as indicated in Item #5.

The safety sear lever is in its lowest position, forced by the heel of the bolt carrier, overcoming the resistance of the plunger and spring.

When charging the rifle, the charging lever is moved to the rear, with the cocking piece mated with the cocking support on the bolt, and four important things occur:

- The rear of the bolt carrier rotates the hammer downward, overcoming the resistance of the hammer spring.
- The safety sear begins to slip off of the trip surface on the bolt carrier, while the spring and plunger push it upwards.
- The bolt and carrier overcome the resistance of the mainspring and buffer assembly.
- The rollers have unlocked and the bolt head, locking piece, and carrier are unlocked.

2: CHARGING HANDLE TO REAR - UNLOCKING

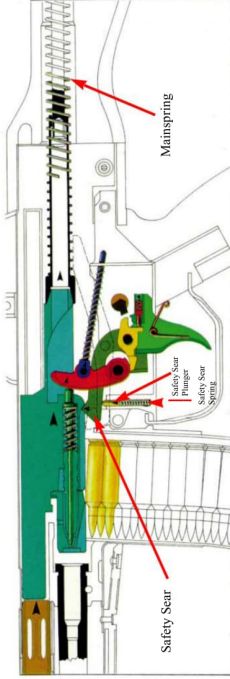
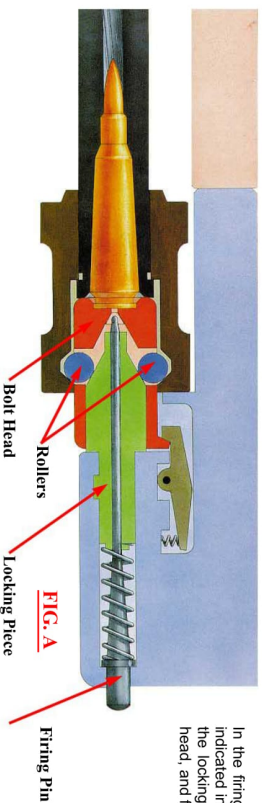


FIG. 2

ASSAULT RIFLE - CETME 5.56 "L"

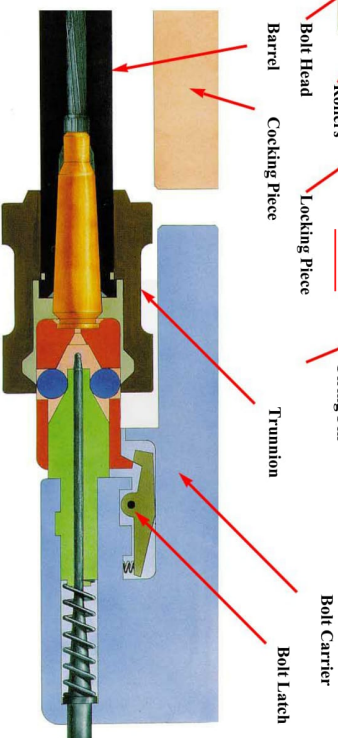
CLOSING OF THE ACTION



In the firing / locked position, the location of all the parts is indicated in fig. A. The rollers, forced by the inclined planes of the locking piece, protrude through the openings in the bolt head, and fit into the recesses in the trunnion.

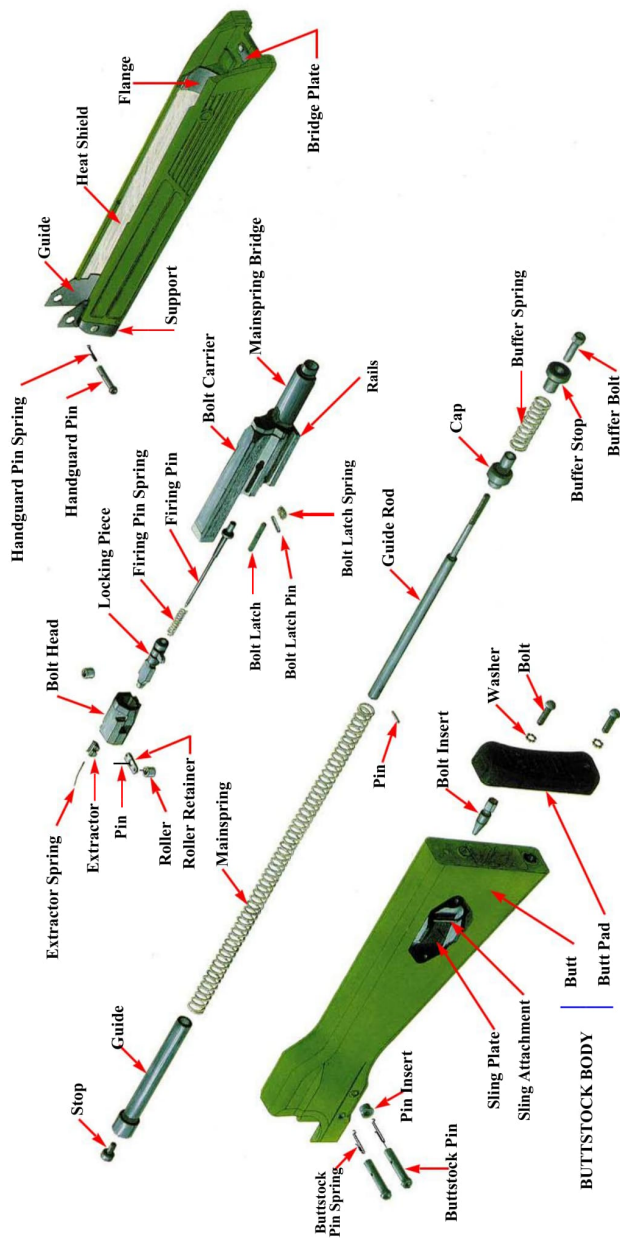
When the cartridge is fired, the gas pressure is transmitted through flutes and the case itself, to the bolt head, which initiates the recoiling of the action. The rollers ride down the angles on the face of the locking piece, putting force on the bolt carrier and forcing it back faster than the bolt head. Once the rollers clear the recesses in the trunnion, the entire system is unlocked.

Once unlocked the arrangement of the firing components is as shown in Fig B. As the action opens the cartridge is extracted and ejected from the action, and the entire assembly overcomes the resistance of the mainspring and buffer, until the force dissipates and the mainspring and buffer recover, forcing the entire action back forward and eventually locking once again as in Fig. A.

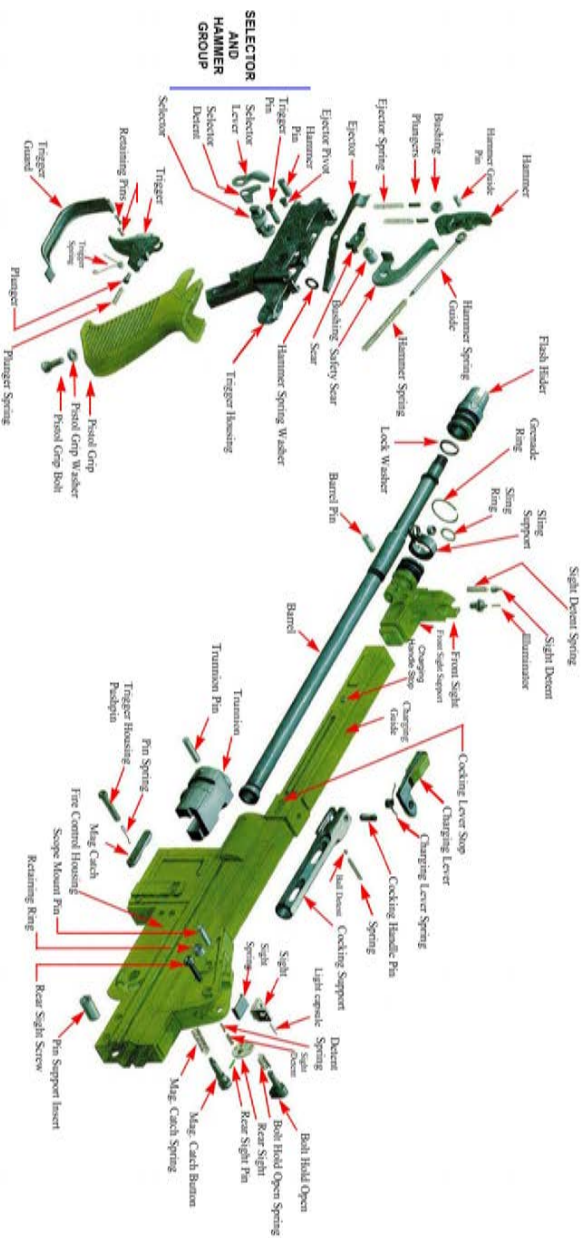


ASSAULT RIFLE - CETME 5.56 "L"

PARTS DIAGRAM 2



PARTS DIAGRAM 1



ASSAULT RIFLE - CETME 5.56 "L"

SUBASSEMBLIES:

BOLT:

Principal Elements:

- Bolt Carrier
- Bolt Head
- Firing Pin
- Firing Pin Spring
- Bolt Latch

MAIN BODY:

Principal Elements:

- Receiver
- Flash Hider
- Barrel

MAINSRING:

Principal Elements:

- Guide Rod
- Main Spring (a)
- Buffer Spring (b)

PISTOL GRIP WITH FIRE CONTROL HOUSING:

Principal Elements:

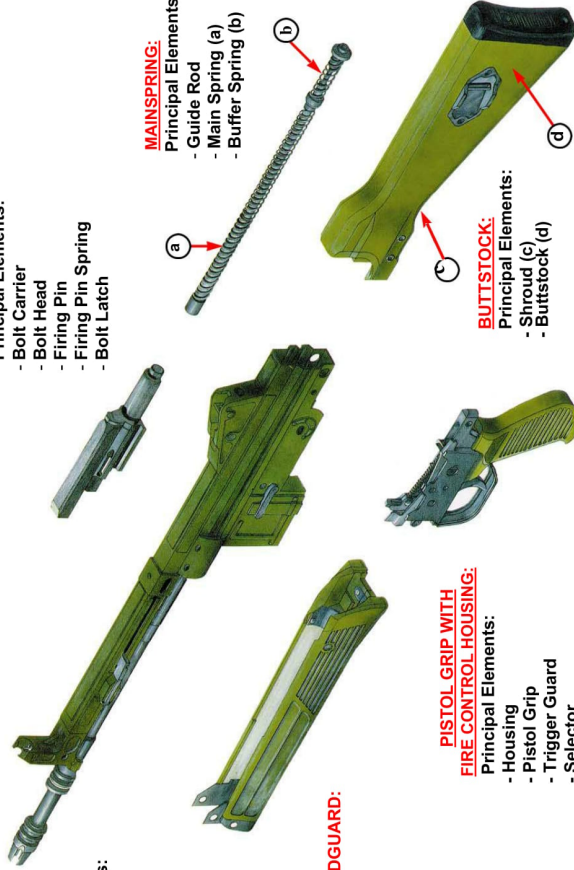
- Housing
- Pistol Grip
- Trigger Guard
- Selector

BUTTSTOCK:

Principal Elements:

- Shroud (c)
- Buttstock (d)

HANDGUARD:



ASSAULT RIFLE - CETME 5.56 "L"

CHARACTERISTICS:



Caliber: 5.56 mm.
System of Operation: Delayed Roller Blowback
Magazine Capacity: Roller Locked.
Max. Rate of Fire: 12 or 30 Rounds.
Max. Sustained Fire: 600 to 750 r.p.m.
Automatic 120 r.p.m.
Semi-Auto 70 r.p.m.
Weight Without Magazine: 7.49 lbs.
Weight Empty Magazine: .46 lbs.
Weight Loaded 30 Rounds: 1.23 lbs.

Total Length: 36.4 inches.
Barrel Length: 15.75 inches.
Sight Radius: 17.32 inches.
Ammunition: 5.56 x 45 NATO.
Velocity at Muzzle: 2,870 F.P.S.
Effective Range: 437 Yards.
Sights: Peep with 200 & 400 Meter Sights.
Grooves: 6 Grooves, Right Hand.
Aiming: Windage Adj. on Rear Sight.
Low Light Aiming: Range Adj. on Front Sight.
Align Target Over Front Sight
Centered Over Rear Illumination

RESTRICTED

ASSAULT RIFLE - CETME 5.56 "L" & "LC"



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Design: Educational Aid Center of E.T.

