

JP ENTERPRISES



PSC-19™

LRP-07™

LTC-19™

PSC-11™

SCR-11™

CTR-02™

JP-15™

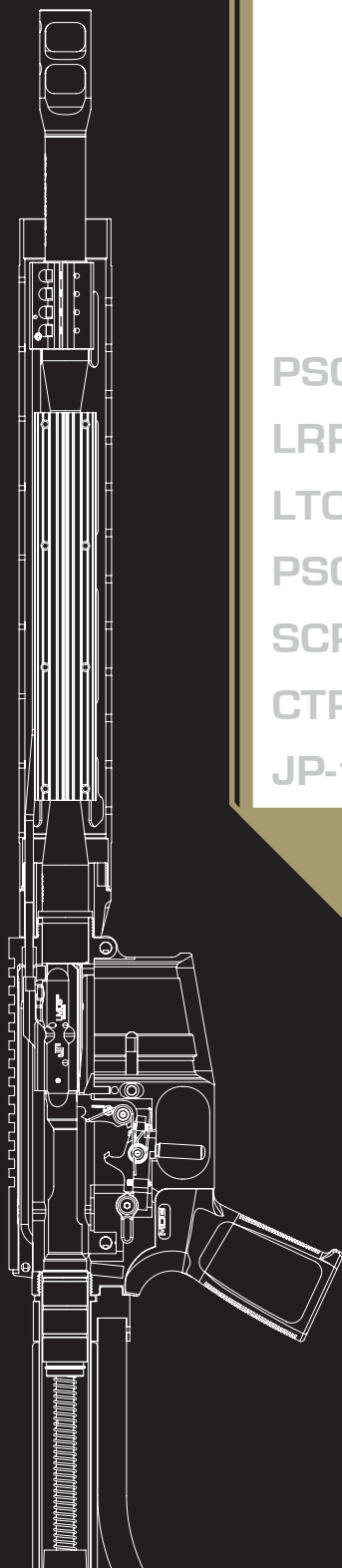
OWNER'S MANUAL

RIFLES AND
UPPER ASSEMBLIES

Version 11.19.18



READ ALL THE WARNINGS AND
INSTRUCTIONS IN THIS MANUAL
BEFORE OPERATING THIS RIFLE.



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In this manual, the correct standard terminology has been utilized to refer to self-loading rifles of the Gene Stoner design. The small-frame version of this rifle—usually chambered to fire the 5.56x45 NATO or the .223 Remington round—will be referred to as the AR-15 for the civilian semi-auto version or the M16 for the select-fire military/police version. The large-frame version of the Stoner design—usually chambered in the 7.62x51 NATO or the .308 Winchester family of cartridges—will be referred to as simply the .308 semi-auto.

The content of this manual refers most comprehensively to our small-frame (AR-15) gas-impingement rifle models with traditional top charging handles, but most of this information is entirely applicable to our other models and operating systems. Where processes or components differ (e.g., the side charging handles of the LRP-07™ and SCR-11™ or the different operating system for .22 LR rifles), such differences have been noted in sidebars. Unless noted, the information in these sidebars should be understood to supersede any contradictory instructions described elsewhere for the models in question. If you are left with important questions about the function of your particular rifle, please contact JP or a qualified gunsmith before live fire usage.

SAFETY

Firearm ownership, like scuba diving or rock climbing, is an endeavor that demands personal responsibility. If you cannot take responsibility for your actions, firearm ownership is not for you. If carelessly or improperly handled or stored, this or any other firearm has the potential to cause great damage to property and severe injury or death to people and animals. If you are unfamiliar or uncomfortable with the usage of firearms, seek additional training and/or education through qualified instructors or organizations such as local gun clubs or the National Rifle Association. Before using your new rifle, read through the entirety of this manual beginning with this safety section to ensure that you are intimately familiar with its use and operation.

THE DOs AND DON'Ts OF FIREARM OWNERSHIP

These are the four commandments of gun safety. Memorize them and instruct all others in your family or shooting group to make sure that these rules are understood completely and followed explicitly.

1. Treat all firearms as if they were loaded.
2. Do not sweep anyone or anything with the muzzle of your firearm that you are not willing to destroy.
3. Keep your finger out of the trigger guard until you are ready to fire.
4. Be sure of your backstop.

Most all of the safety precautions in this section originate with these rules, and if you take nothing else away from this manual, make sure that you remember and follow these. Due to the importance of this material, though, we will expand further.

DO handle your firearm at all times as if it were loaded. Unless you are presently looking at the empty chamber, the firearm should be treated as a loaded weapon. The only firearm that you can say is unloaded with certainty is the one that you have just checked and which is still in sight. Once it is out of your sight, you can no longer say with absolute certainty that it is unloaded.

DO keep the safety selector lever in the “SAFE” position whenever you are not immediately ready to fire.

DO practice stance, aim, rhythm and breathing with your unloaded firearm before practicing with live ammo, and practice thoroughly with your rifle at the range before going hunting or attempting other shooting sports.

DO instruct children and other members of your household to respect firearms and to follow safety procedures regarding guns, even if they do not shoot them regularly or even at all. If you intend to teach children or family members to shoot, have them trained by a qualified instructor and supervise them while they operate firearms.

DO appoint a knowledgeable and responsible individual to manage the safety of large shooting groups making use of a range facility. You should defer to, and insist that others defer to, that individual’s authority for everyone’s sake. Additionally, you should ensure that you are personally qualified to fill this role if necessary.

DO clean and maintain your firearm responsibly. (See the **CLEANING AND MAINTENANCE** section of this manual.)

DO use only high-quality, good-condition ammunition in your firearms. (See the **Ammo Selection** section of this manual) Be aware that the ammunition requirements for your JP rifle may be different from certain other AR-type rifles.

DO seek medical advice regarding medication you take to determine if it will interfere with your ability to operate a firearm safely.

DO wear ear protection while you or anyone in your vicinity is operating a firearm. Additionally, insist that those around you wear ear protection while in the presence of discharging firearms. Not doing so could result in loss of hearing.

DO wear eye protection—and require others to do the same—while firearms are being discharged. Flying particles or debris could cause eye damage to the operator or those around him or her.

DO keep clear of the firearm’s ejection port as spent cartridge casings are expelled from the weapon at high speeds and temperatures capable of injuring or burning. Ensure that other observers do likewise. In particular, be aware that ejected casings may bounce off walls and other objects in some range situations and enter open-topped clothing causing severe burns. It is always a good idea to wear a cap with a brim while shooting to help deflect spent cases from the face and eyes.

DON’T point the muzzle of the firearm at anything you are not willing to destroy. This includes times when the firearm is unloaded and when it is being inspected and cleared. It is never a good idea to handle a firearm in a situation with people standing all around you. Always clear a safe zone for the muzzle. In the field, rifles should be carried with the muzzle pointing up or down, never at the horizontal.

DON’T trust that the firearm is unloaded merely because you are told so. Visually check it yourself.

DON'T insert your finger into the trigger guard until you are ready to shoot. This decreases the likelihood of an accidental discharge. If you handle firearms long enough, it is a statistical certainty that eventually you will have an accidental discharge. Knowing this should give you added incentive to exercise safe muzzle and trigger control.

DON'T shoot your rifle unless the bore, muzzle, chamber and action are clear of obstruction. Verify that there is no such obstruction only after ensuring that the firearm is unloaded.

DON'T leave your firearm exposed and unattended, whether loaded or not.

DON'T transport your firearm while it is loaded, whether just around the range or over longer distances.

DON'T carry a loaded firearm in such a way that you are not fully in control of the direction of the muzzle. Always carry a rifle muzzle up or muzzle down.

DON'T inflict or allow blunt impact to your firearm, such as dropping it onto a hard surface. The firing mechanism could be triggered causing the gun to fire while not under control. Additionally, components of the firearm may be damaged reducing the overall safety of the weapon. If such damage occurs, have your firearm examined by a qualified gunsmith before further use.

DON'T allow others to operate your firearm unless they are informed and comfortable with the use of such weapons. Make sure that they follow all the preceding and following rules, because while someone is using your firearm, you are responsible. It is always a good idea to allow a new shooter to dry-fire your rifle before loading live ammo.

DON'T discharge your firearm unless you are certain of your backstop's integrity. Be certain that no bullets will pass through the backstop to potentially cause damage or injury. In the field, only fire at game or targets if you are sure that a miss or a bullet passing through the target will be contained in the visible area behind the target.

DON'T attempt to alter or modify your firearm, especially if attempting to change the trigger pull weight of the weapon. Alterations to certain components or their relationships with each other can affect the overall safety of the mechanism and potentially result in unexpected discharge, damage or malfunction.

DON'T drink alcohol or use drugs or other substances that may impair brain function, judgment, physical dexterity or vision while operating a firearm.

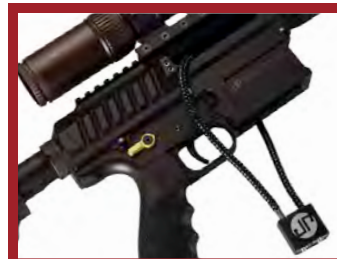
DON'T shoot at a hard surface like a rock or at a liquid surface like open water. Doing so may cause the bullet to ricochet and change trajectory unexpectedly.

DON'T use your firearm in poorly ventilated areas. Continued use could result in accumulation of lead and other toxic particulate matter in the air that could be injurious to health.

DON'T use your firearm if water is in the barrel. If your firearm is submerged, exposed to heavy rain or otherwise drenched, dry the water and clean the weapon before attempting to use it.

DON'T discharge your weapon in the presence of an animal that has not been trained to accept the noise because it may panic and cause damage, injury and confusion.

DON'T allow or partake in "horseplay" with a firearm under any circumstances.



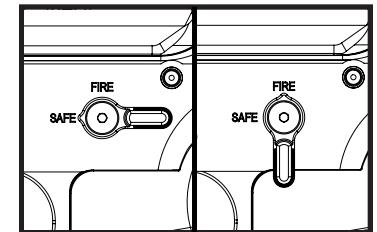
SAFE STORAGE

All complete JP rifles include a rubberized cable lock as a safety device. This lock can be passed through the action of your rifle to render it safe and inoperable without damage. This lock should be installed whenever the rifle is stored to prevent unauthorized use.

SAFETY FEATURES

SAFETY SELECTOR

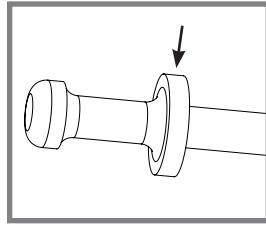
Located on the left of the lower receiver, the selector lever has two positions: FIRE and SAFE. When set to FIRE, the rifle will fire a single shot each time the trigger is squeezed. When set to SAFE, a cam bears upon the rear portion of the trigger, blocking the sear surface of the trigger and preventing the hammer from releasing. Check the function of the safety from time to time with the rifle unloaded. Verify that the rifle is clear, cycle the action using the charging handle to cock the hammer, place the safety selector in the SAFE position and squeeze the trigger. The trigger should have no perceptible movement, and the hammer should not fall.



Be aware that replacing any original JP fire control components with non-JP aftermarket components may render the safety selector nonfunctional by allowing the rifle to fire on SAFE. For example, some two-stage triggers will not interface with the JP adjustable selector, which will not fully block the trigger in the SAFE position thereby allowing the trigger to function even with the safety engaged. If you install a non-JP trigger system with the JP selector, it is imperative to verify safety function.

DISCONNECTOR

The disconnecter, which is part of the firing mechanism, prevents the rifle from firing in the fully automatic mode. As the hammer is cocked after each shot by a rearward movement of the bolt carrier, the disconnecter engages the hammer to hold it rearward until the trigger is released. When the trigger is released, retention of the hammer passes from the disconnecter to the sear surface of the trigger, which is ready for the next shot.



FIRING PIN COLLAR (Gas impingement only)

The bolt carrier assembly, located within the upper receiver, is designed to prevent the firing pin from striking a cartridge until the bolt is locked to the barrel. If the firing pin should be struck by the hammer before the bolt is locked to the barrel, the firing pin could not move forward through the face of the bolt, because the firing pin is held positively rearward by the collar on the firing pin, which bears against the rear surface of the carrier.

RIFLE OVERVIEW

This section is intended to give you an informative look at the function of an AR-type rifle in general, as well as the specific components and features that make a JP rifle unique.

RIFLE FUNCTION - GAS IMPINGEMENT

Gas-operated, self-loading rifles have a semi-automatic action that functions as follows: With the action cocked, chamber loaded and safety selector lever set to "FIRE," the trigger can be depressed in order to discharge the weapon. Upon activating the trigger mechanism, the trigger rotates, disengaging the trigger sear surface from the hammer. The hammer spring drives the hammer forward to strike the firing pin, which in turn strikes the primer in the base of the cartridge. Once struck, the primer composition is ignited, which then ignites the main powder charge in the cartridge. High-pressure gases push the bullet down the barrel where rifling grooves impart stabilizing spin to the bullet.

As the bullet passes the gas port of the barrel, which is located underneath the JP Gas Block, gas is tapped off and directed through the gas tube running underneath the hand guard and into the bolt carrier chamber driving the carrier rearward. As the bolt carrier moves to the rear, the cam track in its upper surface acts upon the cam pin causing it, and the bolt through which it passes, to rotate until the locking lugs of the bolt are no longer in engagement with the lugs of the barrel extension. The bolt is now unlocked

and is carried rearward by the bolt carrier. The extractor extracts the spent cartridge case and holds it against the face of the bolt until the ejector throws the spent case through the ejection port.

The bolt and carrier continue rearward, compressing the action spring and returning the hammer to the cocked position until the buffer assembly strikes the bottom of the receiver extension. The action spring then forces the bolt and carrier forward so that the face of the bolt strips the next round of ammunition from the magazine and thrusts it into the chamber. At the same time, the extractor snaps into the groove of the cartridge case, and the bolt locks into the barrel. The hammer is now held rearward by the disconnecter, and when the trigger is released, the disconnecter is rotated back releasing the hammer. However, before the disconnecter hook actually releases the hammer, the trigger sear surface has rotated in front of the hammer notch so that the hammer is held on the trigger sear surface ready for another shot. Thus, as a semi-automatic firearm, the rifle is automatically and immediately loaded and ready to fire again after each shot until the magazine is empty.

RIFLE FUNCTION - BLOWBACK (.22 LR)

The .22 LR conversion action is blowback operated and does not utilize a gas block to redirect gas from the barrel. The bolt assembly consists of both a forward and rear section connected by a recoil action spring and guide rod. The forward section acts as the bolt face while housing the firing pin, extractor and related springs. Under live fire, this section reciprocates to facilitate semi-automatic function. The rear section of the bolt assembly is stationary and supports the action spring and guide rod.

JP RIFLE COMPONENTS

What follows is a listing and explanation of the components unique to a JP rifle that contribute to its superior function. Many of these entries include maintenance instructions and should be considered supplementary to the **CLEANING AND MAINTENANCE** section of this manual.

As a custom rifle builder, our rifle configurations are numerous. Not all rifles will be equipped with each of the following components, and upper assemblies will obviously not include lower-specific components. For more specifics on the features and function of the specific components in your, refer to the archive of instruction sheets on our website, www.jp Rifles.com.

JP RECOIL ELIMINATOR/COMPENSATOR

Most of our rifles are equipped with a Recoil Eliminator or JP Compensator of one style or another. Be aware that the purpose for a recoil-eliminating device on the muzzle is to lower the sight recovery time of the shooter by reducing the movement of the rifle as each shot is fired. It does this by harnessing otherwise wasted kinetic energy of the

muzzle gases and directing them against baffle surfaces. The inside forward surfaces of the baffles will show some erosion over time, but this will not affect performance until the exit hole is actually burned through completely. The life expectancy of the barrel may exceed the life of the muzzle brake, so the brake may need to be replaced eventually. See the **Replacement of Parts** section below for more.

Muzzle brakes by their very nature redirect high-pressure gases and can blow dirt or other materials present in the shooting area back towards the shooters or bystanders, especially at indoor ranges with enclosed shooting booths. Noise may also be increased to the shooter and definitely to bystanders. ***Eye protection and earplugs/earmuffs are required equipment when shooting or observing firearms with muzzle brakes or compensators. At indoor ranges, a combination of both earplugs and earmuffs is strongly recommended.*** There are many good products on the market to fill this need, such as stereoscopic hearing muffs that protect while still allowing you to hear, even while using earplugs. JP Enterprises, Inc. is not responsible for hearing loss resulting from exposure to gunfire.

JP FIRE CONTROL SYSTEM

JP rifles feature the most refined single-stage fire control mechanism available. Before you use your rifle, check to make sure it is clear, and then dry-fire it several times to become accustomed to the drastically improved feel and lighter weight of the trigger. If you allow others to fire your rifle, have them do the same to reduce the likelihood of an accidental discharge.

Every performance gain will have some corresponding cost in reliability or durability. Although we have designed this system to give what we feel is the optimum compromise between performance, reliability and durability, it is a highly refined system that requires the parts to maintain much more critical tolerance relationships than the standard AR fire control system. After thousands of rounds, these relationships may change due to normal wear, and the system may need readjustment or replacement parts.

It is important that you lubricate the high-load surfaces such as the disconnecter engagement surface and the sear/hammer notch surfaces for maximum parts life. We recommend using Armité L-P 250 Sear Grease or a similar high film strength lubricant designed for such applications.

Should you choose, the JP adjustable/reversible selector of your rifle can be reconfigured for customization. The levers can be reversed, removed or replaced as needed. A single lever can be replaced with a readily available 8-32 x 1/4" flathead screw.

JP ADJUSTABLE GAS SYSTEM

The purpose of our adjustable gas block is to allow you to control the pressure delivered to the operating system and thereby optimize the bolt velocity, which will result in a

smoother shooting, more reliable rifle. The ability to adjust the operating pressure also improves the overall reliability and longevity of the operating system. Most rifles cycle faster than necessary, and the resulting "bolt slamming" effect is a noticeable part of the recoil impulse.

The gas system is preset during the test fire procedure by JP. It is set high for this break-in with a bias towards reliability using domestic 55-grain FMJ test loads with good port pressure. This factory setting is perfectly usable. If your rifle is used for law enforcement, military or personal defense use, we recommend leaving it at this setting so as not to compromise reliability. If your rifle is primarily for varmint hunting or some non-critical use, and you want to get maximum effect by fine-tuning the operating pressure at the price of an occasional stove pipe, that is possible, and will make a noticeable difference.

The gas block adjusts from the right side using the hex key provided in the accessory kit. Before attempting this adjustment, make sure you are comfortable with the basic operation of the rifle described later in this manual. A general gas block tuning process is provided here. For a more specific walkthrough, you can consult the instruction sheet for your particular model on our website. You can also view a gas block tuning tutorial video available on our YouTube channel, www.youtube.com/jprifles.

When you tune the gas system for a particular load, first turn the gas adjustment screw in all the way to close it. Then, back it out about two full turns. Load one round of the ammunition into a reliable magazine and fire. If the bolt holds open, repeat the process to confirm that the bolt holds open reliably at this setting. Once this happens, the gas block is set, though this is not likely to happen without some adjustment. If the bolt does not hold open, it is short-stroking. Open the valve another half turn and fire another round. Repeat this process opening the valve a half turn until the bolt consistently holds open after the last round of the magazine is fired. In situations where reliability is critical, we recommend giving it another quarter to a half turn open.

Once the gas system is set, remember that if you change ammo, port pressure may vary. The rifle should be tested again with any ammunition that you intend to use in actual competition or a critical application. If you must use untried ammo, back out the valve a full turn to ensure full cycling.

To retain your gas setting, our current model gas systems include a click-detent feature or an internal brass set screw accessible from either the front or top of the gas block. In the case of the latter, when you have found your desired gas setting, tension this brass screw against the adjustment screw until it no longer rotates easily. Be careful not to over-tension these set screws against one another as you'll risk stripping the hex key slots. You may also need to re-tension these screws occasionally as the brass screw wears over time. If you are looking to set the gas screw in a more permanent fashion, you can use Loctite® 242 to secure the valve screw.

If you want to convert to manual operation to avoid losing brass or peppering the shooter next to you in a shoulder-to-shoulder situation like a formal shooting range, that is another option with this system. However, for any application where reliability is essential, tune the gas system on the generous side, leaving the rifle a bit over-gassed.

JP OPERATING SYSTEMS (Gas impingement only)

The newest JP bolt carrier line, our **Variable Mass Operating System (VMOS™)** is designed for rifles requiring extra cycling mass or those relying upon mass regulation for reliability. This includes suppressed setups and rifles without an adjustable gas system. Like our Silent Captured Spring, the reciprocating masses of a VMOS™ carrier can be reconfigured to suit your particular rifle. **These carriers will not function with a standard buffer and spring retained by a Mil-spec buffer retainer plunger. The VMOS™ must be used with a Silent Captured Spring.**

The **Full Mass Operating System (FMOS™)** consists of a full-mass buffer system (or corresponding Silent Captured Spring) and a full-mass 416 stainless carrier. It is designed to maximize the operational window of the rifle and allow for highest possible reliability under adverse conditions. Like all our 416 stainless carriers, FMOS™ carriers feature a special roller burnishing finish process in the bore that results in closer tolerance control and a lower overall friction in the bolt/carrier relationship. Lower friction results in more energy reserved to overcome adverse functional conditions.

The complete **Low Mass Operating System (LMOS™)** consists of our low mass buffer or SCS and one of our 416 stainless low mass carriers. These carriers have very comparable reliability to the FMOS carriers. The large-frame .308 LMOS™ carrier in particular is the standard choice for military, police or personal defense rifles. In small-frame rifles for such purposes, we still recommend the FMOS carrier be used.

Our **Ultra Low Mass Operating System (ULMOS™)** aluminum carriers are strictly competition-components with particular maintenance needs. These carriers represent a compromise that yields a significantly improved and controllable recoil impulse at the expense of overall reliability. For recreational or competitive shooting, the ULMOS™ components are an acceptable compromise that will not affect reliability with reloaded ammunition tailored to, or factory ammunition proven in, a well-maintained rifle. However, these carriers do result in a slightly reduced “operational window.” ***In other words, the system requires ammunition yielding a port pressure within a certain range, and the rifle must be better maintained and lubricated than one with a steel JP carrier.***

Most problems with LMOS™ or ULMOS™ Systems are caused by carbon buildup in the carrier bore. A couple of drops of oil in the exhaust ports followed by cycling the empty rifle in and out of battery is usually enough to scrub this fouling off the carrier walls and keep the rifle in the operational window. At a match, it's good to lubricate between every rifle stage as an added measure of caution. The test for carbon buildup in the bore of the carrier is to pull the bolt carrier back (on an empty chamber) and allow it to go

forward slowly with the charging handle. It should close fully by action spring tension alone. If it must be assisted or dropped from the open position, the carrier is fouled.

Generously lubricate the operating system every 200 to 300 rounds with a high-quality, low-viscosity gun oil like that included with your rifle or upper. Place a couple drops on the four bearing surfaces of the carrier. Also, place one drop on the cam pin, one in the exhaust ports on the right side of the carrier and one on the locking lugs of the bolt, spreading it around with your finger. If you happen to be shooting in a very dusty environment, more frequent lubrication may be necessary to keep dirt from forming a retarding sludge. If the action feels sluggish, it likely requires cleaning and lubrication. The low mass system does not have the kinetic energy storage capacity of the full mass operating system and will not tolerate as much impediment. Do not use Kellube M12 or any high-viscosity oil on this part, as they have too much retarding effect.

After some use, you will begin to see small marks on your bolt carrier from hammer impacts on the bottom of the bolt carrier as it is reset during live fire. This is normal wear and is cosmetic in nature only. It will not affect the lifespan of the parts. Eventually, you will notice the finish wearing off on the top bearing surfaces next to the carrier key. This is also normal wear and should cause no alarm.

If you intend to shoot off the magazine, which is a common technique at some tactical format matches, you must be sure that your magazines do not interfere with the bolt carrier. To test them, first disassemble the magazine. Then, with only the empty housing inserted and locked into place and the full weight of the rifle resting on the magazine tube, cycle the action and verify that there is no interference between the bolt carrier and the feed lips of the magazine.

JP EnhancedBolt™ (Gas impingement only)

The JP *EnhancedBolt™* is made from SAE 9310 high-grade steel and is guaranteed to far outlast standard Mil-spec bolts, which can start to show cracks on the locking lugs after only 3000 rounds. For all its advancements and improvements, the JP *EnhancedBolt™* still accepts readily available Mil-spec extractors, pins, gas rings and springs. See the **Replacement of Parts** sections of this manual for more.

Among the various proprietary components of the *EnhancedBolt™* is our precision-ground Enhanced Gas Ring, which functions slightly differently from the standard AR components. The common test to identify worn out gas rings in an AR-15/M16 is to set the bolt and carrier, bolt side down, on a table top with the carrier and bolt extended. The friction of the gas rings should support the weight of the carrier. This test is a relatively reliable means of identifying worn gas rings when using three-piece rings in a standard bolt carrier. Such components initially provide a good gas seal due to the friction between them, but that same friction is responsible for most of the wear between the parts, which then gradually erodes the gas seal. Ultimately, the important aspect of gas ring fit is gas seal itself, not the friction.

JP bolt carriers and Enhanced Gas Rings are designed to minimize friction while still providing a tight gas seal thanks to the very precise grind of the ring's exterior. Lacking the destructive friction of the standard parts, our bolts will likely fail the drop test even while providing a solid and more durable gas seal.

Unless otherwise requested, our large-frame rifles ship with the High Pressure .308 version of our *EnhancedBolt™*. The design of this bolt differs from our standard .308 model by its reduced diameter firing pin hole orifice and companion .062-tipped low mass firing pin. This modified relationship virtually eliminates primer flow and the possibility of pierced primers on any SAAMI or NATO spec. ammunition, thereby allowing for a broader range of ammunition compatibility and load density in the AR .308/7.62 and other variants such as .260, 6.5mm or 6mm calibers in this platform.

The JP .308HP bolt does not allow for the use of excessive pressure, overloaded ammunition that exceeds SAAMI specifications. When evaluating new ammunition, always start on the low- to mid-range of any published load data and work up. A good indicator of working pressure is the primer retention on the subsequent loading of a case. A noticeable loss of primer pocket tension indicates that your ammunition has excessive pressure and has overworked the case.

JP MK III HAND GUARDS

The JP MK III Hand Guard Systems are extremely versatile components that can integrate numerous Picatinny rail sections to allow for the addition of accessory items such as lighting, vertical grips, secondary sight systems and co-witnessed infrared night vision systems at any position on the hand guard tube. Each hand guard comes standard with quick-detach studs for any type of sling or bipod interface and can accommodate more if desired.

For mounting at the 12:00 position of the hand guard, we offer mid-, full-length and extra-long rails in addition to a two-inch front sight rail section. Modular rail sections and other accessories are available for mounting to any other position on the hand guard tube. On the Signature style tubes, these rails and accessories are attached using backer plates placed inside the hand guard tube, riding in one of the slots to provide stable yet versatile mounting for your accessories. For Rapid Configuration tubes, these rails mount directly to the hand guard itself without need for backer plates.

MK III hand guards require a unique tool in order to remove the barrel retainer nut. This tool is not included with your rifle or upper but can be supplied upon request at no cost.

JP SILENT CAPTURED SPRINGS

An upgrade replacement for standard buffer and spring components, the JP Silent Captured Spring eliminates much of the raspy scraping caused by these traditional

components to produce a virtually silent action with a dramatic reduction in friction and vibration during live fire. To achieve the utmost from the SCS, we recommend oiling the entire unit periodically, especially the spring and guide rod. If the unit becomes fouled, clean with hot, soapy water, blow dry with compressed air and reapply light oil (rather than grease). During regular rifle maintenance, check the tightness of the screws at the ends of the SCS. If they are loose, remove them, clean the threads and reapply Loctite® 263 before reinstalling.

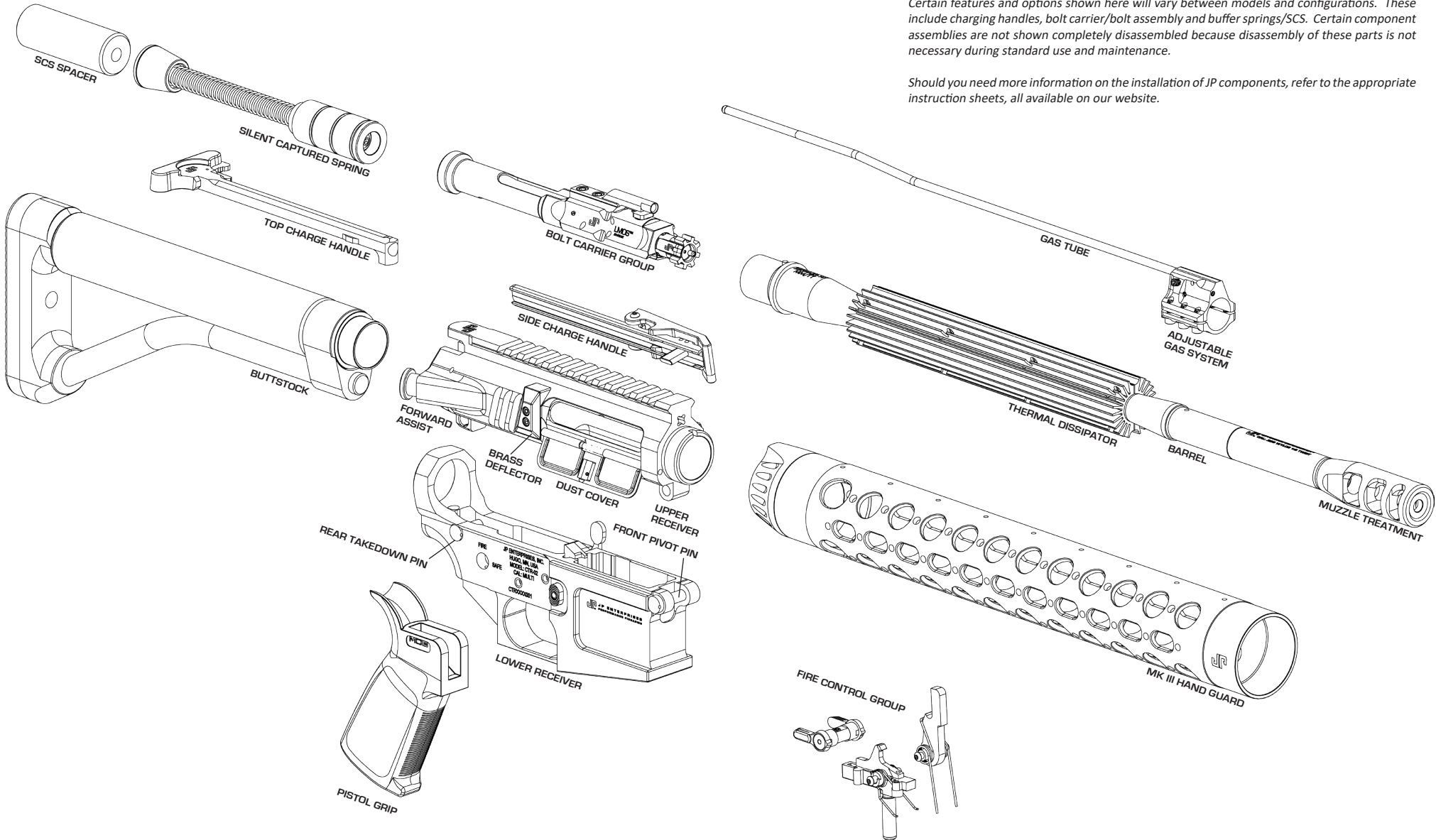
While the Silent Captured Spring has been live-fire tested to function in your rifle, it may not properly cycle if you elect to reconfigure the rifle or transfer the unit to a different rifle. If this is the case, the SCS can be modified changing out the operating spring for a heavier or lighter one depending on the problems the rifle exhibits. The alternate rate spring packs are available from JP for both the JPSCS2-15 and -10 models. The masses of the SCS can also be reconfigured to achieve better function.

COMPLETE RIFLE VIEW

This diagram depicts a PSC-11™ upper assembly paired with a CTR-02™ lower. This combination encompasses all the major components and features of our rifle line.

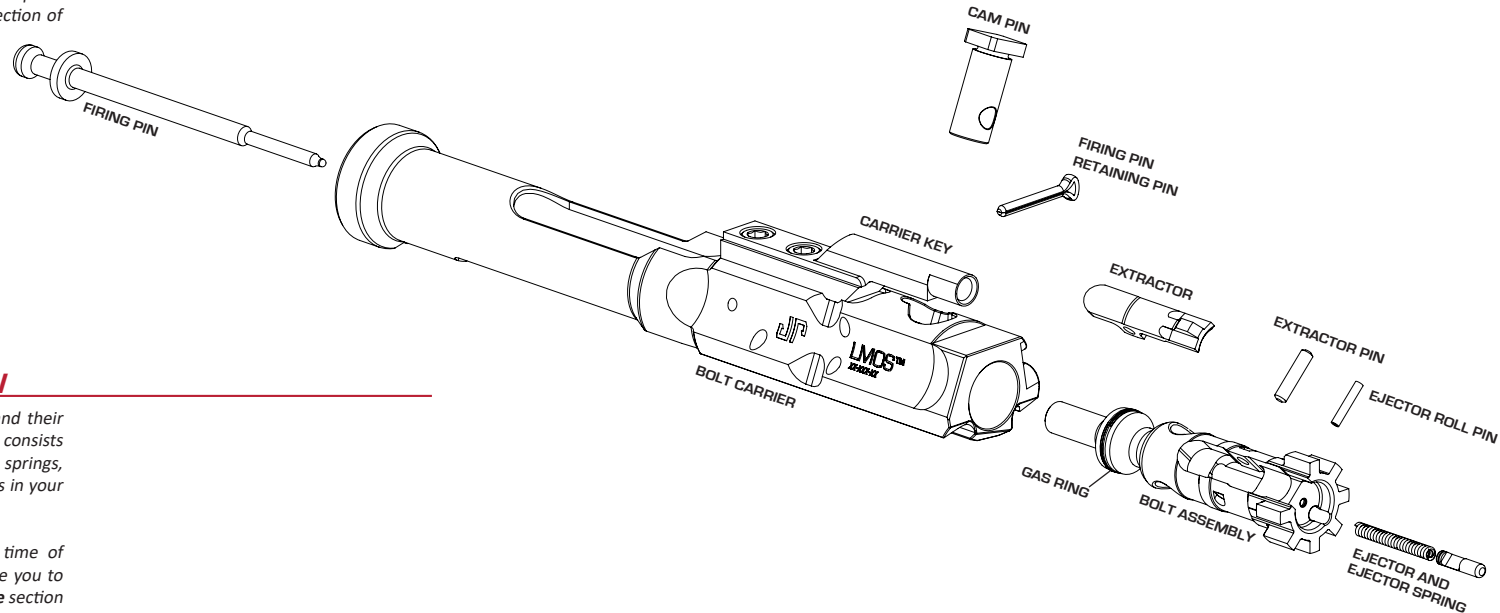
Certain features and options shown here will vary between models and configurations. These include charging handles, bolt carrier/bolt assembly and buffer springs/SCS. Certain component assemblies are not shown completely disassembled because disassembly of these parts is not necessary during standard use and maintenance.

Should you need more information on the installation of JP components, refer to the appropriate instruction sheets, all available on our website.



BOLT CARRIER GROUP

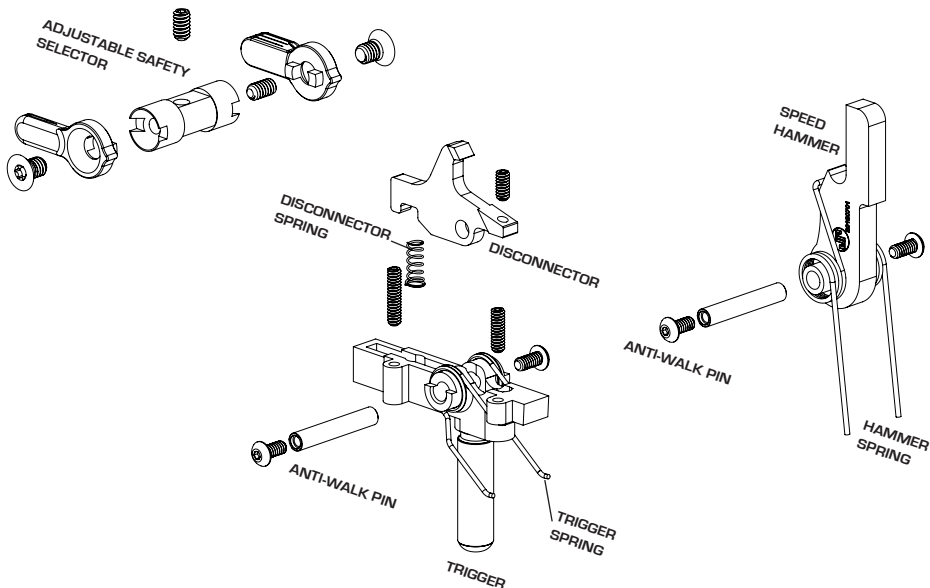
The gas gun bolt group depicted here is a small-frame model using our LMOS™ steel carrier. Carrier groups for our large-frame models, the LRP-07™ and PSC-19™, are very similar. For a parts replacement schedule, see the **Replacement of Parts** section of this manual.



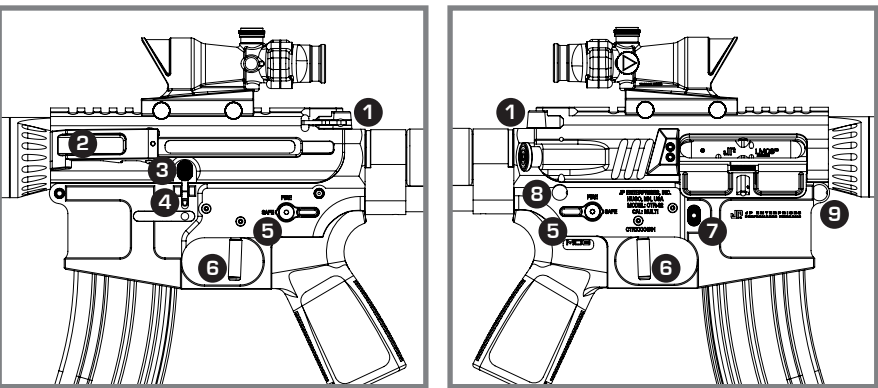
FIRE CONTROL GROUP VIEW

Shown here are the primary fire control components and their associated hardware. Our complete fire control system consists of our adjustable trigger, Speed Hammer, performance springs, Anti-Walk Pins and Adjustable Selector. The components in your rifle may vary slightly from those shown here.

The fire control system is set and optimized at the time of assembly. Normal use and maintenance will not require you to disassemble the trigger group. See the **Cleaning the Rifle** section for specifics.



RIFLE CONTROLS



- | | |
|---|----------------------|
| 1. Top charge handle (model dependent) | 6. Trigger |
| 2. Side charge handle (model dependent) | 7. Magazine release |
| 3. Bolt release | 8. Rear takedown pin |
| 4. Bolt catch | 9. Front pivot pin |
| 5. Safety lever | |

RIFLE USE

Before taking your JP out to the range for the first time, there are several issues discussed in this section that contribute to optimal and enjoyable usage of your new rifle.

DRY FIRE PRACTICE

Dry fire practice is a tool used by all pro-level shooters to enhance their skills. It doesn't cost anything, can be done at home if safety precautions are taken and will make your live-fire practice much more productive and efficient. As mentioned in the section on safety, you should practice your stance, aim, trigger control and breathing with your unloaded rifle to accustom yourself to the weight of the weapon and how to move with it. It is, however, imperative that you conduct such practice in a very controlled situation with a secure backstop and no live ammo or loaded magazines available. You will obviously want to clear your rifle for these sessions, but conduct them as if your weapon were loaded to ingrain safe handling habits. If you choose to perform such practice in your home, such as in your basement, do so only in a secure environment that will unquestionably prevent a fired round from escaping the secured portion of the building uncontrolled or impacting volatile targets like gas lines. Make sure to use a backstop adequate to obstruct and retain expended rounds of the caliber you are using and to situate the backstop against a ballistically secure surface.

The exception to this recommendation is .22 LR rifles. As is recommended with most all rimfire platforms, dry firing of the .22 LR will result in excessive wear to the barrel and firing pin from the latter impacting directly on the barrel collar without the softer metal of a cartridge in between.

AMMO SELECTION AND RELOADING

There is a huge assortment of ammunition and reloading recipes for the calibers common to AR rifles, but this can easily be as much of a detriment as a benefit because some of these may well not function in your rifle despite what the box says. Compared to a manually operated rifle, which will fire anything that the action can force into the chamber, a self-loading rifle must have ammunition that fits within a rather narrow size window. In other words, the cartridge must be a drop fit in the chamber without the projectile interfering with the lands in the throat area.

Beyond cartridge size, port pressure is also far more critical in a self-loading rifle than in a bolt action. Adequate port pressure is critical to even cycle an AR, which will otherwise short stroke and cause failures to eject, stove piping and failures to pick up the next round from the magazine. On the other end, excessive pressure will cause extraction failures and potentially even more serious malfunctions. In our years of shooting experience, we've encountered both over- and under-pressured loads that were simply unusable for AR-type rifles.

As a rule, we strongly recommend using only new, high-quality ammunition or remanufactured ammunition from companies with a reputation for quality. Although reliable function may be achieved with NATO specification ammunition or commercial military equivalent ammunition loaded with typical 55-grain full metal jackets, the full accuracy potential of your JP rifle will only be realized with match-grade ammunition, not generic military loads. In particular, stay away from foreign-manufactured ammo, as it may not meet SAAMI specifications. Moreover, some steel-cased ammo made overseas also has a varnish coating on the case that will cause chamber fouling and eventual extraction failure. In particular, it is best to avoid using the following types of ammunition:

- Israeli ammunition
- Korean ammunition
- PMP
- South African surplus
- Any ammunition with lacquer-coated cases
- Steel-cased ammunition
- Ammunition with steel-jacketed projectiles
- Ammunition with steel-cored projectiles

Pay attention to the caliber and chamber type on your rifle as well and choose your ammunition accordingly. Small-frame JP rifles are typically chambered using the .223 Wylde chamber specification, which will allow the use of ammo with the commercial .223 Remington designation or the 5.56 NATO designation. For those rifles chambered in .300 AAC Blackout, we recommend Hornady's offerings if you intend to shoot subsonic. Some subsonic loads may not function reliably.

Our LRP-07™ and PSC-19™ models are most commonly chambered in either 7.62 NATO or .260 Remington. The former will accommodate ammunition of either the .308 Winchester commercial designation or the 7.62 NATO designation. The latter is a SAAMI commercial chamber only, and ammunition must meet SAAMI specifications to function safely.

If you decide to reload your own ammunition, you must watch the pertinent sections of *GasGunBasics*™ (viewable on www.youtube.com/jprifles) to understand how to load functional, safe and accurate ammunition for an AR-type rifle. The video addresses the 5.56/.223 cartridge specifically but the loading techniques apply to hand-loading for any AR-type rifle including large-frame models like the JP LRP-07™, LTC-19™ or PSC-19™. For further reloading information, our extensive JP reloading document prepared by JP founder John Paul is available on our website. If you are an experienced reloader, do not assume that loads for a manually operated rifle will readily function in a self-loading rifle with its more stringent dimensional and pressure requirements.

Nearly all function and accuracy problems with quality AR-type rifles like ours are ammunition related, and what's more, every AR has its own personality. When it comes to ammo, loads that happen to function in one rifle may well not function in another. Some loads can even vary in performance from one manufacturer's batch to the next. When you find ammo your rifle prefers, stock up.

Bear all this in mind when choosing or evaluating ammo, and when participating in a match, always make sure to have an adequate supply of proven ammo for your rifle to avoid having to buy untried ammo at the event.

.22 LR AMMO SELECTION

The .22 LR action is very accommodating to most ammunition available in that caliber. As a general rule, the action will function most reliably with high-velocity, copper-plated bullets. For improved accuracy, standard velocity target ammo will tend to perform better. Some of the solid, match-grade options on the market include Federal Cartridge AutoMatch, CCI Green Tag, PMC Match Rifle and various loads by Lapua and Eley.

From most high-velocity ammunition, you can expect 2-3 MOA and 1.5-2 MOA out of less expensive target- or match-grade loads at 50 yards. However, the higher quality match loads may deliver MOA performance at 50 yards. Subsonic ammo may or may not function since the working pressure of some subsonic rounds is below the operating range of blowback semi-autos. PMC Moderator, for instance, functions quite reliably if you can find it.

We recommend that you practice firing several boxes of a particular ammunition through your rifle before putting that ammunition to regular use in order to thoroughly gauge its ignition reliability and performance with your rifle. Once you find a round that meets your reliability and accuracy requirements, we suggest buying as much as you can since rimfire can vary substantially between lots.

MAGAZINE SELECTION

Like the ammunition you choose, the magazine can also have a dramatic effect on the function of your rifle. It is important to note that the magazines for the AR-15/M16-type rifles were originally designed to be disposable in combat, so little consideration was given to the long-term durability of mil-spec magazines. Currently, there are a number of higher-quality aftermarket magazines designed specifically for long-term durability and improved function, including the Magpul™ composite magazines, which we recommend. Magazines are relatively cheap, and you will likely own a number of them. Become acquainted with each one, and consider going so far as to number them so you can remember their personalities. Some may be more reliable than others, and if any magazine produces a certain malfunction or fails to lock back on the last round, service or replace it. Generally, the least reliable magazines you will encounter are the reduced-capacity 5- or 10-round magazines.

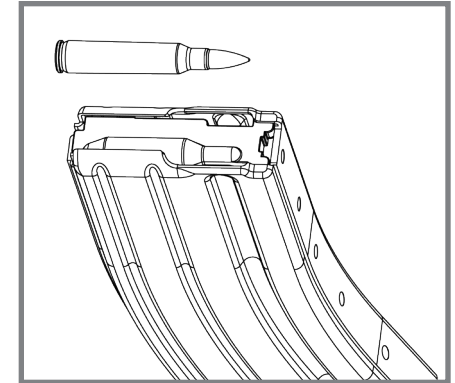
.22 LR MAGAZINE SELECTION

The .22 LR action is designed to function with the Black Dog .22 LR magazine platform or any clone thereof. Other magazines such as the Smith & Wesson will not function.

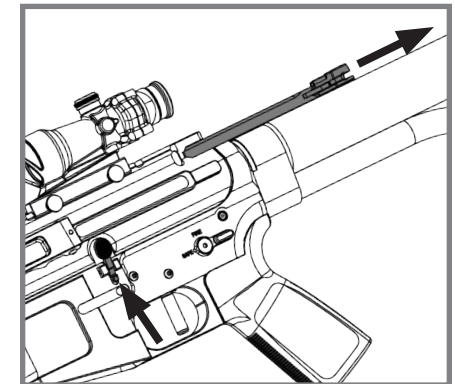
LOADING, FIRING AND UNLOADING

If you haven't already, read the above advisory regarding ammunition selection for your rifle and purchase accordingly. While loading, make sure to keep the rifle pointed in a safe direction, and do not touch the trigger. The following steps will walk you through the complete sequence of preparing your rifle, firing it and reloading it to fire again. If you are using your rifle for the first time, make sure to read the Break-In Procedure section below.

1. With the shorter front end of the magazine facing forward, place a cartridge between the lips of the magazine with the bullet forward. Press the cartridge down until it is held by the magazine feed lips. Place the next round on top of the previous cartridge and repeat until capacity is reached.



2. On the rifle, pull the charging handle rearward and press in on the lower part of the bolt catch to cock the hammer and leave the bolt carrier latched open.

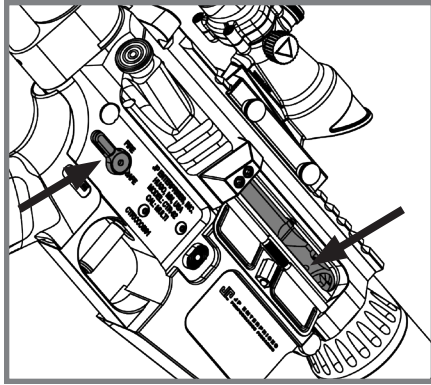


.22 LR BOLT ASSEMBLY

The .22 LR conversion bolt assembly does not function with the standard bolt catch of an AR lower assembly. This means that, unlike a standard AR, it is not possible to lock the bolt open manually with the bolt catch, insert a loaded magazine and then chamber a round by pressing the bolt catch to release it. Likewise, it will not lock back on the bolt catch after the last round is fired, but rather will stop against the magazine follower. As soon as the empty magazine is removed, the bolt will be released and close forward under its own spring tension.

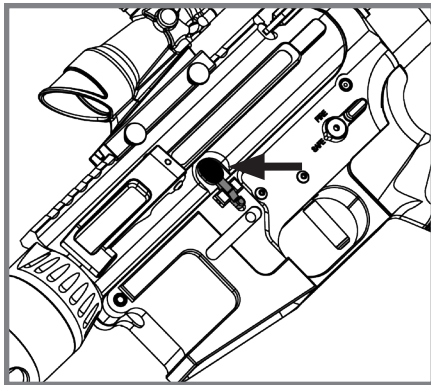
3. Return the charging handle forward until it locks and then remove your finger from the bolt catch.

4. Place the safety selector lever on "SAFE." Note that if the hammer is not cocked, the lever cannot be turned to "SAFE."



5. After verifying that the chamber is clear and the bore is not blocked, insert the magazine, with the bullets pointed forward, into the magazine well and push upward until it is caught and locked in place by the magazine catch.

6. While keeping fingers clear of the ejection port, depress the upper part of the bolt catch, which will release the bolt and carrier to move forward and feed the top round of the magazine into the chamber. Be aware that there is the potential for a slam fire when releasing the bolt to charge the rifle. It is very important that the muzzle is pointed down range or in a safe direction when charging the rifle in case this occurs. Do not point the rifle up in the air when releasing the bolt. The bullet must be safely absorbed by the backstop or the ground in the event of a slam fire when charging.

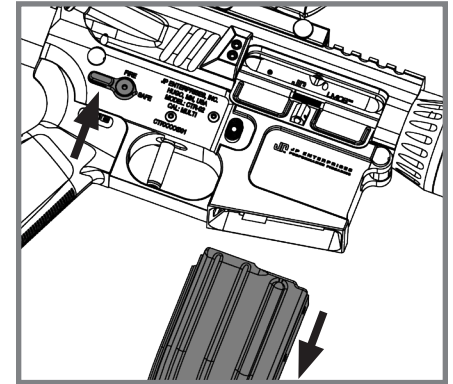


7. Place the safety selector lever in the "FIRE" position.

The rifle is now loaded and ready to fire. Before continuing, verify the safety of the shooting environment, including the quality of the backstop and the absence of people, animals or property in the line of fire.

8. Grasp the pistol grip firmly with one hand and steady the rifle by grasping the hand guard with the other. Seat the buttstock comfortably but snugly against your shoulder. Your sights or optic should be mounted to allow for a firm, but not too tight cheek weld with the stock.

9. Placing your finger in the trigger guard, take aim with the rifle and gradually squeeze the trigger until the first round is discharged. In order to maintain a steady grip on the weapon, avoid jerking the trigger and removing your finger from the trigger between shots. Continue firing until the magazine is empty or you wish to stop. For more information on trigger control, review the pertinent section of *GasGunBasics™*.



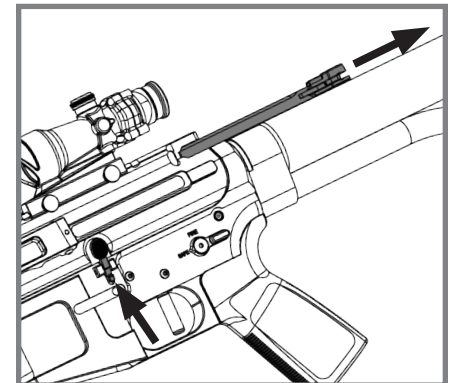
10. Place the safety selector lever in the "SAFE" position.

11. Press the magazine catch, and pull the magazine out of the magazine well.

.22 LR MAGAZINE REMOVAL

When removing the magazine—whether empty or loaded—you must manually retract the charging handle to clear the chamber and visually verify an empty chamber. Simply removing the magazine is not verification of an unloaded rifle, and simply retracting the charging handle does not verify an empty chamber.

12. Pull the charging handle to the rear while pushing in the lower portion of the bolt catch. This will eject a remaining round that may be in the chamber and lock the action in the open position. If the last round in the magazine had been fired while the magazine was in place, the bolt and carrier should have been locked to the rear by the last round lock back function of the magazine follower and bolt catch.



13. When the magazine is removed and the chamber is empty, push the top portion of the bolt catch to allow the bolt and carrier to return forward.
14. Remove any remaining live rounds from the magazine by sliding them forward and out.
15. Collect live ammunition for safe storage and spent cartridge cases for disposal.

After shooting your rifle, always remove the magazine and verify that the weapon is unloaded completely before casing and transporting it. Do not store the rifle with the magazine inserted in the rifle, as this is an indicator of a loaded weapon. If you do keep loaded weapons for duty purposes or home defense, a magazine inserted in any weapon should be an immediate and clear indication that the weapon is ready to fire.

BREAK-IN PROCEDURE

Although modern barrel manufacturing techniques result in vastly improved bore finishes and minimize the need for elaborate break-in procedures, we still recommend a minor break-in procedure to maximize accuracy potential.

Your rifle has been test-fired for function, but the barrel has not been truly broken in. We recommend the following procedure to obtain optimum accuracy potential from your barrel. At your first use, fire 10 to 20 rounds and then clean the bore using solvent and J-B® bore compound, which will have a mild lapping effect in your new barrel. Follow this by mopping the bore using a clean cotton patch with a little more solvent. Repeat this procedure every 20 rounds for the first 60 rounds, then again after the next 300 rounds. The J-B® compound is not necessary for every cleaning, but will also serve as an excellent copper fouling remover when necessary.



CHOOSING OPTICS

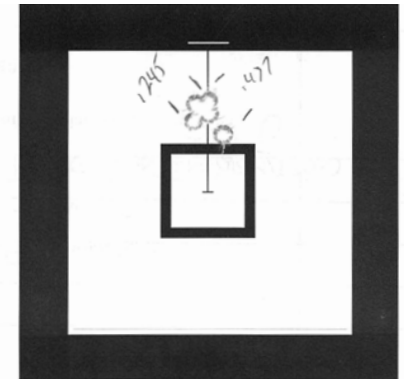
Most JP rifles will be used with optical sights as the primary sighting system. Choose your optics with the intended application in mind. If you expect to shoot tight groups on paper or engage long-range targets of some sort, don't use a dot sight with zero magnification. Dot sights cannot yield the accuracy potential out of any rifle. On the other hand, if you intend to engage moving targets at close range, the dot sight may be ideal while a 6x20 target scope is completely useless. This subject is covered in *GasGunBasics™* in detail. Most people are interested in the accuracy potential of their rifles. Therefore, everyone should have at least one long-range parallax-correctable scope on hand for shooting groups or load development.

ADJUSTING OPTICS

Even the most expensive scope is nearly useless if it is not set up and properly adjusted for the task-at-hand. Refer to *GasGunBasics™* for a detailed discussion of setting up your optics. A detailed discussion of optics selection, application, setup and adjustment is included for your benefit.

ACCURACY

When speaking about accuracy, we refer to it in terms of minutes of angle or MOA. One MOA is just a bit over an inch at 100 yards, two inches at 200 yards and so on. Accuracy functions as a cone of dispersion that a particular rifle is capable of delivering with a certain load by a certain shooter under certain conditions. Obviously, the cone of dispersion will increase in MOA under adverse conditions such as cross winds.



Many things affect accuracy, especially the operator's ability to shoot accurately. Poor trigger control technique with an AR-type rifle is a common cause of poor accuracy. Many bolt gun shooters accustomed to feathering off the trigger with the tip of their finger need to develop a completely new trigger control technique with a self-loading rifle.

Gas-operated rifles are also very fickle about ammo compared to bolt guns. Little can be done to tune a rifle's tastes to a particular load, and we can't guarantee performance with specific ammunition. Our rifles will shoot many types of ammunition well, but be willing to try multiple loads to find the best performer. See the *Ammo Selection and Reloading* section above for more information.

Parallax error in optical sights is another common source of shot dispersion that is often overlooked by the shooter, as are mounting systems that are not stable. Temperature, humidity, wind and lighting can also greatly affect accuracy.

The level of accuracy you can expect from your JP rifle depends on many things. It is unrealistic to say that every rifle will shoot ¼ MOA groups, although that level of accuracy is obtainable with our small-frame gas impingement rifles, and we have produced test groups as tight as .172" at 100 yards. You must have the right elements assembled in the correct order to achieve a certain level of accuracy. *GasGunBasics™* goes into detail on this subject.

With a high-quality, parallax-correctable scope properly mounted, match-grade ammo and good bench technique, sub-MOA accuracy should be possible at 100 yards for a

skilled shooter. However, if you decide to use something like a non-magnifying dot sight and military-grade ammunition, expect accuracy in the 1½ to 3 MOA range.

Atmospheric conditions also have a great effect on accuracy. Although it may be great practical experience to shoot in adverse conditions with high wind and mirage, do not expect to achieve the full accuracy potential of the rifle under those conditions.

Most accuracy testing with rifles is performed at 100 yards. Obviously, the further the target, the more the atmospheric conditions, the consistency of the ammunition and the shooter's ability come into play. Shooting a one MOA group at 100 yards is one thing; achieving one MOA accuracy at 400 yards is about an order of magnitude more difficult. The important thing is to have realistic expectations for a given rifle setup with a given ammunition under a given set of circumstances.

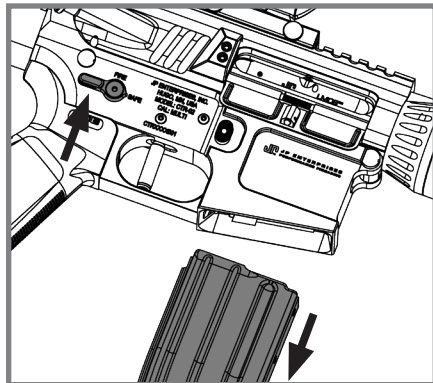
DISASSEMBLY AND REASSEMBLY

Between outings with your rifle, a thorough disassembly of your rifle will occasionally be required for maintenance. The following steps will walk you through the disassembly and reassembly process and help to familiarize you with the internal components of the rifle. Be aware that these processes vary slightly for side-charging receivers (SCR-11™, LRP-07™, PSC-11™, PSC-19™). Where needed, alternate instructions for side-charging rifles appear in sidebars below. Because the PSC-11™ and PSC-19™ feature both styles of charging systems, these instruction supplement (rather than replace) those for the standard top-charging rifles.

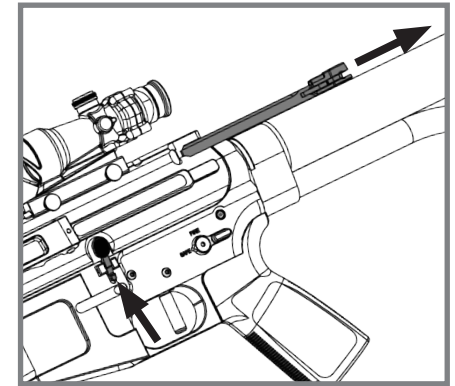
Before you begin disassembly, make sure to clear the rifle as described below. As noted above, the .22 LR bolt assembly cannot be locked back with the bolt catch.

CLEARING THE RIFLE

1. Place the safety selector lever on "SAFE." If the rifle is not cocked, the lever cannot be turned towards "SAFE."
2. Remove the magazine if not already removed.



3. Pull the charging handle rearward and press the bottom of the bolt catch button until the bolt locks.
4. Return the charging handle to the forward position.

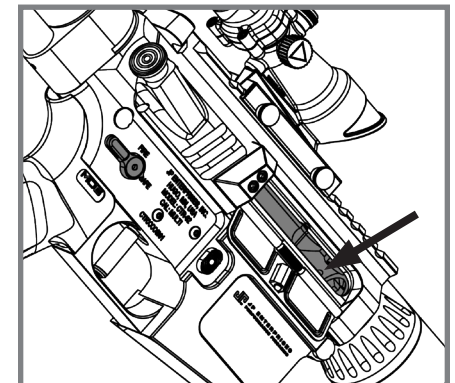


LOCKING OPEN THE ACTION ON SIDE-CHARGE RIFLES

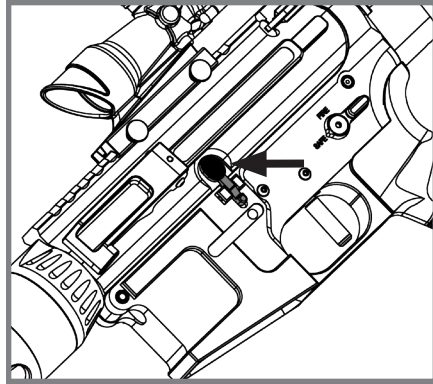
Due to the left-side charging system of the SCR-11™ and LRP-07™, manually locking the rifle action open without a magazine requires one of two different techniques. For the PSC-11™ and PSC-19™, the following techniques are optional since the rifle can also be locked back with the standard charging handle.

- Method 1:** Hold the rifle with your right hand on the pistol grip and your finger out of the trigger guard. With your left hand, pull the action open all the way to the rear. When the action reaches the end of travel, use the middle finger of your left hand to actuate the bolt catch lever by pressing in at the bottom. With practice, this is a very fast manual lock back technique that allows you to retain your shooting/control grip on the weapon.
- Method 2:** This technique is preferable if you have small hands and can't reach the bolt stop with your middle finger while holding the charging handle to the rear. Begin by securing the rifle buttstock under your right arm. Pull the action open all the way to the rear using the charging handle. Reach underneath the rifle and cup the magazine well with your right hand, and then use the index finger of your right hand to actuate the bolt stop.

5. Visually inspect the receiver and chamber to ensure that no cartridge is present. Remember that just because no round is ejected from the receiver when locking the bolt back does not mean that there is no round in the chamber. There is no substitute for visually inspecting the chamber.



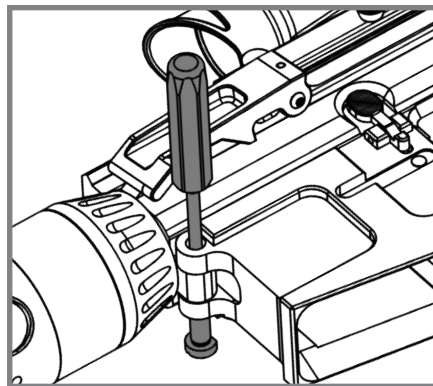
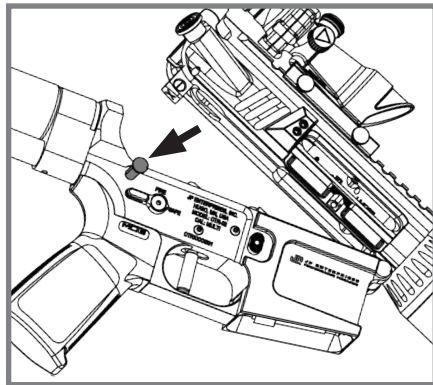
6. Release the bolt by pressing the upper portion of the bolt catch.



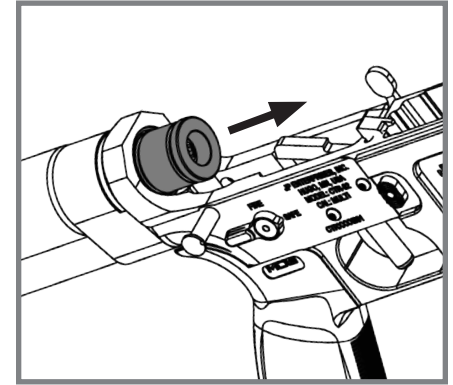
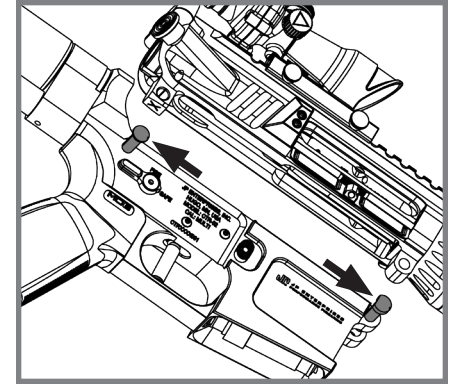
DISASSEMBLY

As you begin the "field strip" described in the following steps, take care to lay out the removed components in an organized way as some can easily be misplaced and lost.

1. Press the rear takedown pin in from the left of the lower receiver and pull it out the right side until it comes to a positive stop. The pin cannot be completely removed as it is retained by a detent plunger. It may be necessary to use a punch to remove the takedown pin if the receiver fit is tight. If you use tools to perform this task, be very gentle, as it is possible to break the detent plunger out of the side of the receiver with excessive force. Such damage is not covered under any warranty and will require the replacement of the lower receiver.
2. Pivot the lower receiver down and away from the upper receiver.
3. Press the front pivot pin in from the left side of the lower receiver, and pull it out the right side until it comes to a positive stop. Again, this pin is retained by a detent plunger and cannot be completely removed.



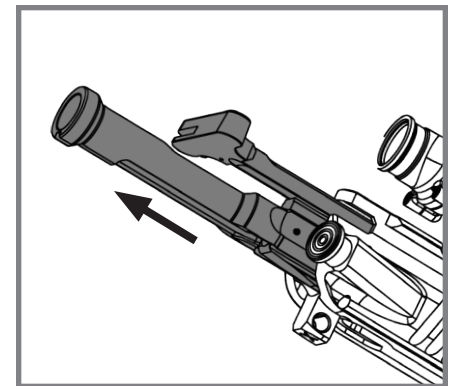
4. Separate the upper and lower assemblies. Take care that the bolt carrier assembly does not fall out the back of the upper assembly.
5. On the lower assembly, hold the buffer in its current position to prevent it from ejecting suddenly when the buffer retainer is depressed. Depress the buffer retainer to permit the buffer to move forward. Then, depress the hammer to allow the buffer and spring to extract easily from the extension tube.



If your rifle is equipped with the JP Silent Captured Spring, the buffer retainer and spring will not be present, allowing you to remove the Silent Captured Spring more easily.

Removing the buffer and action spring or Silent Captured Spring is not necessary for regular maintenance. It need only be removed for inspection every 1,000 to 2,000 rounds (or at least once a year) unless there is a specific problem requiring access to it.

6. On the upper assembly, pull the charging handle to the rear and remove the bolt and carrier assembly or bolt assembly in the case of a .22 LR.



7. Remove the charging handle by pulling it backwards and down out of the upper receiver.

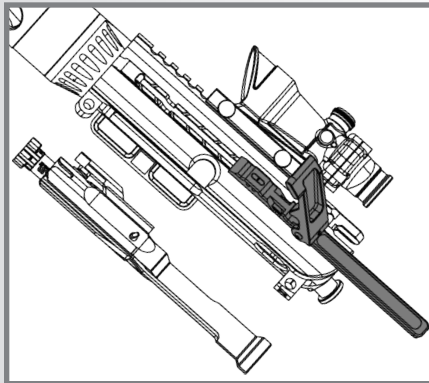
.22 LR BOLT DISASSEMBLY

The .22 LR bolt assembly can be removed and inserted into the upper receiver in much the same way as the bolt carrier group of a gas-operated AR. When the upper is fully assembled, the carrier key should be oriented upward and settle into the grooved underside of the top-charge handle. When servicing either of these models, cleaning of the bolt assembly does not require you to disassemble its component parts, and such a complete disassembly is not recommended as part of regular maintenance.

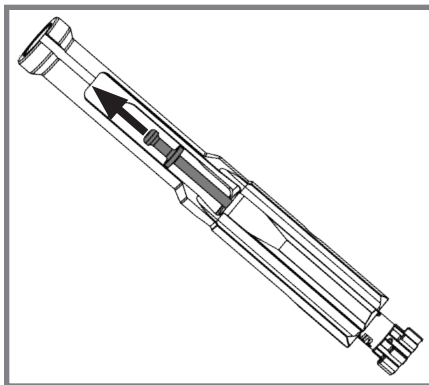
DISASSEMBLY OF SIDE-CHARGING RIFLES

The takedown of the side-charging SCR-11™, LRP-07™ and PSC series varies slightly from a standard top-charging rifles. For the SCR-11™ and LRP-07™, the directions below replace steps 6 and 7 on page 24. For the PSC series, the disassembly directions below are in addition to steps 6 and 7.

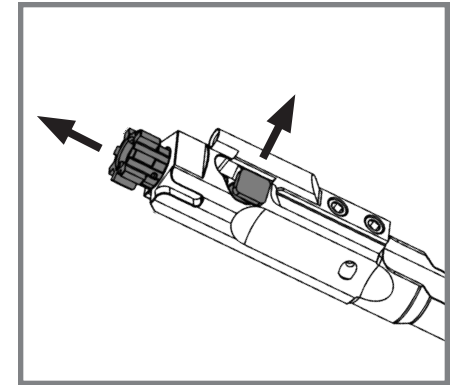
1. Extract the bolt carrier assembly before attending to the charging assembly.
2. Move the charging handle assembly to the rear where there is a takedown notch. With the handle held out, lift the charging handle slider off the receiver rail through the takedown notch.



8. Push the two-pronged end of the firing pin retaining pin into the bolt carrier and out the other side.
9. Tilt the bolt face up and remove the firing pin. Tapping the back of the bolt carrier on a hard surface will help dislodge the firing pin, and it should fall out the rear of the bolt carrier assembly.

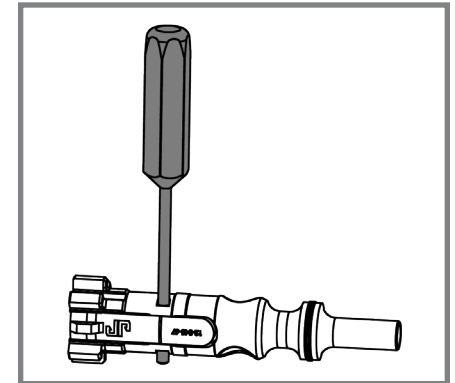


10. Push the bolt in towards the carrier until it rotates and comes to a stop. Then, turn the cam pin 90°.
11. Remove the cam pin by lifting it out and away from the bolt and carrier.
12. Pull the bolt forward out of the carrier.

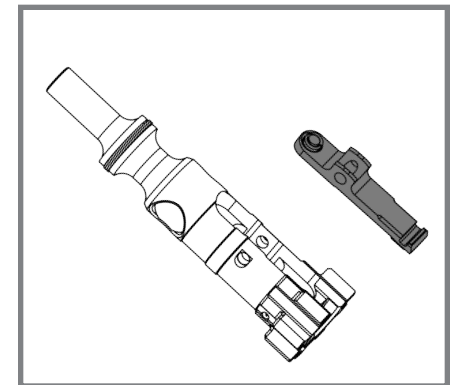


The remaining steps describe removing the extractor. Normal servicing need not include removal of the extractor or ejector from the bolt assembly. These can be left in assembly unless you intend to replace these parts as part of long-term maintenance or are experiencing extraction or ejection failures that may require closer inspection of these parts.

13. With a punch, remove the extractor pin from the bolt assembly but not the ejector retainer pin. Refer to the graphic if needed.
14. Remove the extractor and spring, but do not remove the spring from the extractor.



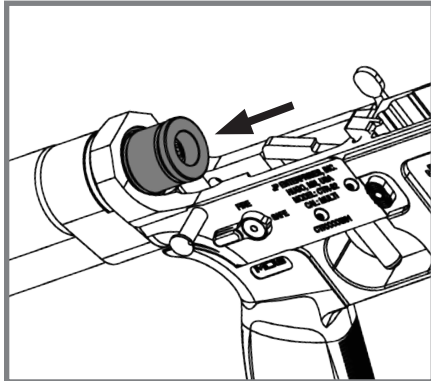
15. Press the top of the extractor spring rubber tip to test spring functionality.



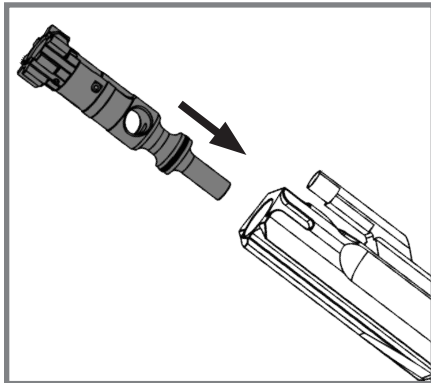
Unlike many other rifles of this kind, removal of the JP Modular Hand Guard is not necessary for routine cleaning and maintenance. During installation, Loctite® is used to secure the hand guard components, and they should only be removed in order to address a specific gunsmithing concern that necessitates access to that area of the rifle.

REASSEMBLY

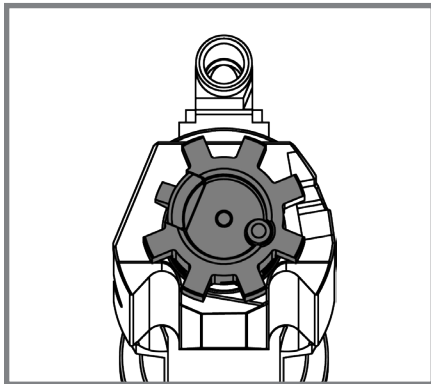
1. Reinsert the buffer and spring assembly into the buffer extension tube until the buffer retainer plunger snaps up in front of the buffer to secure it.



2. Reassemble the extractor and spring in the bolt, reinserting the extractor pin.



3. Insert the complete bolt assembly into bolt carrier.

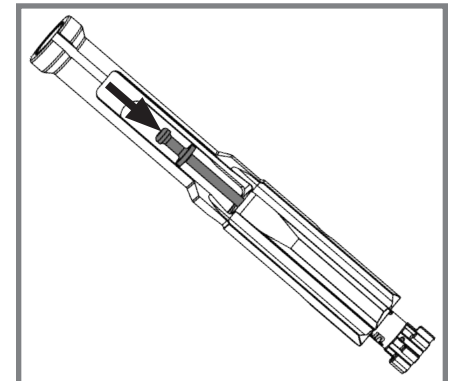


4. Rotate the bolt so that the ejector pin is in the lower right while looking at the bolt face. Align the cam pin hole with the cam pin slot in the carrier and insert the cam pin. Rotate 90° so that the firing pin hole is in alignment with the firing pin channel in the bolt assembly.

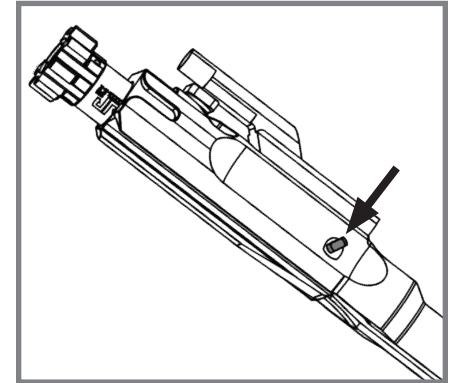
.22 LR BOLT ASSEMBLY INSTALLATION

It is normal for the .22 LR bolt assembly to protrude from the back of the receiver about a quarter inch before closing the upper.

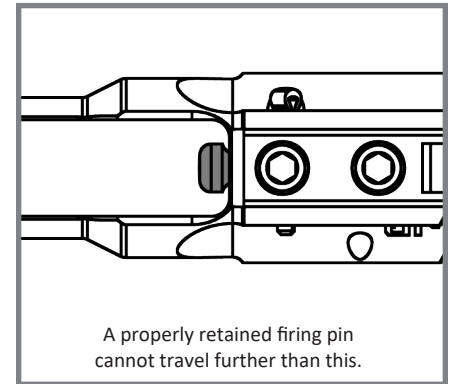
5. Insert the firing pin into the rear of the bolt carrier assembly and press it all the way forward until the skirt rests on the back of the bolt tail stock.



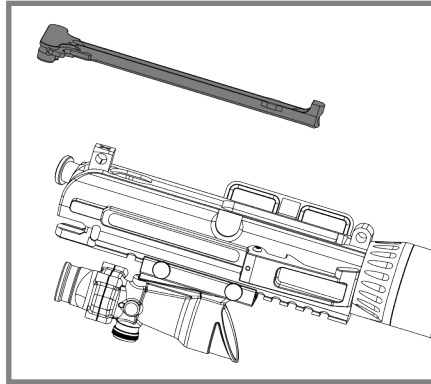
6. Insert the firing pin retainer pin through the back side of the bolt carrier with the split opening vertically. Apply a slight downward pressure on the exposed loop of the pin to guide it through the hole on the opposite side of the bolt carrier.



Test the assembly by rotating the bolt in and out of the carrier and, with the bolt assembly in battery, press the firing pin forward to verify that it protrudes from the front of the bolt face. Tap the back of the bolt and carrier assembly on a hard surface to verify that the firing pin is properly retained.



7. Insert the charging handle assembly into the receiver by locating the tabs over the cutout in the top rear of the upper receiver and pressing the tabs down into the charging handle slot. The charging handle should now slide freely in and out of the upper receiver.

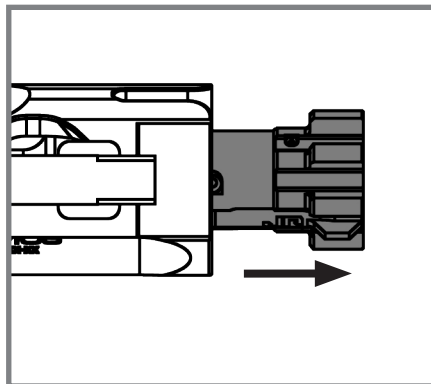


Failure to properly assemble the bolt and carrier assembly will cause serious malfunctions at the very least and severe damage to the rifle and possible injury at the worst. In particular, if the cam pin is not installed, the rifle will still fire, but the bolt will not be in the locked position. If this happens, catastrophic destruction of the rifle will occur leading to the possible injury or death of the shooter or bystanders.



Example of catastrophic failure due to missing cam pin in bolt/carrier assembly.

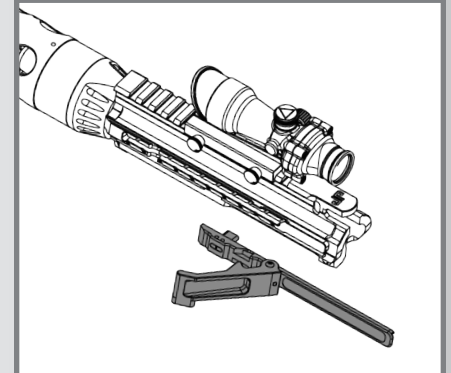
8. Pull the bolt assembly into the fully forward position as part of the bolt and carrier assembly and insert the entire assembly into the upper receiver. Note that the carrier key and cam pin must be in alignment with the charging handle slot in the upper receiver to insert it into the receiver. Press the bolt carrier and charging handle fully forward to the locked, in-battery position.



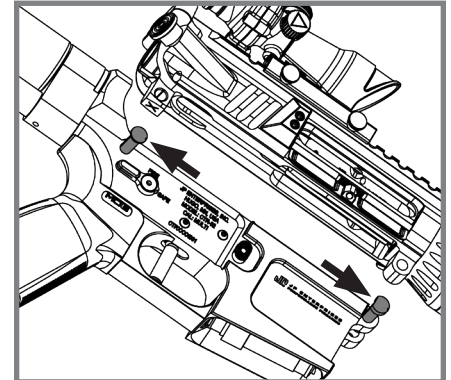
REASSEMBLY OF SIDE-CHARGING RIFLES

To reassemble the upper assembly you will reverse the disassembly process above. The directions below replace (SCR-11™, LRP-07™) or come in addition to (PSC series) step 7 above.

Lift the handle away from the charging handle/slider assembly holding it out from the slider. Lower the slider onto the takedown notch of the receiver rail and slide it forward until it comes to a stop in the forward position.



9. Place the complete upper assembly on the complete lower assembly and press the rear push pin in first, then the front pivot pin in next to fully capture the upper on the lower. If the pins are too tight to insert with finger pressure, use a plastic or rubber mallet to tap in the pins.



10. Check for proper assembly and function by pulling the charging handle to the rear and releasing. Dry-fire the rifle while pointing it in a safe direction and repeat the process, finally locking the action open.

CLEANING AND MAINTENANCE

Due to the limited use of carbon steel components on a JP rifle, cleaning after every use may not be necessary, and you can even damage a barrel by over-cleaning it. However, if you only shoot very occasionally, you should certainly clean and lubricate the rifle before storage.

If you shoot bullets that are not moly-coated, you should clean the bore of your rifle about every 300 rounds. If you shoot nothing but moly-coated bullets, cleaning is only required every 500 rounds or so. Lubrication is recommended before every use even if you don't clean the rifle. In normal environmental conditions (see below), lubricate your bolt and carrier assembly before every use and the trigger mechanism every 300 rounds with a good sear lubricant.

If you're on a varmint hunt and expect to fire hundreds of rounds in a sitting, lubricate your bolt and carrier assembly at least every 200 to 300 rounds. It is not necessary to take the bolt and carrier out of the rifle to do this; merely place a drop of good gun oil over the exhaust ports of the carrier and work the carrier back and forth a few times to disperse this oil in the bore of the carrier. This will dislodge fouling in the bore of the carrier, and subsequent live fire will blow that oil into the upper receiver further lubricating the bearing surfaces of the carrier. Running the upper receiver wet is the best thing you can do to increase the longevity of your operating system and receiver.

Rifle maintenance can be divided between short-term and long-term procedures. Short-term maintenance includes cleaning the bore and operating system at least every 300 rounds or more depending on the extent and frequency of use and storage periods. Long-term maintenance would include such things as cleaning and lubricating the buffer and action spring, detail stripping of the bolt assembly, cleaning the crown of the rifle, and thoroughly cleaning the fire control cavity and components of the lower receiver. These services may be required after 1,000 to 2,000 rounds. With proper short- and long-term maintenance, your JP rifle will give many years of great service.

CLEANING THE RIFLE

To perform the cleaning regimen described below, begin by field stripping the rifle as described in above. You will need the following tools and substances:

- Good-quality gun oil with low- to medium-viscosity (Do not use high-viscosity oils that might be used for handgun applications.)
- Gun cleaning solution (Avoid using carburetor cleaner or any ultra aggressive solvents formulated for other industrial cleaning. Damage from inappropriate solvent use is not covered under warranty.)
- Cleaning rod with a tight jag (not the slotted-type jags)
- Cotton flannel patches cut to fit snugly into the bore

- Small toothbrush
- Dental picks
- Brass wire bristle bore cleaning brush
- Chamber cleaning brush
- Chamber mop
- Variable-speed drill (optional)

CLEANING THE UPPER ASSEMBLY

1. Attach the brass wire bristle brush to the cleaning rod and dip the brush in gun cleaning solution. Inserting the brush from the breech/receiver end only, thoroughly scrub out the barrel, passing the brush all the way through before reversing motion. If you try to change direction with the brush in the barrel, it will stick. Also, avoid contact between the cleaning rod and the muzzle, as resultant wear will reduce accuracy.

Using a JP Cleaning Rod Guide as a tool to insert into the upper receiver is recommended to prevent the rod from damaging the crown, throat or chamber of the barrel. Damage to the crown, which can also result from inserting the cleaning rod through the muzzle for cleaning, can dramatically affect accuracy and is expensive to remedy.

2. Attach a cotton flannel patch to the end of the cleaning rod. Saturate the patch with bore solvent. Insert it through the rod guide in the chamber and pass the rod and patch through the barrel. Repeat the process with a fresh patch until the last patch comes out clean.
3. Visually inspect the barrel. If it is clean, proceed to step 5. If it remains dirty, continue with step 4.
4. Attach the larger chamber cleaning brush to the cleaning rod, dip the brush in bore cleaning solution and clean the chamber. Use a maximum of five plunge strokes and three full clockwise rotational strokes. You may wish to use a variable speed drill for cleaning the chamber if you're careful. If so, chuck up the last section of rod with the chamber brush installed on the end. Plunge the brush in and out of the chamber several times while running the drill at medium speed. This will remove any chamber fouling in seconds and dislodge debris from the locking lug area of the barrel extension piece. If you have compressed air available, you can use it to blow out the locking lug area at this time, but make sure to wear eye protection while doing so.

If you find your bore still does not come clean, it may be heavily fouled by copper or lead, in which case a product like J-B® bore compound should be used to remedy the buildup. Refer to the instructions on the package.

5. Now, use a chamber mop to remove any remaining solvent from the chamber. Run a final dry patch through the bore to catch any solvent or dirt from the chamber that may have proceeded up the bore.

If you intend to store your rifle for an undetermined or extended period before its next use, now is the time to prep the bore for storage. Lightly moisten a flannel patch with gun oil and pass it once through the barrel to leave a film of oil on the inside surface.

6. After dipping a toothbrush in gun cleaning solution, use it to clean carbon and powder residue from the following areas:
 - Bolt locking lugs
 - Lip of the extractor
 - Gas rings
 - Opening of the bolt carrier key
 - Firing pin
 - Interior of the bolt carrier from both front and rear
 - Bolt cam pin
 - Around the gas tube opening in the upper receiver

.22 LR MAINTENANCE

When servicing your .22 LR rifle, cleaning of the bolt assembly does not require you to disassemble its component parts, and such a complete disassembly is not recommended as part of regular maintenance. To clean the bolt, simply use a nylon brush, solvent and a rag to thoroughly scrub and scour the entirety of the bolt assembly, paying particular attention to the bolt face and extractor. Dry the surface of the bolt completely with compressed air, and re-lubricate with an oil cloth. Make sure to leave a light film of oil over the entirety of the bolt assembly to lubricate and avoid the possibility of corrosion.

7. Use a dental pick to clean the crevices in the bolt face and extractor claw to remove any brass shavings and carbon buildup from the bolt face. A dental pick may also be used to remove hardened fouling not removed by the toothbrush.

When cleaning aluminum surfaces such as the receivers, do not use a wire brush. If cleaning is necessary, you can avoid scratches and wear by using a small toothbrush or flannel patch.

8. Wipe all components clean and dry. Inspect them for excessive wear, corrosion or mechanical damage. See the Inspection of Critical Parts section below. If any of these faults are discovered, have them corrected before firing again. If components need to be repaired or replaced, contact JP Enterprises, Inc. or a qualified gunsmith to make arrangements.

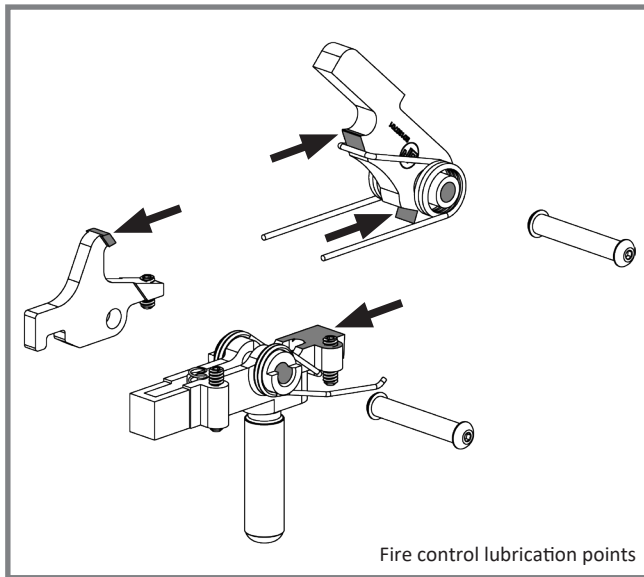
9. Lubricate the following parts with gun oil:
 - Ejection port cover latch (if applicable)
 - Ejection port cover spring (if applicable)
 - Forward assist (if applicable)
 - Charging handle catch and spring
 - Inside rear of the bolt
 - Mouth of the carrier key
 - Action springs and pins
 - Bolt carrier bearing ways
 - Gas rings on bolt assembly
 - Cam pin bearing surfaces
10. Verify that no fibers or brush bristles have become lodged anywhere in the firearm such as the bore. Remove any excess lubricant or solvent.
11. Reassemble the rifle as described above.
12. Remove any gun cleaning solution, oil or fingerprints from the outside surfaces of the firearm. Finger moisture, if left uncleaned, could cause corrosion.

CLEANING THE LOWER ASSEMBLY

Regular cleaning of the lower assembly does not require removal of the fire control components. Because of the fine-tuned relationship between these parts, removal or adjustment of the fire control mechanism should only be performed by JP Enterprises, Inc. or a qualified gunsmith.

1. Remove the buffer components as described in the disassembly instructions.
2. Wipe lubricant and dirt from the buffer components with a clean piece of cloth.
3. Wipe out the extension tube using several large cleaning patches on your cleaning rod or a piece of cloth.
4. Use gun oil or graphite to lubricate the buffer components, depending on your conditions. Do not use grease on these parts, as it will cause malfunctions in cold conditions.
5. Making sure that you have not left any patch or material in the buffer extension tube, reinstall the buffer and spring.
6. Use a degreasing agent or solvent such as Birchwood Casey® Gun Scrubber to clean out any debris such as dirt, unburned powder, brass shavings or primer parts from the fire control cavity of the lower assembly. If you have access to compressed air, use it to remove all foreign material from the fire control cavity. Again, make sure to wear eye protection while using compressed air.

7. Using a good sear lube like Armité L-P 250 Sear Grease, lubricate the sear and hammer notch and the hammer/disconnector surfaces. You may use a good lithium grease for this application if nothing else is available. Reapply at every cleaning. Between cleanings, keep the fire control group oiled.



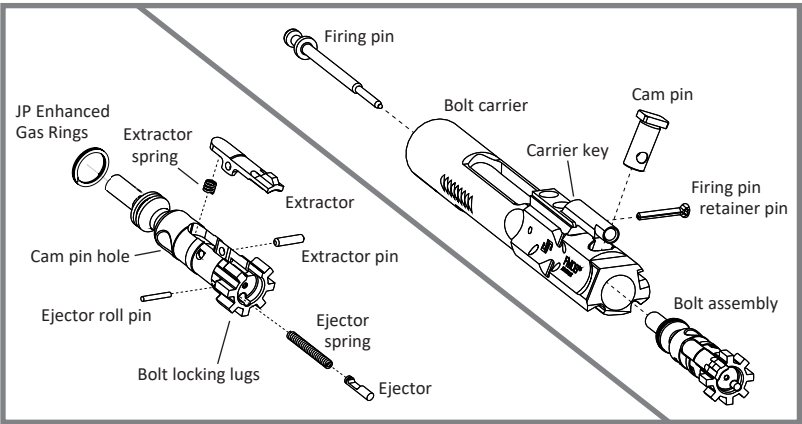
8. Place a drop of gun oil on the trigger and hammer pivot pins. Do likewise for the takedown and pivot pins in the receiver.
9. Place a 1/16" hex driver on both sides of the JP Anti-Walk Pins and attempt to turn counter clockwise to verify that the screws are still properly secured. If either side backs out with little or no force applied, remove the screws and thoroughly degrease the threaded hole and the screw using a solvent such as lacquer thinner. Apply an appropriate thread locker product (such as Loctite® 242) and allow it to cure as instructed by the manufacturer before further use. Check the screws again after the thread locker sets up.
10. Finish reassembling the rifle as described in the reassembly instructions.

REPLACEMENT OF PARTS

Unlike a bolt-action rifle, which many view as a lifetime purchase, a self-loading rifle is usually subjected to much more use, and certain parts must be viewed as consumable. Various components should be replaced as part of a long-term maintenance program to prevent their eventual failure as they exceed their service life. With that in mind, the regimen detailed below specifies approximately when the various components of your rifle ought to be replaced, not necessarily how long they will last before failing. Like any machine, rifles and their parts are not identical, and while the function and even the components may be the same, no two items will never fail at exactly the same time.

It is advisable to have spares of certain parts on hand when shooting your rifle. With a simple parts kit, the vast majority of parts failure problems due can be solved in minutes. A gas gun kit should include replacement gas rings, extractor/spring set or a complete bolt assembly, firing pin, cam pin and firing pin retainer pin. You may also want to have a complete bolt/carrier assembly in reserve. For the sake of versatility, you may even decide to have alternate bolt carrier groups, as they can be interchanged in minutes.

PART NAME	REPLACE: BY ROUND COUNT	REPLACE: BY INSPECTION
Bolt Assembly (Mil-spec)	8,000	Damage apparent to lugs or cam pin hole, cracks or peening/deformation. Multiple deep pits or a solid deep ring of pitting around the firing pin hole, caused by gas leakage around the primer.
Bolt Assembly (JP EnhancedBolt™)	10,000+	See above.
Bolt Carrier	50,000	The carrier's internal gas ring bore shows heavy wear. If the carrier key comes loose, it must be completely cleaned and reassembled with thread locking compound and proper staking applied to the screws.
Barrel	See below.	Inspection of bore just past the chamber area indicates significant or complete absence of rifling.
JP Muzzle Device	12,000	Look for excessive erosion of the internal baffle surfaces. Replacement is not necessary until the exit hole is burned through completely.
Gas Tube	10,000	Bulging or pin holes visible, excessive wear at the bolt carrier end. If properly aligned, wear will be fairly low, but this is a very inexpensive part to stockpile.
Extractor	5,000	Any warping, cracking, wear to the hook, or when extraction difficulties begin.
Extractor Spring	5,000	Replace when replacing extractor or when extraction difficulties begin.
Ejector and Ejector Spring	5,000	Inexpensive part, replace pin and spring as. Broken ejector pieces can jam the action or fire control parts.
Cam Pin	10,000	Engraving to pin caused by the bolt cam pin hole will eventually result in the breakage of the cam pin or possibly cause the entire bolt and carrier assembly to become seized.



Gas Rings	5,000	Inexpensive part. JP Enhanced gas rings will have a longer use life but by design will not pass the standard carrier drop test. See the <i>JP Enhanced Bolt™</i> description in the <i>JP Rifle Components</i> section above.
Firing Pin	10,000	Chipping of plating material. Replace immediately if a ruptured primer is encountered or if any noticeable deformation or pitting is observed in tip.
Firing Pin Retaining Pin	5,000	Inexpensive part. Significant bending or breakage.
Buffer Spring	15,000	The rifle begins to feel sluggish or no longer strips a fresh cartridge from a magazine reliably.
Trigger and Hammer Springs	-	Will weaken over time, but generally not enough to cause a safety concern unless overall trigger pull weight drops below three pounds. This may prevent ignition of the primer, or trigger bumping.
Trigger and Hammer	20,000	Excessive wear to the sear engagement surfaces. Lubrication can lengthen this lifetime considerably.
Disconnecter	5,000	The trigger and hammer do not reliably reset, and the hammer follows the carrier forward, there is noticeable wear on the disconnecter hook, or the rifle slam fires or fires multiple shots per trigger pull. This is The most critical piece in the rifle.
Disconnecter Spring	10,000	See above.

In evaluating the replacement of your components, take into consideration the frequency and severity of your rifle use. This will have a strong bearing on your replacement schedule as heavier and sustained use will produce more wear than lighter, more infrequent use. This regimen reflects a rifle used on a “regular” basis of several dozen to several hundred rounds per month under unremarkable circumstances. When replacing any component retained by a roll pin or spring pin, replace said pin as well.

This replacement schedule is specific to a gas gun platform with its numerous small components as compared to the .22 LR platform. The .22 LR bolt assembly is not designed for disassembly and small parts replacement. In case of failure, contact JP to determine the best repair/replacement option.

BARREL LIFE

Barrel life is a matter of personal need and the quality of maintenance and ammunition. An average 16” carbine barrel will fire many thousands of rounds with no degradation in accuracy if a more relaxed course of fire is observed. Indeed, the majority of barrels and rifles in private hands will generally have a usable lifespan that exceeds the original owner. On the other hand, a barrel may show degradation after just 3000-5000 rounds if exposed to constant fully automatic fire or repeated “mag dumps.” Hot loaded ammunition, such as over-pressured and poorly manufactured hand-loads, or even NATO pressured ammunition will also noticeably reduce barrel life. Competition shooters, particularly in the 3-Gun arena, might expect only a few years before sufficient accuracy degradation occurs—say, one MOA in average group sizes. Barrels used for training purposes that might see 1000-2000 rounds a session often need replacement once or more each year.

If you need the maximum potential accuracy, typical barrel life expectancy is considered 3,000 to 6,000 rounds. However, we have many users who have over 20,000 rounds through JP Supermatch™ barrels and are still achieving sub-MOA accuracy. A rifle that still shoots into ¼ MOA is very accurate in terms of field use, and there is no need to replace a barrel until it literally no longer provides a level of accuracy required for your application.

Barrel replacement should only be performed by JP Enterprises, Inc. if you expect original equipment performance. In most cases though, by the time you have worn out a barrel, you really need a complete new upper assembly. Replacing a barrel is usually not cost effective.

CLEANING THE CROWN

On barrels equipped with muzzle brakes, there is a condition we refer to as the “false crown,” which needs to be addressed occasionally. As the rifle is fired, the carbon and vaporized jacket material forms a coating on the actual crown of the barrel. As long as this “false crown” remains uniform in shape and geometry, the barrel will continue to shoot accurately. At some point, this buildup will become too thick, and a chip will detach next to the bore. This will cause reduced accuracy identical to that caused by a flaw or defect in the actual crown. When this happens, the brake must be removed and the crown thoroughly cleaned. Until this becomes necessary, we do not recommend removing the brake unnecessarily as it may be damaged if done improperly, and the precise timing and seamless blend of the brake with the barrel will eventually be lost.

Cleaning the crown is usually required every 2,000 to 3,000 rounds depending on the fouling characteristics of your particular ammunition. We recommend sending the upper assembly to us for our Upper Assembly Service Package, which includes a complete cleaning of the upper assembly components, replacement of gas rings, cam pin and firing pin retainer pin, removal of the brake (where possible), cleaning of the crown, recutting of the crown if necessary and inspection of the bore with a bore scope. Reference our website or call us for shipping instructions and pricing.

If you decide to attempt this procedure yourself, the muzzle brake must be removed from the barrel. Assuming it is not pinned and welded, it is threaded and removable. However, Loctite® 243 is used to secure the brake at the time of installation. To begin, lock the upper receiver in a padded vise using JP Vise Clamps if you have them. Do not use too much force as you may crush the receiver. You must heat the attachment area of the brake with a propane torch to soften the Loctite®. To avoid damage to the compensator, we recommend using a tightened crescent wrench on the flats of the compensator with some sort of shim material between the wrench and compensator to avoid damage. Cardstock like a business card works well. The brake will unscrew by rotating counter-clockwise.

Once removed, you will have access to the crown of the barrel. In some cases, the false crown actually comes off with the brake and appears like a washer with a hole in it in the threaded area of the brake. In other cases, the buildup will remain on the surface of the crown, and it must be removed with care. First, let the crown soak in a bore solvent bath for a few hours. This may loosen the material so it chips off with a piece of hard plastic like the end of your cleaning brush. Work from the outside towards the bore, but do not touch the actual edge of the crown and bore with any metal object that could put a nick in the crown. If this happens, the crown must be recut.

After the buildup has been removed, polish the crown gently with a piece of Scotch-Brite® by holding the material on the crown and turning the barrel into it. Inspect the crown for any damage at this time before remounting the brake. Again, clean and degrease the threads and coat with Loctite® 242 to prevent the brake from vibrating loose under live fire.

CLEANING THE MAGAZINE

It is advisable to also clean the magazine(s) whenever the firearm is cleaned. To do so, make sure that the magazine is empty and remove the bottom plate by pressing in on the spring catch located beneath the small round hole, and sliding the plate off the magazine while controlling the magazine spring. Remove the spring and magazine follower. This may seem difficult at first, but it can be accomplished without the use of extreme force. Clean all the internal components and wipe the spring with a light coat of oil. Leave all other components dry and reassemble the magazine in reverse order. Use powdered graphite to lubricate the magazine after it is loaded. Never use oil on the magazine body or follower.

SPECIAL CLEANING CONSIDERATIONS

Beyond regular maintenance, you should be aware of certain conditions that will necessitate immediate or specific cleaning procedures. Before firing your rifle, you should check the barrel and chamber to ensure that they are clean and dry. After firing, expect to disassemble and clean the rifle within a 24-hour period to make the job easier and to allow less time for any corrosion to start. Check it again within a few days to ensure that no further cleaning is necessary. If your firearm has not been used for some time, you should perform a routine cleaning at least once or twice a year in a temperate climate. If you carry a loaded firearm, unload it and clean it when necessary or at least once a month. If you get your firearm wet, clean it as soon as possible. Below is a listing of environmental factors and how they should affect your firearm maintenance routine.

Extreme Cold

- Clean and lubricate your rifle with a degreasing agent and keep it free from moisture like condensation. In freezing conditions, apply a dry lubricant sparingly in place of oil. We recommend powdered graphite like a locksmith would use. Most oils will harden and cause excessive hydraulic friction and subsequent malfunctions.
- At intervals, operate the rifle's controls through their entire range to keep them from freezing up.
- If your rifle is being kept outside unused, protect it with a cover. If you are using the rifle in extreme cold conditions, it is wise not to bring it into a warm humid situation like a cabin, but rather leave it cased or racked in the cold.

Hot, Humid Climates

- Inspect the rifle and any bipod you may use more frequently, especially the hidden surfaces of the bolt carrier group, forward assist assembly (if applicable) and lower receiver components. Make sure they are lubricated with gun oil. Use a good gun oil or rust preventative on any carbon steel components to prevent corrosion.
- When handling, make sure to wipe dry, as moisture can cause corrosion. After drying, lubricate with gun oil.
- Because of the adverse effects of humidity, be prepared to perform routine cleaning as often as every week. In particular, salt spray environments may require daily service even on stainless components.

Hot, Dry Climates

- Perform regular cleaning more often and make generous use of gun lubricant when oiling the rifle.

Dusty or Sandy Environments

- Clean and generously lubricate the rifle more frequently.
- Keep sand away from the rifle's interior parts when inspecting, lubricating or assembling the rifle. Apply only a light amount of lubrication on the outside of the rifle.
- Use a magazine bag and muzzle cap for dust and sand protection.

STORAGE

Store your firearm and ammunition separately in a securely locked location out of the reach of children and other unauthorized users. Do not store your firearm in an airtight container, and do not seal or attempt to seal the barrel to exclude dust, as the internal steel surface is more likely to corrode. If you intend to store the firearm long term, purchase a sealing anti-corrosion bag designed for that purpose. When taking the firearm out of storage, be sure to run a clean swab through the barrel to remove any oil film before use.

TROUBLESHOOTING

This section is intended to address some of the most common problems encountered by the operators of self-loading rifles. Many of the problems are easily remedied with a combination of patience, minor adjustment and observation. If you would prefer to have JP Enterprises, Inc. or a qualified gunsmith inspect your rifle, make sure to carefully note all details regarding the malfunction as well as the positions of the cartridges and mechanisms involved.

The rifle fails to fire when the trigger is pulled...***Hangfire***

If, while operating your rifle, you depress the trigger and hear the hammer fall, but the weapon does not discharge, keep the muzzle pointed towards a safe backstop for 30 seconds. If a hangfire (slow ignition) has occurred, the weapon will discharge in that time. If it does not discharge, remove the magazine, lock the bolt back, clear the chamber and examine the primer of the faulty round. If the indent from the firing pin is light, off-center or non-existent, have your firearm examined by a qualified gunsmith. If the indent seems consistent with previously fired rounds, assume that the cartridge was faulty and segregate it from other ammunition and shells. Dispose of misfired cartridges as instructed by the manufacturer. If you extract a cartridge with no bullet, a projectile may be lodged in the bore. Refer to the "Projectile Lodged in Bore" section below.

Failure to Go Into Battery

If you have depressed the trigger, heard the hammer fall but the rifle has failed to fire, the action of your rifle may have failed to go into battery, meaning the action is not in the closed and locked position. If you observe that the bolt carrier is not all the way forward, do not attempt to force it closed. The SCR-11™, CTR-02™ and LRP-07™ do not have a forward assist for that reason, and this feature is not required on a civilian recreational rifle. The PSC-11™, PSC-19™, LTC-19™ and JP-15™ series do have the forward assist, but it should not be used to resolve a failure to go into battery. Doing so will only lock a live round in the rifle, which will need to be disassembled to solve the problem and remove the chambered round.

If your rifle does not go into battery, it may have debris or some other obstruction in the chamber. However, the most common cause of this problem is out-of-spec ammunition, which means the cartridge does not fit the chamber for some reason. If you are reloading or have purchased reloaded ammunition, the sizing die may not be properly set. Verify the sizing of your ammunition before continuing to use it. Such reloading problems are covered in detail in ***GasGunBasics™***.

Failure to Reset

If you depress the trigger and the rifle does not fire, but you did not hear the hammer fall, unload the rifle by removing the magazine and clearing the chamber. Try dry-firing the rifle without ammunition by cycling it and pressing the trigger. If the hammer does not fall and the trigger does not follow its usual front-to-back movement, the fire control system may be failing to reset. In other words, the hammer is not releasing from the disconnecter to reset back to the sear face. This is typically caused by debris such as brass shavings, a blown primer, unburned powder or sand/dirt under one or both of the trigger adjustment set screws. This will prevent the trigger from returning all the way forward, which is necessary for the hammer to be released by the disconnecter to reset the mechanism. If this is the case, the fire control cavity of the lower assembly should be properly cleaned. If this fails to solve the problem, contact JP Enterprises, Inc. for service.

Projectile Lodged In Bore

If a popping sound is audible while firing the rifle instead of a full report or you experience reduced recoil, remove the magazine, lock the bolt back, clear the chamber and switch the safety selector lever to "SAFE." Visually check or insert a cleaning rod into the bore to determine if a round or some jacket material is lodged inside. If so, cease all use of the rifle and contact JP Enterprises, Inc. or a qualified gunsmith. Firing another round behind a projectile lodged in the barrel will destroy the barrel and may cause serious injury to shooters and bystanders.

The rifle fires multiple rounds with one pull of the trigger...

Fire on Release

A worn disconnecter or sear surface may allow the hammer to prematurely release from the disconnecter, which may cause the rifle to fire when the trigger is released. In other words, the rifle will fire when the trigger is pressed and again when the trigger is released to the reset position. The problem will eventually appear in all AR-type rifles as parts wear if the fire control mechanism is not properly serviced and inspected. Performing the disconnecter test as laid out in the trigger section of *GasGunBasics™* will give you advanced warning when parts may need to be replaced to prevent this problem from occurring. If don't feel capable of making this judgment, have a competent gunsmith check your trigger mechanism. This test should be performed during every service so you are aware of the fire control system's condition and any changes that occur.

There may be a brief period in the disconnecter's life when it will release the hammer as a result of the bolt bouncing closed that may result in multiple round firing with a single trigger pull. If you experience this, the rifle should be serviced immediately.

Slam Fire

It is well known that AR-type rifles may exhibit a slam fire in which the weapon fires when the bolt closes during loading or during live fire. This is a design issue, and through firing pin modifications and ammunition development has been nearly eliminated over the years. However, it is always a possibility and must be anticipated. Therefore, when loading the rifle by dropping the bolt on a loaded magazine, have the muzzle pointed in a safe direction.

A slam fire can result from firing pin inertia exerted on the action closing. The bolt and carrier assembly are propelled forward by the buffer spring with considerable velocity that is imparted to the firing pin, which then taps the primer as the bolt turns closed into battery. You will notice that when unloading the rifle, the last round will always have a dimple from the firing pin hitting it as the bolt comes into battery on the round fed after the last shot fired. This is normal and not a problem with properly loaded ammunition.

Another cause of slam fire is the firing pin being locked into the forward position due to a bent firing pin retainer pin or excessive lubrication or debris lodged in the firing pin channel. If the firing pin does not float freely in the firing pin channel of the bolt assembly, it may not bounce back when hitting the primer on close and cause a slam fire situation.

Finally, slam fires may result from primers that are too sensitive for the application. For this reason, some so-called rifle primers are not suitable for self-loading rifles.

The solution for a reoccurring slam fire condition is to change to a titanium firing pin. The titanium firing pin has very low mass and therefore will retain very low inertia on close.

Finger Bounce

Another common cause of what is commonly referred to as "doubling" is the finger bounce effect. Failure to use proper trigger control techniques—as demonstrated in *GasGunBasics™*—may result in the trigger finger bouncing on the trigger due to the recoil impulse of the rifle, which causes the rifle to fire multiple times without the shooter's intent. Proper trigger control technique is essential for the safe operation of your rifle and is unlike techniques used on manually operated rifles.

The rifle suffers from stoppages or jams...

It is important to note that this section refers to reoccurring stoppages, rather than one malfunction in hundreds or thousands of rounds. No mechanical device functions perfectly at all times, and every self-loading rifle, pistol or shotgun will malfunction at some time, despite claims about some firearm that has never done so. As with anything, it is important to have realistic expectations.

There are many types of stoppages, and not all of them can be covered here. A self-loading rifle functions as a materials handling system. Some material (ammunition) is delivered through a feeding device (the magazine), is processed (fired), and the remains are discarded (spent case extracted and ejected). Like every mechanical device, it has an “operational window.” It is important to know that any malfunction scenario is usually the result of several factors combining to collapse this operational window until finally a stoppage occurs. Stoppages and malfunctions are rarely the result of one factor, and correcting any one of the contributing issues may bring the system back into its operational window. The best diagnostics and remedial approaches will cure most or all of the issues that contribute to a particular malfunction and thereby expand the operational window as much as possible. The larger the operational window, the greater the range of physical conditions under which the rifle will continue to function.

In the realm of high-performance firearms, we are willing to make some compromises on the size of the operational window in return for some significant improvement in performance. For example, the JP Low Mass Operating System delivers a significantly improved sight recovery time, reduced recoil impulse and smoother overall feel to the cycling of the rifle at the cost of a slightly reduced operational window. Some applications, such as military or law enforcement use, do not allow for this compromise, and should instead use JP Tactical Operating System, which does not constrict the operational window as much. Some users will also decide to have both operating systems, as they can be interchanged in a matter of minutes.

This section covers the most common stoppages, addressing the causes and solutions to each. Be very observant when trying to diagnose a problem or relay it to someone for technical support. If your rifle leaves a spent case in the chamber, for instance, this is known as a failure to extract. If it leaves the spent case in the ejection port, this is a failure to eject. It is important to know which problem your rifle is experiencing.

Failure to Extract

Failure to extract is usually caused by excessive chamber pressure and or port pressure of a particular load but can be caused by inadequate extractor tension or a defective extractor. First, change ammunition or reduce your load density, and then try reducing the pressure of your gas system. If this does not remedy the problem, you may need to replace the extractor components or the complete bolt assembly.

An extraction failure can also be the result of a pit or flaw in the chamber caused by corrosion or a piece of debris embedded in the chamber wall. For this reason, a clean, well-finished chamber is essential to reliable extraction. A chamber that is pitted or corroded may require the replacement of the barrel. Grit or brass shavings falling into your loaded magazine and sticking to the outside of the cases can also cause extraction failures and even damage to your chamber. Never use a loaded magazine that has fallen into the dirt. It must be stripped and cleaned before the ammunition is fired.

Failure to Eject

The spent case was extracted successfully, but did not make it out of the upper receiver to be ejected. This can be caused by a sticky ejector pin in the bolt face, which is often the result of a brass shaving lodged between the ejector pin and the hole in the bolt face. Brass shavings embedded in the ejector pin hole are an indication of overpressure ammunition. An overpressure round will extrude the case head into the ejector pin hole and firing pin hole. When the bolt unlocks, this extruded material will be shaved off the back of the case and foul the ejector pin, firing pin channel and even fall into the magazine or fire control cavity creating other problems in addition to ejection failures.

Another common cause of a failure to eject is a round with low port pressure, which causes the operating system to “short stroke,” meaning it does not travel rearward sufficiently to allow the cartridge to clear the port. If you are using ammo that has been reliable, and this stoppage is now occurring consistently, the first thing to check is the ejector pin in the bolt face. If you have changed ammo, you probably have a port pressure issue. Try loading and firing one round in your magazine. If the bolt has not locked back, your port pressure is too low. You may want to change ammo or adjust the gas system on your rifle to allow more pressure into the operating system if you intend to shoot more of that ammunition. If the port pressure is too low to function with the gas system fully open, you must change your load. Refer to the ***JP Adjustable Gas System*** section above.

If you load and fire one round in a magazine and the bolt does lock back and the case fails to eject, your rifle may be over-gassed, which causes the operating system to cycle so fast that the spent case doesn’t have enough time to clear the ejection port. In this case, adjusting the gas system to lower the pressure delivered to the operating system may solve the problem, as will changing your ammunition or load.

Failure to Feed

A failure to feed can take several forms, each of which is caused by unique factors. The most basic failure to feed involves the rifle firing, ejecting the spent casing, and closing on either an empty chamber or on a cartridge that is only partially stripped from the magazine resulting in a “bolt ride-over.” One cause of this problem is a weak magazine spring or a magazine that is otherwise defective. The magazine may also be dirty or not properly prepped with graphite. Alternately, the ammunition port pressure may be excessive, causing the operating system velocity to exceed the magazine’s feed rate.

The rifle may also fail to feed because a loose round in the upper receiver is jammed in front of the bolt, or there may be a combination of a loose round and the bolt attempting to feed a second round for a double feed. This again is usually indicative of a defective magazine, which should be replaced.

If a round stops on the feed ramp of the barrel extension—in some cases actually collapsing the bullet into the case—this can be caused by using inappropriate or oddly shaped projectiles, such as jacketed hollow points with overly large hollow points. Out-of-spec cartridge lengths and projectile shapes are not suitable for use in a self-loading rifle and will tend to cause such errors.

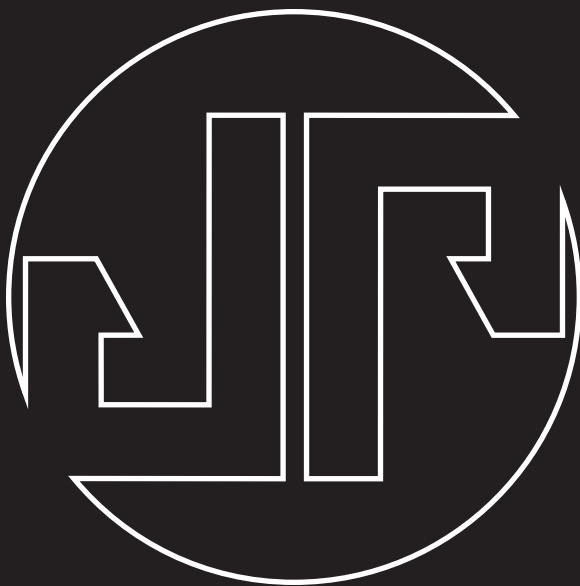
Problems such as failure to extract, failure to eject and failure to feed are typically ammunition related. Refer to **GasGunBasics™** for a detailed explanation of how the ammunition relates to the function of the AR-15-type rifles. The self-loading rifle demands a very different regimen of care and feeding to deliver satisfactory performance as compared to a manually operated rifle. The “pressure curve” of the ammunition, which refers to both the chamber pressure and port pressure produced by a particular load, must be within an acceptable range to cycle the rifle reliably.

The rifle fails to lock back on the last round (gas impingement only)...

Failure to lock back on the last round in the magazine can have many causes, the first of which is a defective magazine, magazine follower or weak magazine spring. Magazines need to be rebuilt from time to time, and they eventually need to be replaced. Verify that the rifle will lock back manually on an empty magazine when you pull back on the charging handle. If this corrects the problem, use a different magazine.

If you perform the above test and the bolt still does not lock back, there may be a problem with the bolt catch. Verify that the bolt catch moves freely on its pivot pin. Take the upper off the lower and insert an empty magazine. If the bolt catch is not pushed up by the follower of the magazine, try assisting it with your finger on the bottom of the bolt catch lever. If this does cause it to actuate, you may have excess spring tension on the bolt catch or excess friction caused by dirt or corrosion between the bolt catch and the receiver slot or roll pin. This problem is best remedied by a gunsmith as it is difficult to remove the bolt catch without damaging the receiver.

Failure to lock back can also be caused by both over or under pressurization of the operating system. Refer to the discussion of the JP Adjustable Gas System both in this manual and in **GasGunBasics™**.



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