FLINDE Fireal

# **Z-SERIES**

7.62x51 mm

**USER MANUAL** 

V.01





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# **Z-41 RIFLE**

Z-41 Series Rifles have been manufactured by MKE Corporation for the US market.

#### Z-41 Series Rifles:

- Are manufactured utilizing the latest production techniques and machinery.
- Utilize the reliable roller-lock, delayed blowback operating system.
- Are manufactured with cold hammer forged chrome moly vanadium barrels.
- Carry their serial numbers on the upper portion of the receivers.
- Are chambered for the 7.62x51 mm cartridge.

# **Z-41 RIFLE**



# **Technical Specifications**

Ammunition	7.62x51 mm NATO	
Operation	Semi-automatic, magazine fed, air cooled, delayed blow back, roller-lock	
Sights	Rear drum for elevation and windage, front protected post	
Magazine	10-Round amber polycarbonate	
OA Length	37.6 inches	
Barrel Length	16.15 inches	
Barrel Twist	1:12 inches	
Barrel Lands/Grooves	4	
Barrel	Cold hammer forged 32 chrome molybdenum vanadium	
Fluted Chambers	12	
Trigger	5.6-10 pounds	
Colors	Black, green, camo	
Weight Empty	9.5 pounds	
Additional	Barrel has 15x1 RHM threaded end and pinned muzzle brake.	
Includes	Rugged plastic carry case, three (3) 10-round magazines, factory cleaning kit, two (2) extra take-down pins, factory Picatinny style optics mount, factory sling, and 5-year warranty.	

#### **ESSENTIAL FIREARM SAFETY GUIDELINES**

#### **Zenith Firearms**

These firearm safety guidelines have been prepared by Zenith Firearms, based upon currently available information. They are provided to you as a courtesy and in the interest of furthering safety. These guidelines are not comprehensive, nor do they modify or replace rules, recommendations, standards, or regulations made by legal authorities or manufacturers.

ZENITH FIREARMS EXPRESSLY DISCLAIMS ANY LIABILITY, OBLIGATION, OR WARRANTY RELATED TO THE INFORMATION SET FORTH IN THESE GUIDELINES.

As a responsible firearms supplier, Zenith believes that no issue is more important than firearm safety. We urge you to learn and practice the following guidelines and to make them your habit when handling firearms. This will help ensure safe handling of your firearm(s) and help prevent accidents. We also encourage you to complete an approved firearms safety-training course.

#### THE 3 CARDINAL FIREARMS SAFETY RULES

#### 1. Always Handle a Firearm as if it is Loaded

Even if you determine that a firearm is unloaded, always, always, always handle it like it IS loaded. When you handle a firearm, the first thing you should do (with the firearm pointed in a safe direction), is open the action to identify whether the firearm is loaded. If you do not know how to open the action, do not handle the firearm. And remember, removing a magazine alone does not make a firearm unloaded, as there may be a round in the chamber.

# 2. Always Keep Your Finger Out of the Trigger Guard and Off the Trigger Until You Are Ready to Shoot Your Target

Do not place your finger inside the trigger guard until you have placed a firearm's sights on your target and have decided to fire. The best place to rest your finger in the meantime is above the trigger guard along the frame. By waiting until you are aimed at your target, if the trigger were to be pressed, you will guarantee that a shot will travel safely in the direction of your intended target.

# 3. Always Keep a Firearm Pointed in a Safe Direction, Before and Beyond Your Target

It is important to identify your actual target, but it is just as important to know what lies past and before your target. A safe direction is any direction where an unintentional discharge will not cause injury or damage. In determining a safe direction, remember that a round can ricochet off an object or go through walls, floors, ceilings, and windows. Whether in a house or outdoors, the safest direction is the muzzle angled down toward the floor. And never point at or cross the muzzle of a firearm (loaded or unloaded) at any part of any person's body-the laser rule!

# ADDITIONAL SAFE AND PROPER HANDLING AND STORAGE OF FIREARMS AND AMMUNITION RULES

# Always Keep Children and Others Safe By Storing Firearms Secure and Away From Unauthorized Persons

You should always store firearms and ammunition out of the sight and reach of children and anyone else who is not an intended user or not physically or mentally capable of handling and using them properly and safely. Store firearms in a safe storage place—ideally, one you can lock.

#### **Carefully Read the Entire Instruction Manual That Comes With Your Firearm**

You should only use a firearm if you fully understand how to safely operate it. All firearms come with an instruction manual created by the manufacturer. If the firearm does not come with an instruction manual, contact the manufacturer directly and request one.

#### Always Determine That the Firearm is Safe to Operate

Before shooting, make sure the firearm is in good working order, that the barrel is clear, and that the firearm is safe to operate. This is especially important when handling a firearm that has been stored or unused for a long period of time.

#### **Always Use Correct Ammunition**

Never use improper or incorrect ammunition. Only use ammunition recommended by the firearm manufacturer that is for the caliber of your firearm. Most firearms have the caliber engraved or stamped on the barrel. Your ammunition should be the exact same caliber. If you use the incorrect ammunition, it can destroy a firearm and cause serious injury.

### When Cleaning a Firearm, Make Sure it is Not Loaded

One of the most common statements following an accidental discharge is: "I was cleaning the gun and it went off!" When you clean a firearm, make sure it is not loaded. You should keep the ammunition in another room until you have finished cleaning the firearm and are ready to reload.

#### **Never Use Firearms While Using Drugs or Alcohol**

When you handle firearms, your judgment must NOT be impaired. You should NEVER handle firearms while under the influence of alcohol, illegal drugs, or while using legal prescription medication that can make you tired or affect your senses, reflexes, or judgment.

#### **Use Eye and Ear Protection**

Always wear proper eye and ear protection while shooting firearms; ear protection will help prevent hearing loss from the extreme decibel level of gunfire, and eye protection will help prevent ejection gases, ricocheted objects, casings, or any foreign objects from damaging your eyes. Be smart, be safe.

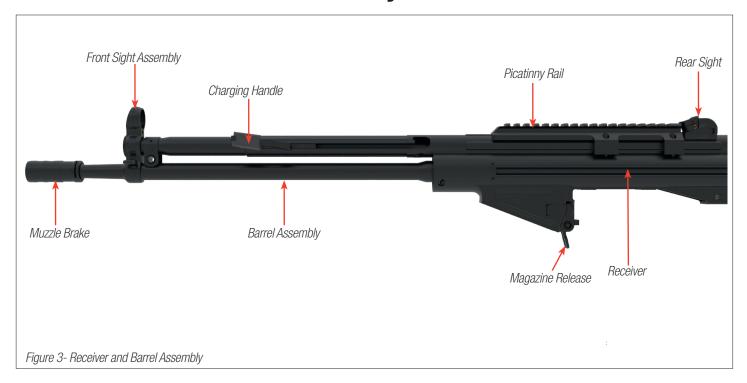
# **Z-41 RIFLE MAJOR ASSEMBLY GROUPS**



- 1. Receiver and Barrel Assembly
- 2. Bolt Carrier Assembly
- 3. Trigger Housing and Buttstock Assembly
- 4. Hand Guard
- 5. Take-down Pin

- 6. Magazine Assembly
- 7. Picatinny Rail
- 8. Take-down Pin
- 9. Recoil Spring Assembly

# 1. Receiver and Barrel Assembly



Barrel, charging (cocking) handle, Picatinny rail, and both sights are attached to the receiver. The muzzle brake is attached to the barrel end by way of a 15x1 RHM thread. It is held in place by a set screw with a 2 mm socket head screw.

The barrel is attached to the trunnion with a barrel retention pin (not removable). The charging handle is located above the barrel and is used to cycle the weapon and chamber a round and can be used to lock the bolt back to put the firearm in a safe condition.

The front sight is a fixed blade in a protected ring, and the rear sight is a protected drum, adjustable for windage and elevation. This drum has four apertures corresponding to 100, 200, 300, and 400 meters. The 100 meter is a V notch.

The Picattiny rail is attached to the receiver by way of four socket head cap screws and wedge-nuts.

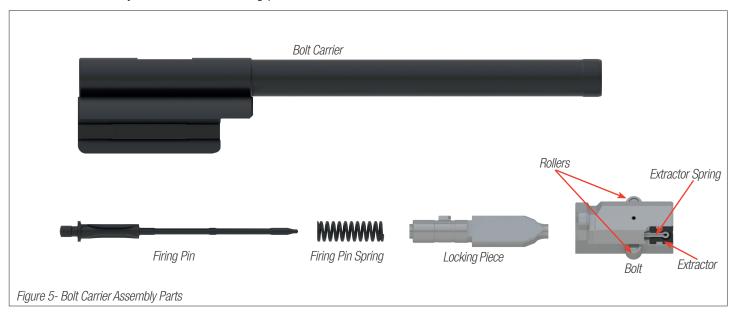
# 2. Bolt Carrier Assembly



The bolt carrier assembly slides into the receiver and retains the recoil spring. The bolt carrier assembly contains the bolt assembly and is moved forward under spring pressure. The bolt strips a round from the magazine feeding and chambering the next round, engages the rollers to lock the bolt, releases the firing pin to fire the weapon, and then moves rearward to eject the spent casing and re-cock the firing pin.



Bolt Carrier Assembly contains the following parts:

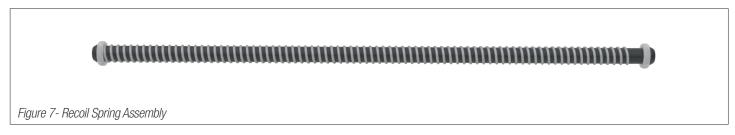


# 3. Trigger Housing and Buttstock Assembly



The trigger housing and buttstock are permanently connected in the sportorized version. Do not attempt to disassemble these two components. This two-piece assembly is held in place by two take-down pins that can be fully removed by sliding them out. Both pins can be temporarily stored in the two holes toward the rear of the buttstock. The trigger housing forms the pistol grip and contains the trigger pack and its associated parts, such as the hammer, trigger, and sears. It is recommended that a certified armorer initiate disassembly of the trigger pack.

# 4. Recoil Spring Assembly



The recoil spring assembly is housed in the receiver behind the bolt carrier assembly. It mates with the bolt carrier assembly and both are manipulated with the charging handle. The recoil spring assembly absorbs recoil during firing and forces the bolt carrier forward feeding a round into the chamber. w

## 5. Hand Guard



The hand guard is attached under the barrel to the receiver and held in place by a pin. The hand guard protects the shooter from the heat of the barrel. There are several different hand guard options.

# 6. Magazine Assembly



The impact-resistant polycarbonate magazine holds 10 rounds and is either dark gray or amber in color.

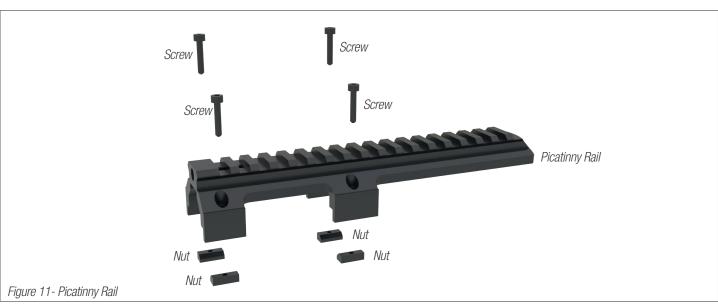
Figure 9- Magazine Assembly



Magazine Assembly contains the following parts:



# 7. Picatinny Rail



The Picatinny rail is manufactured to the MIL-STD-1913 and is attached to the top of the receiver by way of four socket head cap screws and four wedge-nuts that hold it firmly in place. This is used for quick connection of optics.

# **Z-41 RIFLE DISASSEMBLY PROCEDURES**

# 1. Magazine Removal



Press the magazine release button or paddle (see image a). Remove the magazine by pulling downward (see image b).

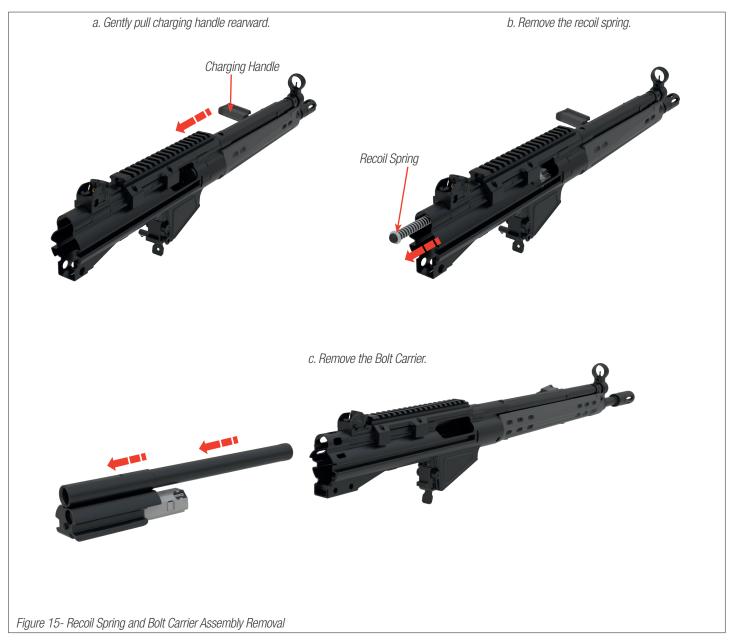
# 2. Trigger Housing and Buttstock Removal





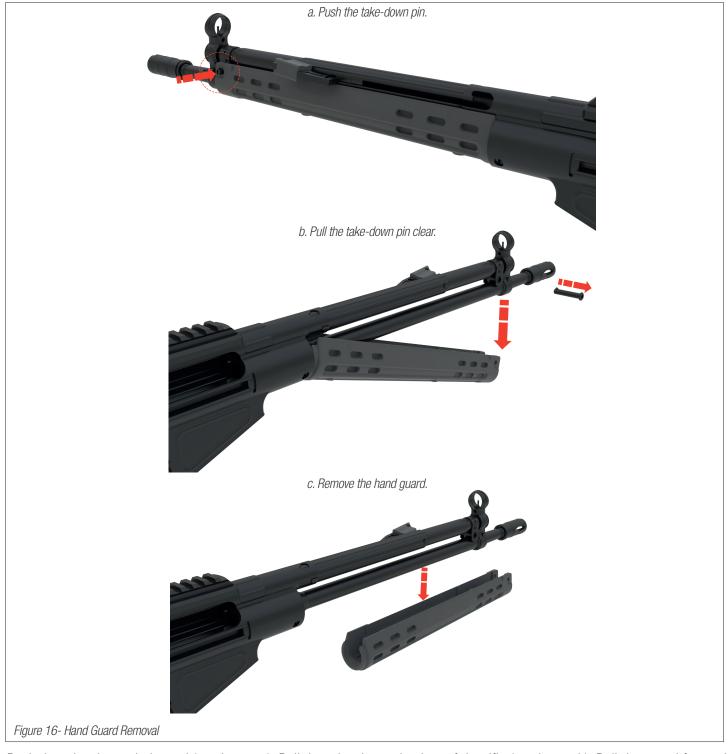
Push the pins inward (see image a). On the other side of the firearm, pull the two take-down pins clear and insert in the two holes of the buttstock for temporary storage (see image b). Slide the trigger housing and buttstock assembly rearward and downward until separated (see image c).

# 3. Recoil Spring and Bolt Carrier Assembly Removal



Begin by gently pulling on the recoil spring to remove from the receiver (see image a). Pull on the charging handle so the bolt carrier assembly comes free from the receiver (see images b and c).

#### 5. Hand Guard Removal



Push the take-down pin inward (see image a). Pull the take-down pin clear of the rifle (see image b). Pull down and forward on the hand guard and the hand guard will slide off of the receiver (see image c).

#### **Z-41 RIFLE REASSEMBLY**

Reassemble the rifle in reverse order of disassembly.



CAUTION: DO NOT USE EXCESSIVE FORCE WHEN DISASSEMBLING, ASSEMBLING OR CLEANING THE FIREARM.



CAUTION: THE BARREL MAY BE HOT IF RECENTLY FIRED.

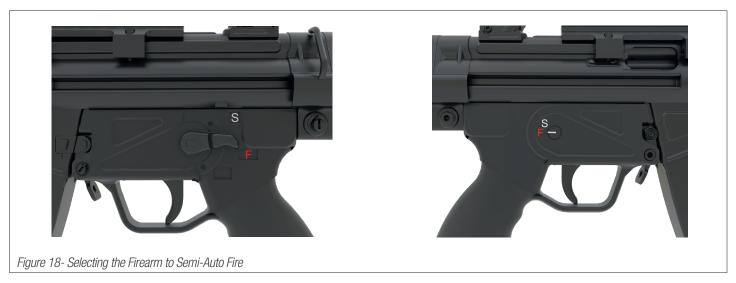
# **Z-41 RIFLE OPERATION**Safe and Fire Selector Operation

#### 1. Selecting the Firearm to Safe



To place the firearm on safe, flip the safety lever, located on the left side of the trigger housing, up to "S" (safe). This will lock the trigger and the firearm cannot be fired.

## 2. Selecting the Firearm to Semi-Auto Fire



To place the firearm in the fire position, flip the safety lever, located on the left side of the trigger housing, down to "F" (fire) or "1" (1 round). This will select semi-auto fire mode, where one pull of the trigger will fire one round and reload the next round.

# **Loading and Unloading the Magazine**



#### 1. Loading the Magazine

Firmly grasp the magazine in the weak hand while using the thumb of the strong hand to push the first round between the lips of the magazine onto the follower. Use your thumb to push each additional round straight down, allowing the rounds to stagger as it fills. Ensure the rounds face forward toward the front of the magazine. Do not overload the magazine's capacity.

### 2. Unloading the Magazine

Firmly grasp the magazine in the weak hand while using the thumb of the strong hand to push the first round forward out from under the lips of the magazine. Continue to use your thumb to push each additional round straight out. Do not attempt to pull the rounds straight up to remove them.



WARNING: NEVER USE DAMAGED OR INCOMPATIBLE AMMUNITION!



WARNING: NEVER USE ANY ITEM THAT MAY INADVERTENTLY STRIKE THE PRIMER WHEN UNLOADING CARTRIDGES FROM THE MAGAZINE.

# **Loading the Firearm**

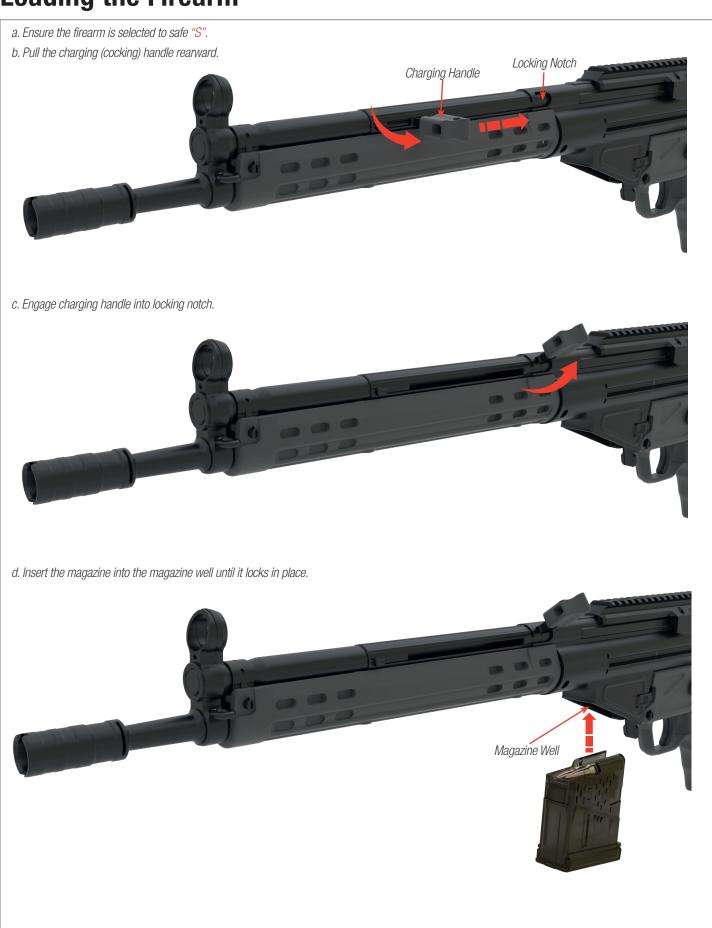


Figure 20- Loading the Firearm



Ensure the firearm safety "S" is engaged. While holding the pistol grip in the strong hand, use the weak hand palm to pull the charging (cocking) handle rearward (see image b). While still holding the cocking handle, pull up and engage into the locking notch (see image c). Using your weak hand insert a loaded magazine into the magazine well, tugging on it to ensure it is locked (see image d). While holding the firearm in your strong hand, use the weak hand palm to strike the charging handle downward, disengaging it and allowing it to move freely forward (see image e). The firearm is now loaded and ready to fire. Moving the selector switch to fire will enable semi-auto fire.



CAUTION: WHEN RELEASING THE CHARGING HANDLE, BE SURE TO AVOID PINCHING HAZARDS AS IT IS UNDER PRESSURE FROM THE RECOIL SPRING.



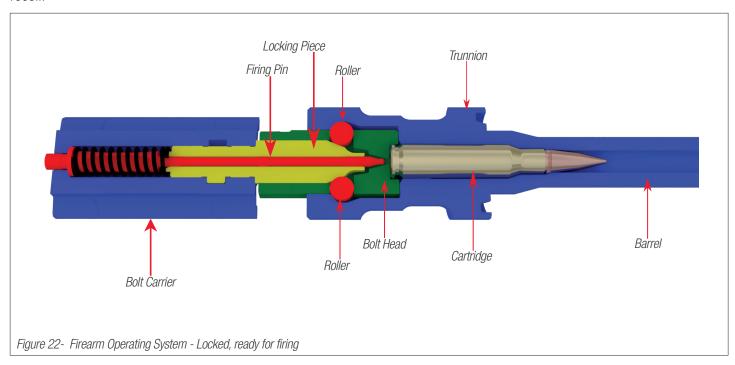
CAUTION: IT IS IMPORTANT TO ALLOW THE CHARGING HANDLE TO MOVE FREELY FORWARD UNDER SPRING TENSION.



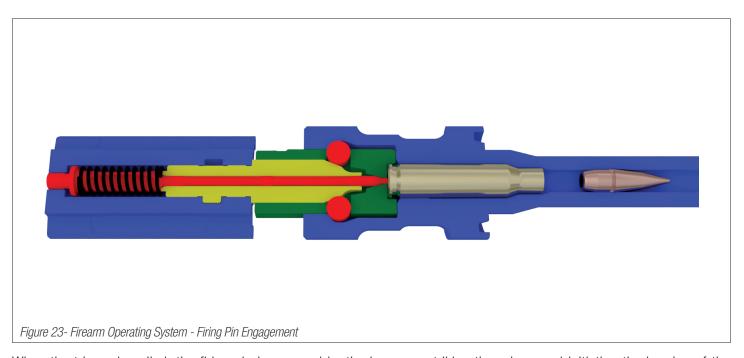
CAUTION: DO NOT ATTEMPT TO EASE THE CHARGING HANDLE FORWARD AS THIS MAY CAUSE A MISFEED.

# **Firearm Operating System**

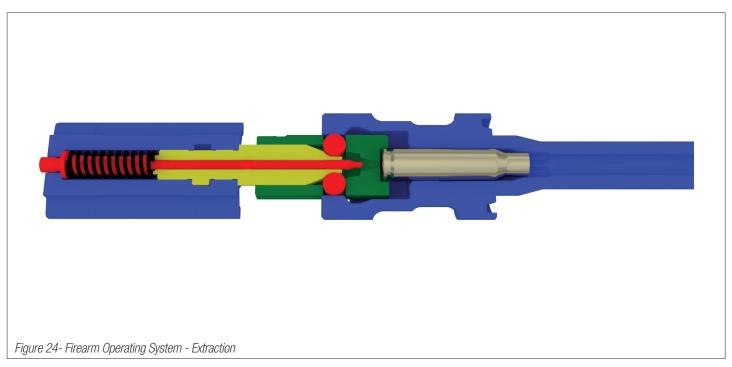
Before firing, the bolt carrier and bolt are temporarily locked into the trunnion as the rollers are engaged by the locking piece. The trunnion is welded to the upper receiver stabilizing the barrel. The bolt remains locked until the bullet leaves the barrel and the pressure drops. At that point the rollers disengage and the bolt carrier begins to move rearward by the force of the recoil.



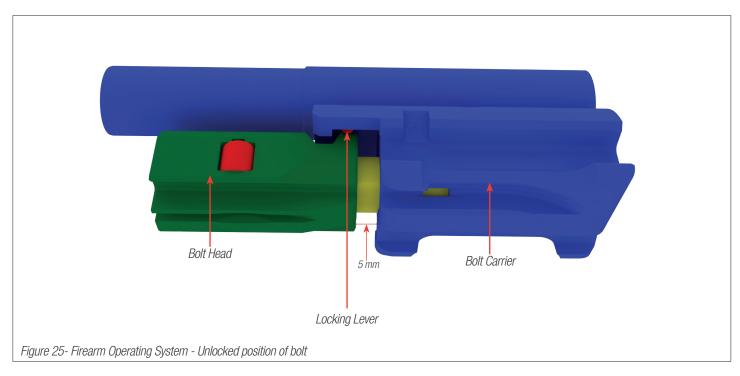
In Figure 22, the system is locked and ready for firing.



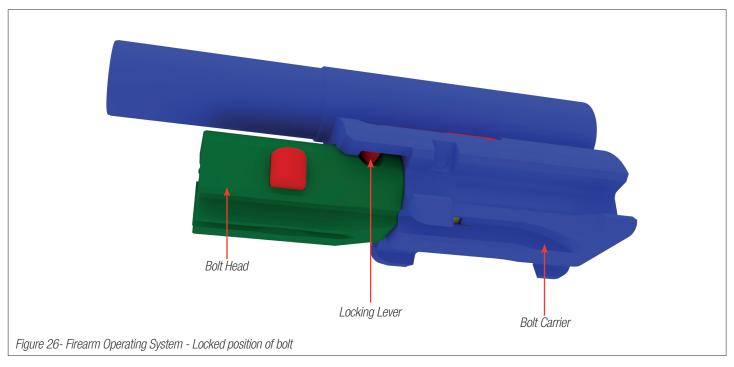
When the trigger is pulled, the firing pin is engaged by the hammer, striking the primer and initiating the burning of the powder, forcing the bullet down the barrel. At this time the lands and grooves of the barrel impart a spin to the bullet to stabilize it in flight. Gas is allowed to move around the cartridge case by way of flutes in the chamber, allowing the rollers to unlock and the case to move rearward against the face of the bolt.



Once the bullet has left the barrel, the pressure drops allowing the rollers to disengage the locking piece and the bolt carrier moves rearward.

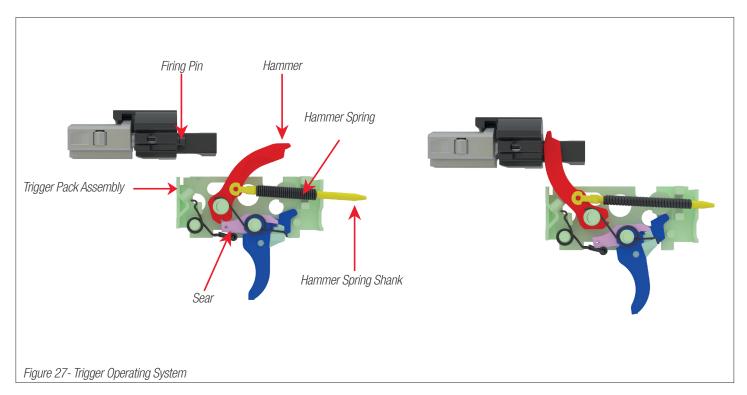


Once the bolt carrier moves rearward 5 mm, the bolt unlocks. As it continues to move rearward the recoil spring is compressed, the casing is extracted by the extractor and ejected by the ejector as the bolt moves past the ejection port. The hammer is cocked and the recoil spring and buffer limits rearward movement. The bolt carrier moves forward powered by the recoil spring and strips the next cartridge and feeds it into the chamber.



As the next round is pushed forward, the extractor locks onto the rim of the cartridge being chambered. The locking piece moves forward pushing the rollers outward to engage in their temporary locking position in the trunnion. At this time the gun is ready to be fired again.

# **Trigger Operating System**

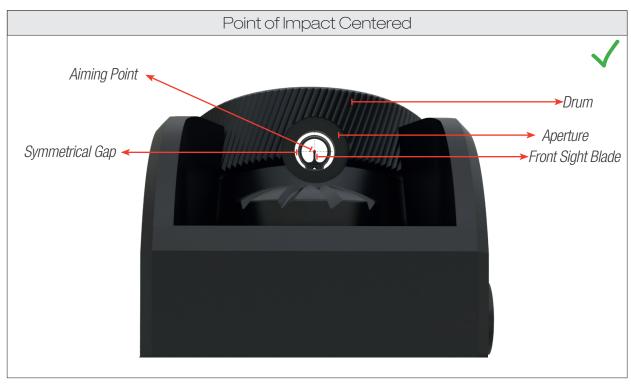


The hammer spring is compressed and the hammer held back by the sear. When the trigger is pulled, the sear is moved and the hammer is allowed to move forward, striking the rear of the firing pin with force. The firing pin strikes and ignites the primer and the round is fired beginning the process again.

# **Z-41 RIFLE SIGHTS**

# **Using the Sights**

The rear sight has four apertures labeled 1, 2, 3, and 4. The number 1 has a V-notch designed for shooting up to 100 meters. The numbers 2, 3, and 4 represent 200, 300, and 400 meters.











# **Rear Sight Adjustments**

Z-41 Rifles are zeroed after production. If the sight requires adjustment for elevation or windage, this is done in the following manner.

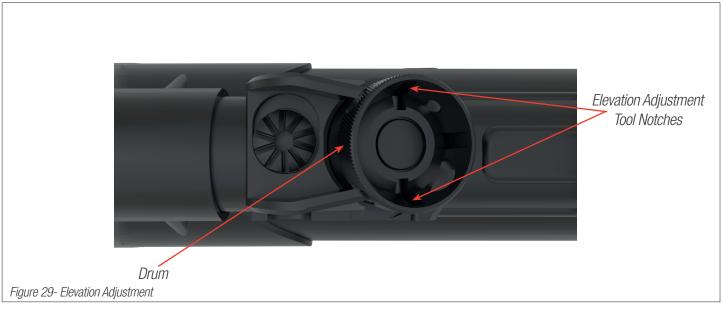
#### **Windage Adjustment**

To adjust the windage to the left, loosen the locking screw and gently turn the adjustment counter-clockwise. To adjust the windage to the right, loosen the locking screw and gently turn the adjustment clockwise. One quarter turn (one click) equals approximately 1.18 inch change in elevation or windage at 100 yards.



#### **Elevation Adjustment**

Elevation adjustment is made by use of an elevation adjustment tool. The elevation adjustment tool engages in the notches on the inside of the drum sight. All adjustments should be made with the rear drum placed on the #1. Turning the drum clockwise will lower the bullet's point of impact. Turning the drum counter-clockwise will raise the bullet's point of impact. One quarter turn (one click) equals approximately 1.18 inch change in elevation or windage at 100 yards.





CAUTION: IT IS RECOMMENDED TO USE A SIGHT ADJUSTMENT TOOL FOR ADJUSTING ELEVATION.

#### FIREARM MAINTENANCE

#### **Regular Maintenance**

Always be aware of the overall operation of your firearm. Ensure the charging handle, safety selector, magazine insertion, etc. are in proper operating condition. If any strong resistance or odd tolerances are noted, investigate. In general keep your firearm clean and lubricated. When your firearm is disassembled, inspect for rust, corrosion, and build up of any residues that will affect operation. A function check should be performed. This entails ensuring the safety does not allow the trigger to be pulled.

#### **Prior to Use**

Perform a regular maintenance and function check prior to use. Pay special attention to ensure there are no obstructions or mechanical situations that need to be addressed.

#### **After Each Use**

After each firing session, the firearm should be unloaded, checked for clear, and field stripped. The firearm should then be cleaned, re-lubricated, and subjacted a function check prior to storing.

#### **Extreme Climate Maintenance**

#### **High Heat and Humid/Wet Conditions**

In climates with high heat and humidity the firearm, and especially its internal components, can rust more quickly. Inspect your firearm more often and never leave components without lubrication. If any rust or corrosion is located, clean it off and re-lubricate immediately.

#### **High Heat and/or Low Humidity/Dry Conditions**

In climates with high heat and/or low humidity, firearms are less likely to rust, however, lubrication can evaporate and dirt, sand, and other contaminants can find their way into the operation. This will cause faster wear and abrasion of the internal components. Use a thinner oil and wipe all excess oil after cleaning, as excess oil will attract and hold dirt.

#### **Extreme Cold Conditions**

In climates with extreme cold and/or low humidity, the lubricating oils used should be selected specifically for this environment. Sudden temperature changes can cause moisture build-up inside the firearm leading to corrosion. For this reason attention must be paid for condensation both inside and out. Care must be taken to not place a hot, recently fired firearm in snow or ice as it could damage or deform metal surfaces. And upon transitioning from a cold environment to a warm environment condensation will occur and must be addressed with drying and lubrication.

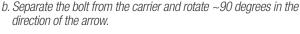
## **Disassembly and Maintenance of Bolt Carrier**

#### **Disassembly of Bolt Carrier Assembly**

a. Squeeze the two rollers on the bolt together.



c. Continue rotating the bolt until it disengages from the locking piece.





d. Control the bolt as it disengages from the carrier.



e. If the locking piece does not free itself, continue rotating it until it is free.



f. Allow the locking piece to disengage controlling it as it is under spring pressure.



g. Separate the firing pin and firing pin spring from the locking piece.





NOTE: it is highly recommended to utilize a bolt carrier assembly tool when removing the bolt from the bolt carrier assembly.

Figure 30- Disassembly of Bolt Carrier Assembly

Squeeze the two rollers toghether (see image a), pull the bolt away from the bolt carrier (see image b), and rotate the bolt ~90 degrees counter-clockwise (see image c). Control the bolt allowing it to separate from the carrier (see image d). Holding the locking piece firmly, continue to turn it until it unlocks and comes free of the carrier (see image e). Control the removal of the locking piece including the firing pin and firing pin spring (see figure f). Separate the firing pin and firing pin spring from the locking piece (see image g).

# **Maintenance of Bolt Carrier Assembly**

Once disassembled the bolt carrier should be cleaned to remove all carbon and unburned powder. Solvent and a brush may be used. After cleaning, a light coat of lubricant should be applied to all surfaces. Reassemble in reverse order from disassembly.

#### **Bolt Carrier Reassembly**

Once cleaned, follow the reassembly show below.



Figure 31 - Reassembly of Bolt Carrier Assembly

Slide the locking piece, including the firing pin assembly, into the bolt carrier (see image a). Turn the locking piece clockwise  $\sim$  45 degrees until held in place (see image b and c). Slide the bolt over the locking piece and rotate clockwise  $\sim$ 180 degrees until the locking lever engages (see image d and e). Continue to rotate the bolt head over the locking piece  $\sim$  5 mm from the carrier so that the rollers remain unlocked (see image f).

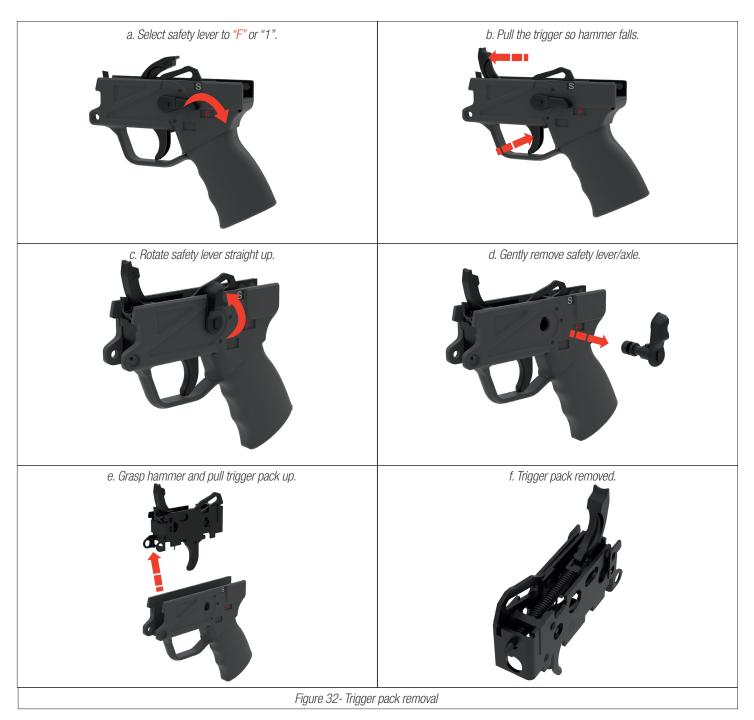


CAUTION: THE BOLT CARRIER ASSEMBLY WILL NOT SLIDE INTO THE RECEIVER WITH THE BOLT HEAD FLUSH AGAINST THE CARRIER AND ROLLERS LOCKED OUT. YOU MUST MAINTAIN A~5 MM GAP BETWEEN THE TWO (SEE IMAGE F).

NOTE: A BOLT CARRIER ASSEMBLY TOOL IS HIGHLY RECOMMENDED FOR THE ABOVE PROCEDURES.

# **Trigger Pack Removal and Maintenance**

### **Trigger Housing Removal**



Select safety lever to "F" or "1" (see image a). Pull the trigger so hammer falls (see image b) using the offhand to prevent it from falling freely. Rotate safety lever straight up (see image c). Gently remove safety lever/axle (see image d). Grasp hammer and pull trigger pack up (see image e).

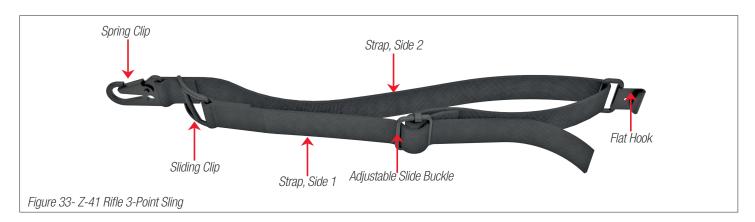
#### **Trigger Pack Maintenance**

The trigger pack can be removed during regular cleaning. Once removed, inspect for dirt, sand, unburned powder, or any other debris. Any debris can be removed by brush or compressed air. It is recommended that a certified armorer initiate disassembly of the trigger pack.

# **Z-41 RIFLE SLING 3-Point Sling**

The 3-point sling is designed to facilitate across-the-back carry and rapid deployment. The length of the sling is adjustable by way of the slide buckle.

The spring clip is attached to the front of the firearm and the flat hook clip is attached to the buttstock. Strap, Side 1 crosses the back and Strap, Side 2 two crosses the chest. The adjustable slide buckle is on the back. The sliding clip hooks into the holder on the left side of the magazine.



# **TROUBLESHOOTING**

NO.	ISSUE	PROBABLE CAUSE	CORRECTIVE ACTION
1	Failure to fire	Firing pin broken Firing pin tip worn Firing pin spring broken Faulty ammunition Bolt carrier not in battery Damage/obstruction in trigger pack	Replace firing pin Replace firing pin Replace firing pin spring Replace ammunition Recharge firearm Repair trigger pack
2	Failure to extract	Extractor broken Extractor spring broken Bolt face has obstruction	Replace extractor Replace extractor spring Clean bolt face
3	Failure to eject	Ejector broken	Replace ejector
4	Failure to feed	Magazine not fully seated Magazine catch not engaged Magazine lips deformed Obstruction of charging handle movement Faulty ammunition	Fully insert magazine until it locks Inspect magazine latch button and paddle Replace magazine Ensure charging handle moves freely Replace ammunition.
5	Failure to chamber	Bolt face has obstruction Obstruction in trunnion/chamber Faulty ammunition Weak recoil spring	Clean bolt face Clean trunnion/chamber Replace ammunition Replace recoil spring
6	Failure to go into battery	Obstruction in trunnion/chamber Faulty ammunition Damaged bolt assembly Bolt face has obstruction Weak recoil spring	Clean trunnion/chamber Replace ammunition Repair bolt assembly Clean bolt face Replace recoil spring



CAUTION: IF ABOVE CORRECTIVE ACTIONS DO NOT REMEDY ISSUE, PLEASE SEEK ASSISTANCE FROM QUALIFIED GUNSMITH OR ARMORER BEFORE CONTACTING ZENITH FIREARMS.



# **Zenith Firearms**

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