

PRIMARY WEAPONS SYSTEMS

EVOLVE

Product
Manual

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Primary Weapons Systems was formed by firearm enthusiasts in 2008. Starting out by producing muzzle devices, we tested our compensators on all different types of rifles - from M4 variants to AK-47 varieties. After using both styles of rifles in testing with high round counts, the maintenance needed to keep the M4 functioning, and the complete lack of maintenance needed by the AK-47 to handle the same round count, were both astounding.

From that basic realization, the PWS long-stroke piston system was born; keeping the core values of the AR15 design, while also lessening the need for maintenance in high-volume fire situations and adverse conditions. Rather than being driven by every new market trend and what's "hot"- we focus on finding something we want to shoot; if it's not on the market, we put it there.

Primary Weapons is built and run by people who love guns and value our customers by providing the highest level of service. We take great pride in the fact that it is hard to find a customer who owns just one of our products. It seems once someone gives our rifles and accessories a try, they are hooked on the gentle push type recoil, high standards of craftsmanship, and reduced need for maintenance.

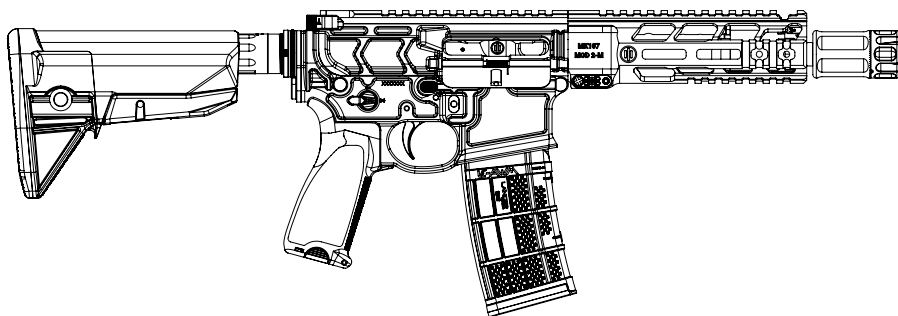
Thank you for joining the Primary Weapons Systems' family. Please review this manual before operating your new firearm. The PWS website can be found at www.primaryweapons.com. If you have any questions regarding your PWS firearm, please visit our website to review our FAQs. If you still have questions, please contact us. We are here to help!

For sales assistance, email sales@primaryweapons.com

For technical assistance, email warranty@primaryweapons.com

Table of Contents

4. Safety & PWS Firearm Identifier
5. Your PWS at a Glance
6. Routine Maintenance & Disassembly
7. Disassembly Schematic
8. Lubrication & Maintenance Information
9. Gas System Maintenance Instructions
10. Ammunition Selection and Muzzle Velocity Chart
11. Warranty Statement and Contact Information



Safety First

When you are handling a firearm, or in the presence of someone handling a firearm, please be safe. Your firearm is a tool and should be treated as one.

Please review the 10 rules of firearm safety below, and make safety your top priority. It is your responsibility as a firearm owner.

1. Always keep the muzzle pointed in a safe direction
2. Firearms should be unloaded when not actually in use
3. Don't rely on your gun's "safety"
4. Be sure of your target and what's beyond it
5. Use correct ammunition
6. If your gun fails to fire, handle with care!
7. Always wear eye and ear protection when shooting
8. Be sure the barrel is clear of obstructions before shooting
9. Don't alter or modify your gun, and have guns serviced regularly
10. Learn the mechanical and handling characteristics of the firearm you are using

Identifying Which PWS You Own

MK1 PRO: AR-15 platform, MLOK® handguard, eliminated forward assist

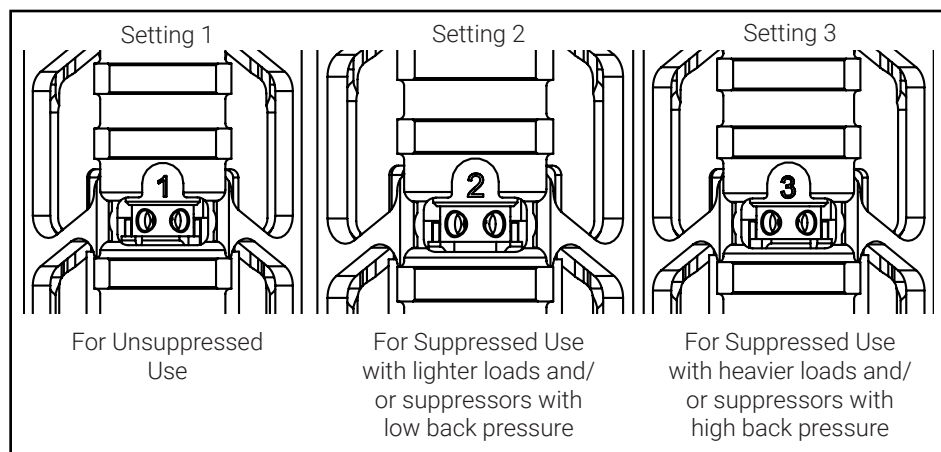
MK1 MOD 1-M: AR-15 platform, MLOK® handguard, included forward assist

MK1 MOD 2-M: AR-15 platform, PicLok® handguard, eliminated forward assist

MK2 MOD 1-M: AR-10 DPMS pattern, MLOK® handguard, eliminated forward assist

Your PWS at a Glance:

- While the PWS piston system does require less maintenance and cleaning than a standard DI system, we do suggest regular cleaning and maintenance of your firearm.
- Please review these settings, and as you make changes such as ammo, suppressor use, etc. pay attention to your settings. To adjust your gas settings, insert the narrow end of your rifle service tool (or tip of a bullet) into the gas adjustment knob, and turn.



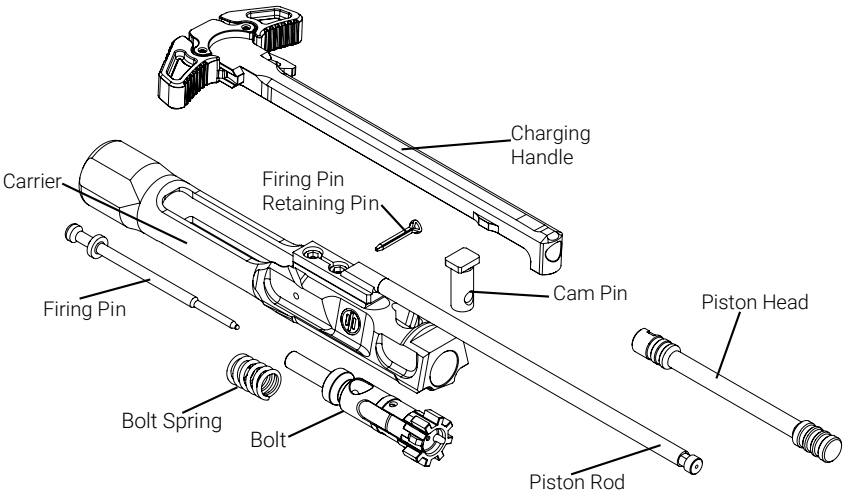
- .300BLK should not require adjustment of gas, but does have an adjustable gas system.
- If you are running your PWS suppressed, additional cleaning may be needed.
- The PicLok® handguard allows users to direct-thread MLOK® or standard Picatinny accessories. Please ensure you are using high-quality accessories. For a list of vendors PWS recognizes as high-quality, please visit our website.
- Many parts of the PWS system are proprietary on our piston driven firearms, including the bolt carrier group, the barrel, the handguard and upper receiver. Please do not alter the core parts of your PWS firearm.

Routine Maintenance:

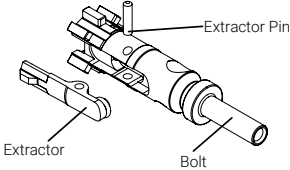
Disassembly for Routine Maintenance on ALL PWS Firearms:

1. Unload and clear your firearm, be sure your firearm is on safe.
2. Ensure the bolt carrier group is forward before proceeding.
3. Press the back take-down pin from left to right until it is stopped by the detent in the lower receiver.
4. Press the front pivot pin from left to right until it is stopped by the detent in the lower receiver.
5. At this time, the upper receiver and lower receiver will detach from each other.
6. Pull the charging handle from the back of the upper receiver until it stops. It is easiest to turn the upper 45-90 degrees so the charging handle is facing opposite of you.
7. Pull the bolt carrier group back until it catches on the charging handle.
8. Lift the bolt carrier group up (away from the charging handle). The bolt carrier group with charging handle will now be free to pull away from the upper receiver.
9. Turn the piston head until it can easily slip off.
10. Remove the charging handle over the piston rod.
11. Remove firing pin retaining pin, which will release the firing pin.
12. Depress bolt assembly group into carrier, turn cam pin 90 degrees and remove. **Caution: the bolt assembly is spring assisted and will easily separate at this time.**
13. Apply pressure on the round side of the extractor to relieve pressure on extractor pin.
14. Using a punch/tip of firing pin, push the extractor pin from the bolt; direction does not matter.
15. Lift extractor from bolt.
16. In the lower receiver, depress the buffer retainer and remove the buffer and recoil spring.

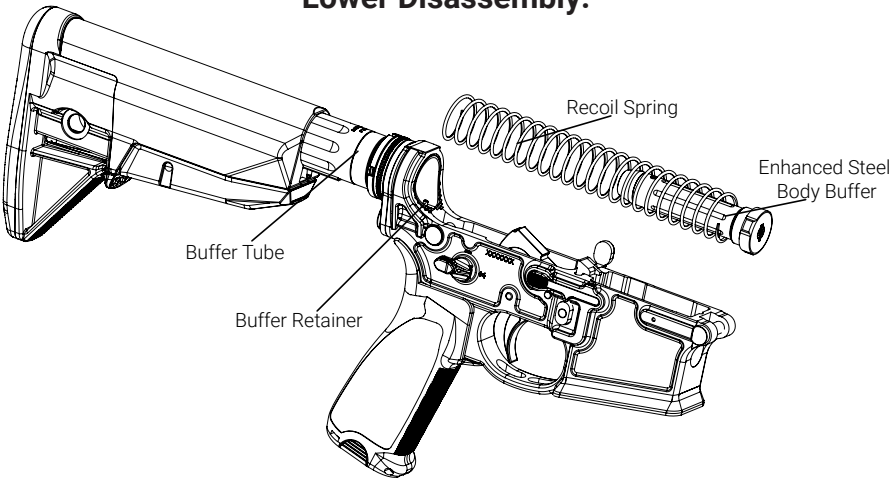
BCG Disassembly:



MK1 Bolt Disassembly:



Lower Disassembly:



Lubrication:

To lubricate your firearm, follow disassembly instructions #1-16 on pg. 6. Then use a solvent to flush debris from surfaces of BCG assembly. A Scotch Brite pad may be used to remove hardened on carbon/debris on BCG parts and piston head. Re-assemble bolt carrier group and lubricate all areas of the assembly, ensuring all contact points are lubricated well.

A .40 cal cleaning brush can be used to clean carbon/debris out of the piston tube. Wipe down piston rod and piston head prior to reassembly, as these parts do not need lubrication.

Use a solvent to flush out debris from the buffer tube. Remove any excess solvent, apply an even layer of lubricant to the inside of the buffer tube, and reassemble.

Gas System/In-Depth Maintenance:

While many of our customers don't do maintenance past the basic lubrication steps, and have no issue with reliability, we suggest cleaning your gas system and taking a little extra time to clean your PWS to ensure you are getting the best results from your firearm. Removal of handguard is not required for gas system maintenance on any line except for the MK1 MOD 2-M.

If you have a buildup of carbon on your barrel/underneath your handguard, you can use oil and a brush or Q-tip to rub the carbon off. We do not suggest removing the handguard on your firearm as it is not necessary and can cause accuracy issues if not re-installed properly. Please follow the instructions on pg. 9 to complete gas system maintenance on your PWS.

If you need assistance or have any questions about the gas system maintenance, please stop to contact us.

Disassembly further than shown in this manual should ONLY be done by a PWS Armorer. As the PWS piston system is proprietary and requires tools manufactured specifically by PWS, we do not suggest further disassembly by owners or gunsmiths not certified as PWS Armorers.

MK1 MOD 1-M, MK1 PRO and MK2 MOD 1-M:

1. Using your rifle service tool, turn the gas adjustment knob to the X-setting.
 2. Place a long cleaning rod in the back of the upper receiver into the piston tube located above the barrel and tap the back of the cleaning rod against the gas adjustment knob until the knob is knocked loose towards the muzzle device. Depending on carbon buildup, this can take some effort.
 4. Clean the piston tube and gas block with a .40 cal cleaning brush and the gas adjustment knob with a wire brush or Scotch Brite pad as needed.
 5. To reassemble, place the gas adjustment knob back into the gas block on the X-setting until it is fully seated against the gas block.
Note: first generation pre-2016 MK1 and MK2s utilized a spring and detent to retain the gas adjustment knob index.
 6. After cleaning, please ensure your gas system is adjusted to your preferences and NOT left on the X-setting or you'll be chasing it down range next time you go shooting!
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MK1 MOD 2-M:

1. Using your rifle service tool, turn the gas adjustment knob to setting 2.
2. Using the cross head section of your rifle service tool unscrew the handguard screws on each side of the handguard until they come to a stop (approximately 3 turns).
3. Push the handguard plate on the ejection port side in, towards the upper, then pull the handguard forward to remove. The handguard should remove with very little force.
4. Turn the gas adjustment knob 180 degrees or until roll pin is facing up and pull the knob out of the gas block.
5. Clean the piston tube and gas block with a .40 cal cleaning brush and the gas adjustment knob with a Scotch Brite pad and/or wire brush as needed, then reassemble ensuring the gas system is set to setting 2.
6. Reinstall handguard, ensuring that there is a slight air gap clearance between the gas block and the handguard interior rail. Failure to leave this gap can impact accuracy.
7. Adjust your gas settings to your standard configuration.

Ammo Selection:

Use only high quality, original, factory-manufactured ammunition. The use of reloaded, re-manufactured, hand-loaded, or other non-standard ammo is NOT suggested and voids all warranties. Yes, we have seen our rifles after they've taken rifle-cartridges with pistol powder and even the completely wrong caliber. Please pay attention to ammo selection.

Muzzle Velocity Chart (feet per second)					
	.223	.300BLK	7.62x39	.308	6.5CM
B A R R E L L E N G T H	7.75"	2216		1944	
	9.75"		2264		
	11.85"	2741		2204	
	14.5"	2921			
	16.1"	2980		2374	2488
	18"				2533

	Ammunition Used For Testing
.223	Federal XM855BK150 62 grain
.300BLK	Hornady Black 110 grain V-MAX®
7.62x39	Wolf Polyformance 123 grain FMJ
.308	Federal Gold Medal 168 grain SMK
6.5CM	Hornady 140 grain ELD

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Warranty Statement:

PWS maintains confidence in the level of quality, design, and expert workmanship incorporated into every product and component we sell. Therefore, PWS extends a limited lifetime warranty against manufacturer and design defects in all accessories and firearms we produce, assemble and ship within the United States of America.

We are proud to guarantee that all of our models are capable of being shot with 1 MOA accuracy. There are MANY variables that can impact accuracy of a firearm including but not limited to:

- Shooter's ability & environment (technique, rest, trigger pull, etc.)
- Ammunition (remanufactured, military surplus, etc.)
- Optics (optics not rated for 1MOA shooting)
- After-market configurations

We pride ourselves on industry leading customer service and warranty support. Should an issue ever arise, we will repair or replace any affected items deemed to be covered due to defect in workmanship or material. Please note this does not include damage caused by hand-load, reload, or improper ammunition, unauthorized adjustments, repairs or modifications and failure to provide proper care/maintenance.

Due to the extensive amount of after-market accessories available for the AR platform, we cannot guarantee that all products available will work with the PWS line of products and can only guarantee function in the factory configuration. This excludes accessories that mount on PicLok®, PicMod®, Picatinny, MLOK® and KeyMod sections, as they are intended for that purpose.

If you need assistance with anything regarding your product, please contact PWS Technical Help via email for the quickest response. warranty@primaryweapons.com.

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