

Part # BFIMAN-GP-SUPPL
August 2006



SUPPLEMENTAL INFORMATION TO THE BUSHMASTER OPERATING AND SAFETY INSTRUCTION MANUAL FOR THE GAS PISTON RIFLE AND UPPER RECEIVER ASSEMBLY



**WARNING: BEFORE USING THIS FIREARM,
READ AND FOLLOW THESE INSTRUCTIONS.**

**PLEASE
PRACTICE
SAFE FIREARMS
HANDLING!**

PLEASE PRACTICE SAFE FIREARMS HANDLING!

If you have any questions regarding the Bushmaster Gas Piston Rifle or Upper that are not covered in this Operating Manual Supplement, please contact Bushmaster Customer Service at the number below before loading live ammo or firing this weapon. Your safety is our first concern!



WARNING: IF THIS FIREARM IS CARELESSLY OR IMPROPERLY HANDLED, UNINTENTIONAL DISCHARGE COULD RESULT AND COULD CAUSE INJURY, DEATH, OR DAMAGE TO PROPERTY.



CAUTION: CAREFULLY READ THIS INSTRUCTION MANUAL PRIOR TO LOADING AND FIRING THIS FIREARM. FOLLOW ALL INSTRUCTIONS ON THE PROPER HANDLING AND SAFE USE OF THIS FIREARM - LIVES MAY DEPEND ON IT!



CAUTION: USE ONLY CLEAN, DRY, HIGH QUALITY COMMERCIALY MANUFACTURED AMMUNITION IN GOOD CONDITION which is appropriate to the 5.56mm NATO / .223 Remington caliber of your firearm.

Bushmaster does not recommend the use of remanufactured or hand loaded ammunition because it may damage your rifle.



WARNING: THIS WEAPON COULD CHAMBER A ROUND if it is dropped or jarred with a loaded magazine in place - either with the Bolt Carrier Assembly locked to the rear, or in its forward position.

A SAFETY NOTE REGARDING LEAD... Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition may result in exposure to lead, a substance known to cause birth defects, reproductive harm, and other serious physical injury. Have adequate ventilation at all times. Wash hands thoroughly after exposure.



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Made with Pride in the U.S.A.

HOW IS THE GAS PISTON SYSTEM DIFFERENT?...

In the simplest terms, the Bushmaster Gas Piston System cycles the rifle's action by using gas pressure to move a Piston and an Actuating Rod. This differs from the standard AR15/M16 Type rifle (with Gas Impingement System) wherein gas pressure is routed all the way back into the Upper Receiver to act directly upon the Gas Key, Carrier and Bolt.

The Bushmaster Gas Piston System Rifles and Uppers solve the common AR15/M16 Type rifle problems of excess heat, carbon build up, and gas leaks by eliminating the Gas Rings, Gas Key, and Gas Tube of the standard system. Much like the operating systems found on AK-47 and FAL rifles, the Gas Piston System functions by tapping gas pressure off through a port in the barrel as the rifle is fired. Gas pressure pushes a Hard Chrome Plated tubular Piston (located within the Gas Block, just forward of the handguards), which drives a solid steel Operating Rod to the rear - into the Upper Receiver. There, the Operating Rod pushes a Striker Face on top of the Bolt Carrier to move the Carrier to the rear, and thereby cycles the rifle's action. After initiating movement of the Operating Rod, excess gas pressure bleeds off through ports in the piston's housing (the Gas Block) and exits within the Handguards to keep carbon build up and powder residue from reaching - and fouling - the interior of the Upper Receiver and Bolt Carrier.

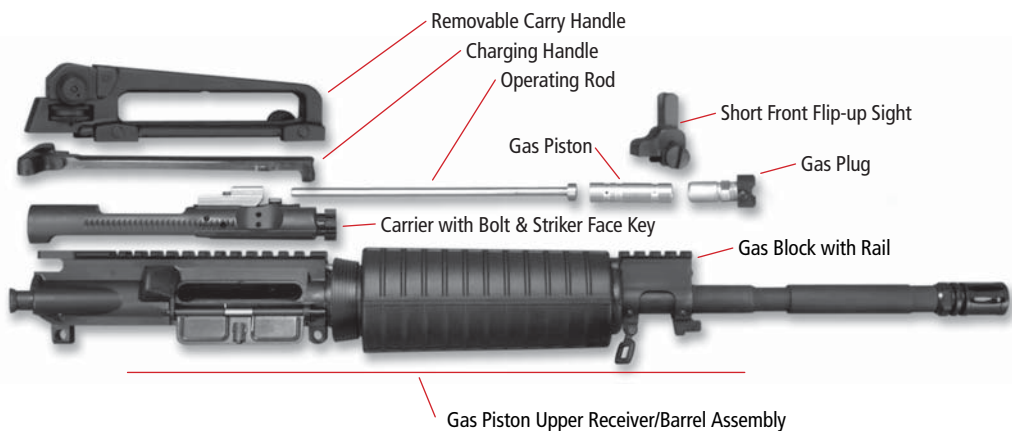
This Bushmaster Gas Piston System operates at a lower cyclic rate, functions with a wider range of ammunition, and works with less gas pressure than the standard gas impingement system rifles to improve reliability and control, as well as reduce heat and recoil. The detented Gas Plug at the front of the Gas Block allows easy removal and cleaning of the system's Hard Chrome Plated Piston.

Both Complete Rifles and Barreled Upper Receiver Assemblies are available from Bushmaster. The Upper Receiver Assemblies will fit on, and work with, any military pattern 5.56mm/.223 caliber Lower Receiver. Gas Piston Uppers will function with all standard 5.56mm/.223 caliber magazines.

GAS PISTON SYSTEM PARTS PHOTOS...

As the Lower Receiver and Magazine are identical in both Gas Piston System and XM15 E2S Gas Impingement System (standard) Rifles, they are not shown here. See the Bushmaster Operating and Safety Instruction Manual for information on Lower Receiver disassembly, reassembly, maintenance and operation.

The photo below shows the main components of the Gas Piston System Upper Receiver...



NOTE: The Bolt Carriers in the Gas Piston System are specific to these rifles, and will not function in Gas Impingement System rifles.

Do not switch them or mix them up, as a dangerous condition could occur.



DISASSEMBLY OF GAS PISTON COMPONENTS...

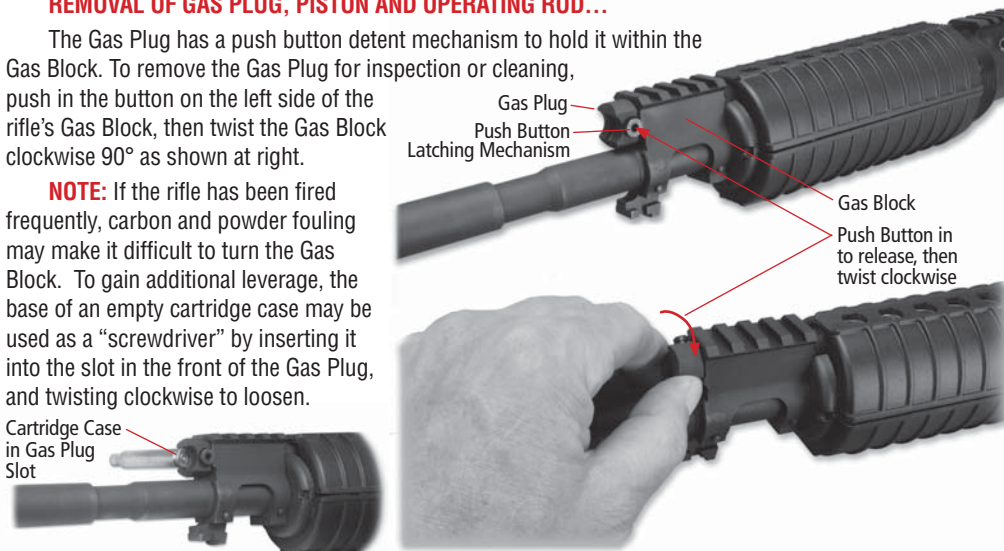
All standard disassembly and maintenance practices for Bushmaster rifles are appropriate for the Gas Piston System Rifles and Upper Receiver Assemblies with the addition the disassembly / inspection / cleaning steps shown in this Operating Manual Supplement.

REMOVAL OF GAS PLUG, PISTON AND OPERATING ROD...

The Gas Plug has a push button detent mechanism to hold it within the Gas Block. To remove the Gas Plug for inspection or cleaning, push in the button on the left side of the rifle's Gas Block, then twist the Gas Block clockwise 90° as shown at right.

NOTE: If the rifle has been fired frequently, carbon and powder fouling may make it difficult to turn the Gas Block. To gain additional leverage, the base of an empty cartridge case may be used as a "screwdriver" by inserting it into the slot in the front of the Gas Plug, and twisting clockwise to loosen.

Cartridge Case
in Gas Plug
Slot



DISASSEMBLY OF GAS PISTON COMPONENTS... (Continued)

After turning the Gas Plug clockwise, pull it out of the Gas Block. The Gas Piston and Operating Rod should then slide out of the Gas Block if the muzzle of the rifle is tipped downward.

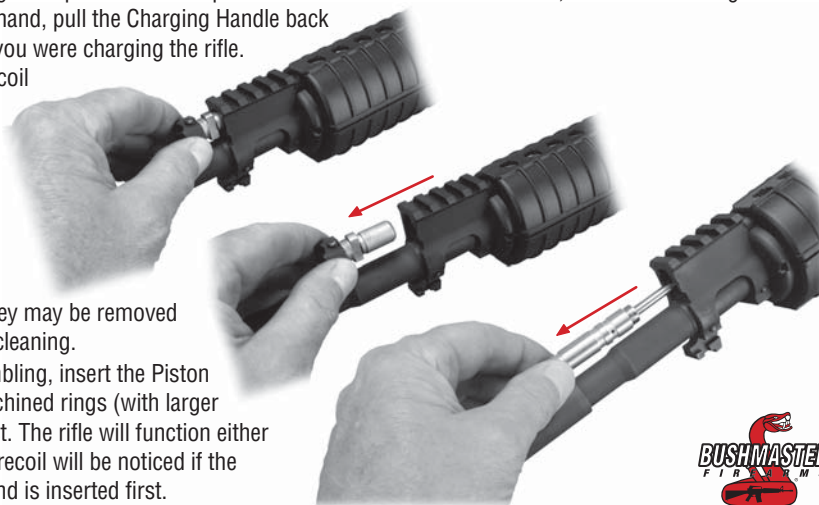
NOTE: If the rifle has been fired frequently, carbon residue and powder fouling may cause the Gas Plug, the Gas Piston and the Operating Rod to stick within the Gas Block. If this is the case, you can utilize the Recoil Buffer Spring to help remove these parts. Be sure the firearm is unloaded, then while holding the Gas Plug with your left hand, pull the Charging Handle back and release it as if you were charging the rifle.

The force of the Recoil

Buffer Spring and Bolt Carrier

striking the end of the Operating Rod should loosen the Operating Rod, the Gas Piston and the Gas Plug so that they may be removed for inspection and cleaning.

When reassembling, insert the Piston so that the two machined rings (with larger vent hole) go in first. The rifle will function either way, but a harsher recoil will be noticed if the smaller vent hole end is inserted first.



GAS PISTON BOLT CARRIER...

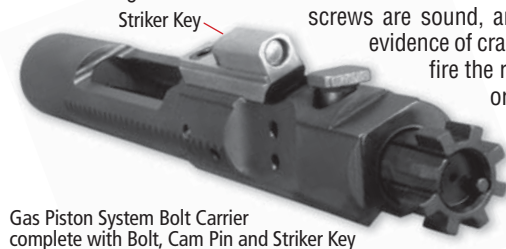
The Bolt in the Bushmaster Gas Piston Rifle - or Upper Receiver Assembly - is the same as would be found in any standard Bushmaster XM15 E2S rifle (gas impingement system), and all disassembly, cleaning and maintenance instructions for it can be found in the full Bushmaster Operating and Safety Manual. Note that the instructions regarding positioning of Gas Rings are unnecessary with the Gas Piston System Rifles as the Gas never reaches them. A simple lubrication of the Bolt and Rings is all that is necessary for Gas Ring maintenance, and you'll observe that the Bolt and Carrier group will operate much more cleanly in a Gas Piston Rifle as any powder residue or carbon residue is restricted.



Standard Bolt Used.

BOLT CARRIER / OPERATING ROD STRIKER KEY OF THE GAS PISTON SYSTEM...

The Gas Piston System Bolt Carrier differs in that the Gas Key of the standard impingement system has been replaced with a solid "Striker Key" that is acted upon by the Operating Rod to push the Carrier to the rear in the Upper Receiver, and thereby cycle the action. Any disassembly, cleaning and maintenance instructions in the Bushmaster Operating and Safety Manual are appropriate for this Carrier except for the instructions regarding cleaning out the Gas Key and Carrier Vent Holes, which are not applicable to the Gas Piston System. When making observational checks of the Gas Piston System Carrier, be sure that the Striker Key and its screws are sound, and that the Key is firmly affixed to the Carrier. If any evidence of cracking or looseness of the Striker Key is observed, do not fire the rifle until it has been checked by a competent gunsmith, or the Bushmaster Service Department.



Gas Piston System Bolt Carrier complete with Bolt, Cam Pin and Striker Key

WARNING: Do not switch or mix up Bolt Carriers between Gas Piston System Rifles and Gas Impingement System Rifles. One will not function in the other, and switching or mixing them up could cause a dangerous condition.

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GAS PISTON RIFLE / UPPER SUPPLEMENT



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This Supplement to the Bushmaster Operating and Safety Instruction Manual includes information specific to the Bushmaster Gas Piston Rifle or Upper Receiver / Barrel Assembly. If you have any questions regarding the Bushmaster Gas Piston Rifle or Upper that are not covered here, please contact Bushmaster Customer Service at the number below before loading live ammo or firing this weapon.

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