

# **DI** GAS BLOCK

FOR THE DIRECT IMPINGEMENT GAS SYSTEM

with **PATENTED BLEED OFF® MODE**

BLEED OFF® MODE IS A REGISTERED TRADEMARK OF SUPERLATIVE ARMS LLC

PATENTED BLEED OFF MODE | PATENT # US 9,273,916 B1

PATENTED EXTERIOR DETENT | PATENT # US 9,671,184 B1

DESIGNED & MANUFACTURED IN FLORIDA, USA

# SUPERLATIVE**ARMS**®

## INSTALLATION AND ADJUSTMENT INSTRUCTIONS

NEED SUPPORT? | EMAIL [SALES@SUPARMS.COM](mailto:SALES@SUPARMS.COM) | PHONE 727-849-6880

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[www.SUPARMS.com](http://www.SUPARMS.com)



# Thank You

for purchasing **SUPERLATIVE**ARMS products.

Now that you have received your patented, adjustable direct impingement gas block please make sure to follow the steps below before installing the product.

## **MAKE SURE THE WEAPON IS UNLOADED BY DOING THE FOLLOWING:**

- 1.** Make sure the firearm is pointed in a safe direction.
- 2.** Remove the magazine and lock the bolt carrier back.
- 3.** Place the safety selector in the "SAFE" position.
- 4.** Physically and visually inspect the chamber to make sure it is clear.

## **WARNING**

We recommend that a professional qualified gunsmith install all components. Always practice safe firearm handling procedures when using or maintaining firearms. Superlative Arms is not responsible for damage, injury, or death caused by your own intentional, accidental, or negligent discharge or misuse of the firearm.

## **WARRANTY**

Superlative Arms, LLC warrants that its products will remain free of manufacturing and material defects for the life of the product. Superlative Arms will repair or replace its products, at its sole discretion, as long as they have not been misused, abused, or tampered with, and that the claim is related to material or workmanship.

If your product requires a warranty repair or replacement, Superlative Arms will respond to your request and issue a RMA number by email. In order to repair/warranty an item, you will need to create an RMA Request under your account at [www.suparms.com](http://www.suparms.com). If you do not have an account, please create an account so we have your information. Under "MY ACCOUNT" select "ADD REQUEST" for the RMA. Please fill out the form and select "Request an RMA" under "Department".

Please indicate in the SUBJECT LINE that you need to return an order, exchange an item, or if you need a repair/warranty your item. Please include your order number in the message section and what you would like to return/exchange. In the message section, please describe what the issue is and product type/SKU. Please attach photos for our review. Click "SUBMIT REQUEST" when done. When the request is received, we will generate an RMA for you to include with your item and instructions on how to send it to us.

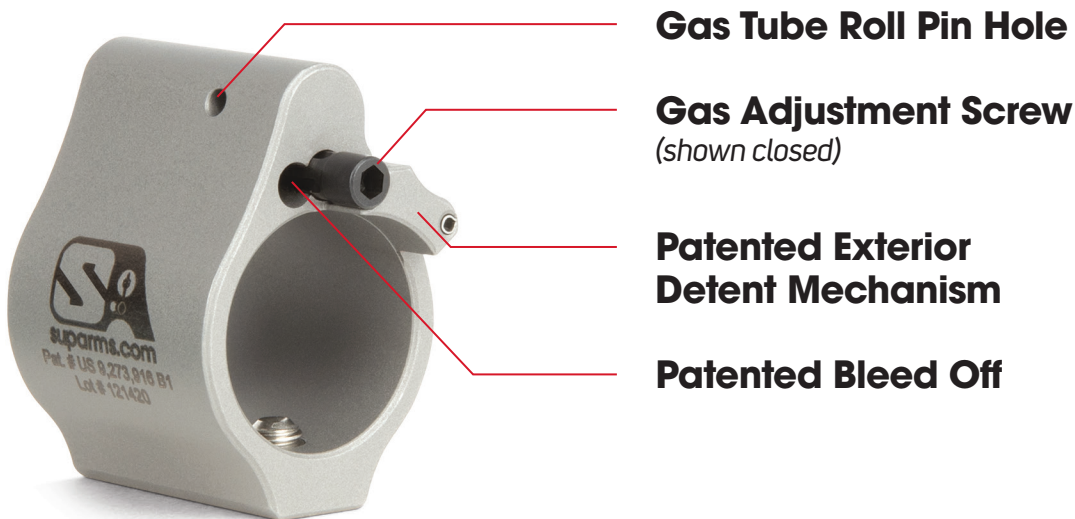
# **PATENTED BLEED OFF® MODE**

In Bleed Off Mode the gas adjustment screw does not restrict the gas flow; therefore, there is no erosion or seizing of the screw, and no loss of detent due to carbon build up. Although it is removable, we have added a safety mechanism, which stops you from unintentionally backing the screw all the way out.

## **BLEED OFF MODE VS RESTRICTIVE MODE**

*Using the right amount of gas pressure in our Patented Bleed Off Mode has many benefits:*

- Proper cycling of the bolt carrier group by using the correct amount of gas
- Less felt recoil allowing for faster follow up shots
- Less heat and carbon fouling, keeping your DI system cooler and cleaner
- Minimize wear on the internal components
- Adjustment screw is not exposed to high heat, pressure and fouling



Although you can use your gas block in restrictive mode, we always recommend using the Patented Bleed Off Mode to experience the benefits listed above. ***Running in restrictive mode may eventually erode and/or seize the gas adjustment screw from operating effectively.***

Our direct impingement adjustable gas blocks can be used with any caliber, any barrel length, and any gas system length for the AR-15 or AR-10/LR-308 platform. Tune your rifle for a perfect brass ejection pattern, whether you are unsuppressed or suppressed. Please keep in mind, it will always be a balance between using the correct buffer weight and spring with the adjustability of the gas block. If you are unsure what buffer weight and spring you should use, always start with the lightest buffer and spring weight or tension, and work your way up to a heavier buffer if needed.

## STEP 1 |

Start with a barreled upper receiver (minus the handguard and muzzle device).

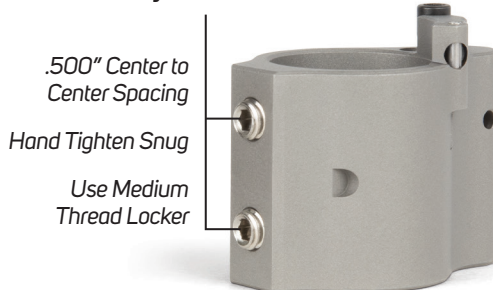
## STEP 2 |

Attach the appropriate length gas tube (not included) to the gas block using the provided 5/64" x 5/16" slotted roll pin. **Note:** We recommend using a flat punch for installation. A dimpled punch may cause the roll pin to spread.

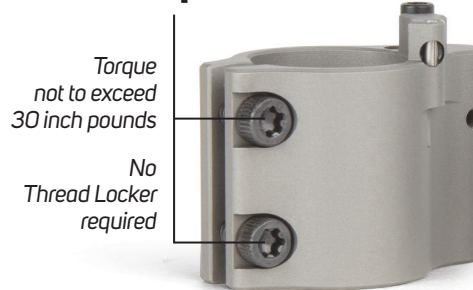
## STEP 3 |

Carefully slide the gas block towards the barrel shoulder, allowing for a .025" gap between the shoulder and the back of the block (use feeler gauges). This will locate the gas hole in the barrel with the gas hole in the block. The mil-spec call out from the shoulder to the center of the gas hole is .295" on an AR-15. Some barrels and/or other platforms (AR-10) may have a proprietary gas port location. If you are not sure, please contact the barrel manufacturer. This is critical for proper gas hole alignment.

### Solid, Set Screw



### Clamp On



### INSTALLATION TIP:

*If you are having difficulty getting the gas block onto the barrel, you can use grease to help slide it on. For clamp on gas blocks, use a large flat head screw driver with tape on the tip to help carefully spread the gas block. Do not twist the gas block as this may scratch the barrel.*

## STEP 4 | FOR SOLID, SET SCREW GAS BLOCKS

Visually align the top radius of the gas block with the center of the clover in the upper receiver and proceed to tighten your set screws with a standard 3/32" Allen wrench. Many barrels are pre-dimpled. Superlative Arms gas blocks have a set screw location of .500" from center to center. If the pre-dimpled barrel you have chosen has a different center to center, you may secure the screw closest to the shoulder. Apply medium thread locker to the threads of the set screws and **only hand tightening is needed, or torque not to exceed 20 inch lbs.**

## STEP 4 | FOR CLAMP ON GAS BLOCKS

Visually align the top radius of the gas block with the center of the clover in the upper receiver and lightly snug your clamping screws with a Torx T-15 wrench provided. Using a torque wrench (inch lbs.), slowly tighten the clamping screws. **Not to exceed 30 inch lbs.** Thread locker not required. If you removed the clamping screws, please make sure you reinstall them in the same direction.

## STEP 5 |

Install your handguard and visually verify that the gas block is centered.

## STEP 6 |

Proceed to the **ADJUSTMENT INSTRUCTIONS.**

# ADJUSTMENT

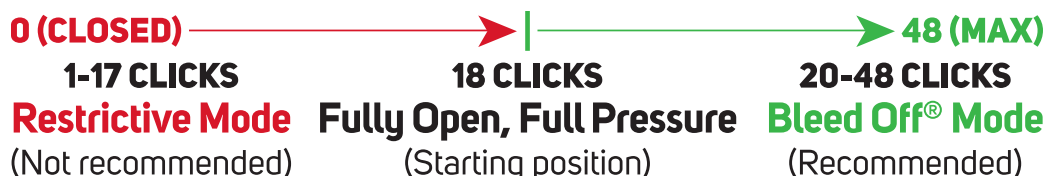


**PLEASE READ BEFORE HEADING TO THE RANGE, TRAINING, OR DUTY.**

**NOTE:** There are numerous variables that will effect gas pressure such as ammo, gas port diameter, barrel length, gas system length, buffer weight, carrier weight, use of a suppressor, etc. It is imperative to know how your rifle is operating. We recommend using a standard carbine buffer and buffer spring, a standard bolt carrier group, and unsuppressed to dial in your rifle. You can always add specialty components (one at a time), or a suppressor later.

## OPTIMIZING YOUR DIRECT IMPINGEMENT SYSTEM

The Superlative Arms Patented Bleed Off Gas Block comes to you with the adjustment screw in the closed position (zero pressure). **DO NOT FIRE YOUR WEAPON WITH THE GAS BLOCK IN THE CLOSED POSITION.** This could result in damaging your gas block and/or gas adjustment screw.



### STEP 1 | BEFORE FIRING

Start by backing out the gas adjustment screw from the closed position to the starting position using the provided 3/32" Ball-end Allen tool counter-clockwise (CCW) 18 clicks or 4 1/2 revolutions (4 clicks per revolution) to a fully open, full pressure position. This is equal to a non-adjustable gas block at full pressure. A barrel manufacturer will port their barrels for a non-adjustable gas block. From 18 clicks you have 30 more clicks of adjustment in **BLEED OFF MODE** you can make before the patented exterior detent mechanism prevents the gas adjustment screw from being backed out all the way. This is a reference point so the end user knows this is the last position of adjustment. Do not over-torque as this will damage the plunger.

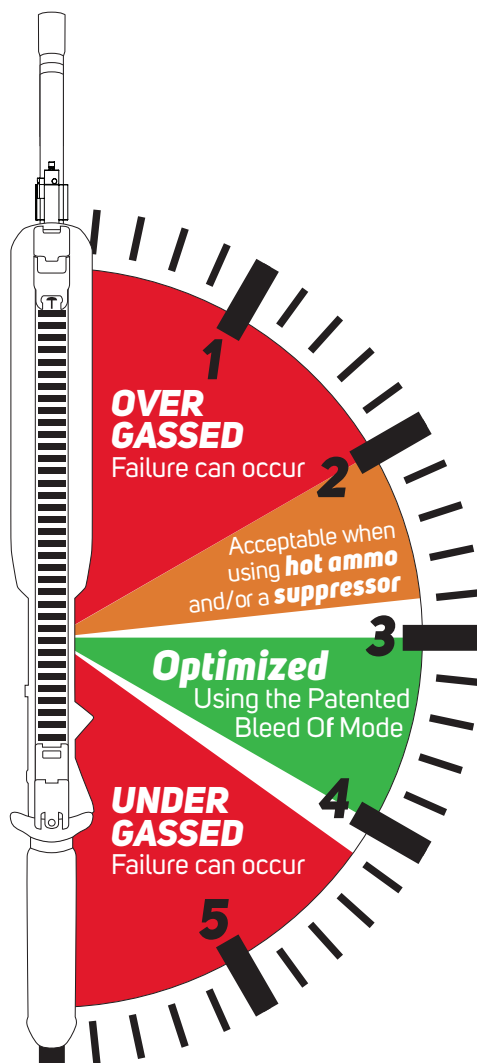
### STEP 2 | LOCK & LOAD

Load 3-5 rounds into the rifles magazine using the lowest pressure ammo that you plan to use. Keeping your rifle pointed in a safe direction (down range), insert the magazine and charge the rifle. In a safe manor, fire your rounds at your intended target while paying attention to your brass ejection pattern.

**YOUR GOAL** is to get your brass ejecting between 3 and 4 o'clock **FOR AN OPTIMIZED GAS SYSTEM.**

If your brass is ejecting between 4-6 at the starting point, **YOUR SYSTEM IS UNDER GASED.**

If your brass is ejecting between 12-2 at the starting point, **YOUR SYSTEM IS OVER GASED.**



## STEP 2 | Continued

### IS YOUR RIFLE CYCLING PROPERLY?

- **✗ Not at all, not ejecting, or cycles but doesn't lock back on an empty magazine. Brass ejection pattern is between 4-6 and brass ejection is weak.**

**STOP HERE!** Do not make any adjustment to the gas block. You may be dealing with an under gassing issue or another variable that is affecting the operation. Some examples are: Buffer/buffer spring too heavy, low pressure ammunition, adjustment screw not at the starting position, or another rifle component: poor installation / out of spec / tolerance issue.

**Under gassing failures** occur when there is not enough gas pressure to cycle the BCG properly.

If you are under gassed, please follow these recommendations:

- > Use a lighter buffer and/or buffer spring. If you are running a standard carbine buffer, you can remove or change some of the weight(s) inside the buffer, or use a lighter spring.
- > Try running higher pressure ammo to see if you are marginal.
- > Verify that you have followed the installation instructions correctly. Your gas block may be not have proper coverage of the gas hole.
- > Add more back pressure with a muzzle device or suppressor.
- > Check gas port size on your barrel.

**Extreme over gassing failures** can be similar to under gassing failures and can be resolved by using a heavier buffer weight and/or heavier spring after maximum adjustment has been made.

- **✓ Yes, perfectly between 3 and 4 o'clock!**

No adjustment is required as your rifle is optimized. If you shoot higher pressure ammo or add a suppressor you may experience over gassing. If you do, move on to Step 3.

- **✓ Yes, but I'm experiencing over gassing and my brass ejection pattern is between 12-2 o'clock.**

Failures can occur by the speed of the carrier coming back too fast. This where you can make adjustment to the gas screw. Move on to Step 3.

## STEP 3 | TIME TO OPTIMIZE

Continue backing out the gas adjustment screw counterclockwise from the starting position into the Bleed Off Mode one full revolution at a time until you achieve the desired brass ejection pattern. If you have made maximum adjustment and you are still over gassed or reached optimization, we recommend increasing your buffer weight and/or buffer spring tension. This will allow the adjustment screw to come back in so you are not running at the maximum setting and allow for more adjustability. Once you get your rifle consistently ejecting between 3-4 o'clock, you are all set, unless you change ammo or add/remove a suppressor.

**WARNING** | Always practice safe firearm handling procedures when using or maintaining firearms. Superlative Arms® is not responsible for damage, injury, or death caused by your own intentional, accidental, or negligent discharge or misuse of the firearm.



## MAINTENANCE |

When using the Bleed Off® Mode, maintenance is typically not required. If you do notice some carbon build up from using dirty ammo and/or a suppressor, back out the gas adjustment screw counterclockwise until it stops and use a nylon brush and some carbon remover to gently clean the adjustment screw. Apply a small dab of anti-seize. Then reset the adjustment screw to the starting position or last place of adjustment.

If you plan on shooting in restrictive mode, we highly recommend backing out the gas adjustment screw counterclockwise until it stops and apply a small dab of anti-seize to the gas adjustment screw before going into restrictive mode. You may also need to keep working the screw in and out to avoid carbon-locking after firing your weapon. If you notice some carbon build up on the gas adjustment screw from using dirty ammo and/or a suppressor, proceed to back out the gas adjustment screw counterclockwise until it stops and use a nylon brush and some carbon remover to gently clean the gas adjustment screw. We DO NOT recommend completely disassembling your gas block for any sort of maintenance as this will void your warranty. General maintenance on your gas tube is recommended after high round count.

## HELPFUL TIPS |

- > Take notes on your build and the adjustments you made to dial in your rifle from the starting point. This will help when adding or removing a suppressor, and/or changing ammunition.
- > When adding new components to your build that affect the operation and cycling, do it one at a time so you can see how your system will react.
- > Do not use the provided 3/32" Ball-end Allen for torquing/tightening mounting screws. It is meant for the gas adjustment screw only.
- > For faster results, and to save ammo, turn the gas adjustment screw one full revolution-at-a-time instead of adjusting one click-at-a-time.
- > Any time you make a change to the buffer system (change buffer weight, change buffer spring, or both) reset the gas adjustment screw back to the starting position.
- > If you remove the gas block after it has been installed and used, we recommend installing new screws when reinstalling the gas block.
- > If you have any issues getting your gas block installed and/or adjusted, need help resolving a system issue, please reach out to customer service as we are always happy to help.



**SUPRATIVE ARMS®**

# **THE FOUR RULES OF FIREARMS SAFETY**

## **RULE 1**

Handle all firearms as if they were loaded.

## **RULE 2**

Always keep the firearm pointed in a safe direction.

## **RULE 3**

Keep your finger out of the gun's trigger guard and off the trigger until you have aligned the gun's sights on a safe target and you have made the decision to fire.

## **RULE 4**

Always be aware of your bullets trajectory, know your target and what lies beyond it.

**THESE RULES APPLY ON A ONE WAY RANGE OR ON A TWO WAY RANGE.  
FOLLOW THESE RULES AT ALL TIMES WHEN HANDLING ALL FIREARMS.**

*Quality ear and eye protection should always be worn when shooting or observing.*

*Never use firearms while under the influence of drugs or alcohol.*

*All firearms should be stored unloaded and secured in a safe storage case,  
inaccessible to children and untrained adults.*