

DI BUILDERS KIT

FOR THE DIRECT IMPINGEMENT GAS SYSTEM

Thank you for purchasing Superlative Arms® products. Your DI Builders Kit includes: (1) Superlative Arms DI Carrier, (1) Superlative Arms DI Adjustable Gas Block with our Patented Bleed Off® Mode, (1) pre-installed gas tube, (1) gas block adjustment tool, and (1) set of instructions for installation and adjustment. **Before proceeding to installation, please make sure to follow the safety steps below:**

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 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.

INSTALLING THE SUPERLATIVE ARMS ADJUSTABLE GAS BLOCK

1. Start with a barreled upper receiver (minus the handguard and muzzle device).
2. While carefully sliding the gas block towards the barrel shoulder, also guide the gas tube into the upper receiver. Allow for a .025" gap between the shoulder and the back of the gas 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 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.**

FOR SOLID, SET SCREW GAS BLOCKS

- 3A. 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 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.

FOR CLAMP ON GAS BLOCKS

- 3B. 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 pounds), slowly tighten the clamping screws. Not to exceed 30 inch lbs. Thread locker is not required.
4. Install your handguard to visually verify that the block is centered.
5. Proceed to the **ADJUSTMENT INSTRUCTIONS.**

INSTALLATION TIP: If you are having difficulty getting the gas block on 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.

DI BUILDERS KIT |

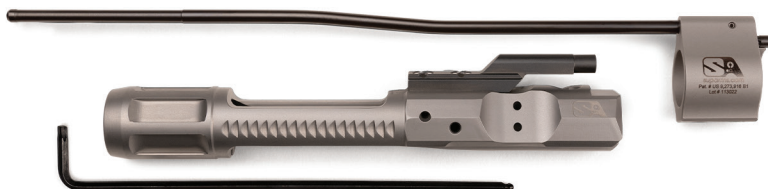
(1) Superlative Arms DI Carrier, (1) Superlative Arms DI Adjustable Gas Block, (1) Pre-installed Gas Tube, (1) Gas Block Adjustment Tool, and (1) Set of Instructions for Installation and Adjustment.

BOLT CARRIER |

Carrier Type: Right/Left Hand, Full-Auto/Semi-Auto, AR-15
Bolt Carrier Material: 8620 Steel
Bolt Carrier Finish: Chrome-lined, DLC (Diamond-like Coating)
Carrier Key Material: 4130 Steel
Carrier Key Finish: Chrome-lined, DLC (Diamond-like Coating)
Weight: 9.3 oz.

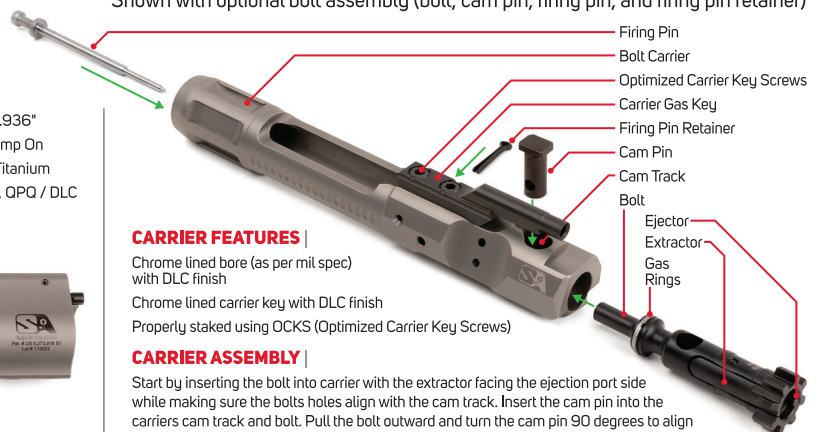
GAS BLOCK |

Barrel Diameter: .625" / .750" / .875" / .936"
Attachment Type: Solid, Set Screw / Clamp On
Material: 416 Stainless Steel / Grade 5 Titanium
Finish: Stainless Steel, Matte / Melonite, QPQ / DLC
Weight: 1.37 oz. - 1.84 oz.
Length: 1.00"



BOLT CARRIER GROUP COMPONENTS |

Shown with optional bolt assembly (bolt, cam pin, firing pin, and firing pin retainer)



CARRIER FEATURES |

Chrome lined bore (as per mil spec) with DLC finish
Chrome lined carrier key with DLC finish
Properly staked using OCKS (Optimized Carrier Key Screws)

CARRIER ASSEMBLY |

Start by inserting the bolt into carrier with the extractor facing the ejection port side while making sure the bolts holes align with the cam track. Insert the cam pin into the carriers cam track and bolt. Pull the bolt outward and turn the cam pin 90 degrees to align its holes to accept the firing pin. Insert the firing pin into the carrier. Secure the firing pin by inserting the firing pin retainer. Make sure the firing pin is secure and will not fall out.

ADJUSTMENT INSTRUCTIONS USING THE SUPERLATIVE ARMS® PATENTED BLEED OFF® MODE

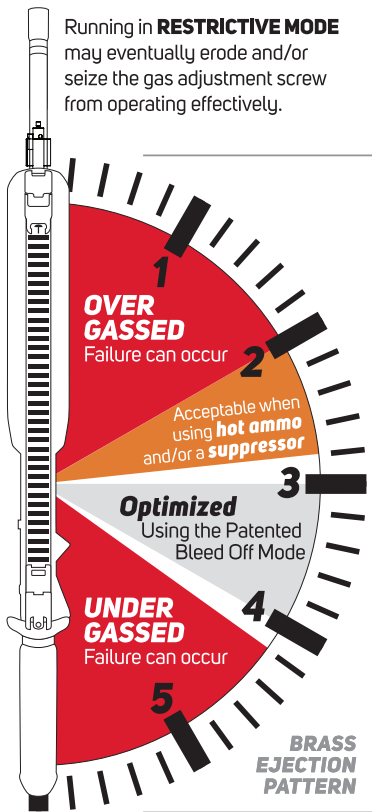
*** PLEASE READ BEFORE HEADING TO THE RANGE, TRAINING, OR DUTY ***

BLEED OFF MODE VS RESTRICTIVE MODE |

Using the right amount of gas pressure in **BLEED OFF MODE** has many benefits:

- Proper cycling of the bolt carrier group.
- 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 bleed off mode to experience the benefits listed above.



WARNING | We recommend that a 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.

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). From here you will adjust the piston gas block utilizing the 3/32" Allen wrench provided.

Before firing, start by backing out the gas adjustment screw counterclockwise 18 clicks or four and a half revolutions (4 clicks/revolution). 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 you can make before the patented exterior detent mechanism prevents the gas adjustment screw from coming all the way out. 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*****

Next, load 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 consecutively at your intended target, while noticing where your brass is ejecting. Please do not use a brass catcher during this process.

Is your rifle cycling properly? If you are not cycling properly, or not at all, **STOP HERE.** Please check to make sure you have adjusted the gas adjustment screw out CCW to the starting point of 4.5 revolutions from closed. If yes, please check the installation of your gas system components. The gas block may be installed incorrectly or another variable may be effecting the operation.

If your rifle is cycling properly, where is your brass ejecting? Where your brass is ejecting can tell you how your system is operating and how to make the correct adjustments.

BRASS EJECTION PATTERN | (REFER TO THE DIAGRAM LEFT)

For a standard AR-15, if your brass is ejecting between 3-4, your gas system is optimized. For best results, dial it in between 3-3.5 (with usage, your BCG will slow down with carbon build-up mimicking an under gassed system). If your brass is ejecting between 1-2.75, your system is over gassed. If your brass is ejecting between 4-6, your system is under gassed. An over/under gassed system can cause failures.

OVER GASSED |

Failures can occur by the speed of the carrier coming back too fast. If you are over gassed, follow these instructions: Back the adjustment screw out counterclockwise until you bleed off enough pressure to achieve the recommended brass ejection pattern. If you are still over gassed at full bleed off, we recommend using a heavier buffer and/or buffer spring.

UNDER GASSED |

Failures can also occur when there is not enough gas pressure to cycle the BCG properly. If you are under gassed, please follow these recommendations:

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

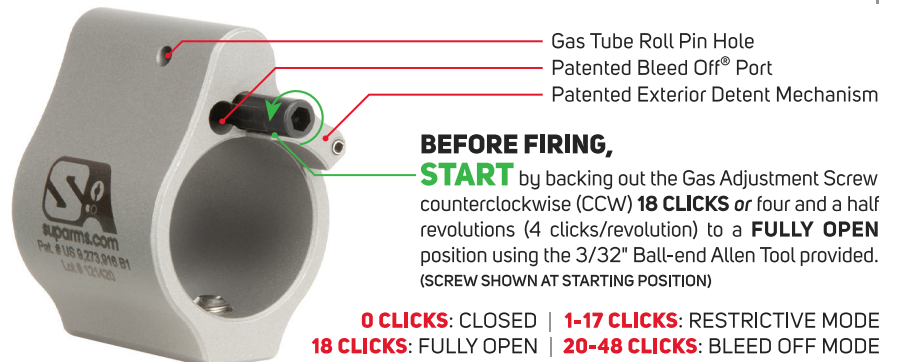
MAINTENANCE |

No maintenance is required when using Bleed Off Mode. If you plan on shooting in restrictive mode, we highly recommend backing the gas adjustment screw out counterclockwise until it stops and apply a dab of anti-seize to the gas adjustment screw before going into restrictive mode.

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 effect the operation and cycling, do it one at a time so you can see how your system will react.

UNDERSTANDING THE GAS BLOCK AND ADJUSTMENT |



Designed & Manufactured in Florida, USA Patent # US 9,273,916 B1

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