



April 4, 2012

**TECHNICAL NOTE 73: INSTALLATION AND USE OF  
ARMALITE'S® AR-10® S SASS HANDGUARD / GAS SYSTEM KIT  
(P/N 10109600KIT)**

NOTE: This document is for informational purposes only. It does not constitute a contract. The information contained herein is subject to change without notice. The information contained herein is for informational purposes only. It does not constitute a contract. The information contained herein is subject to change without notice.

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The ARMALITE® AR-10® S SASS Handguard / Gas System Kit includes the following components:

- QUAD RAIL HANDGUARD, FREE FLOATING (P/N 10705317)
- ALUMINUM F/F HANDGUARD ALIGNMENT PIN (P/N EA5020)\*
- 1913 RAIL COVER, LONG, BLACK (3 INCLUDED) (P/N EA5030)
- SELECTIVE GAS REGULATOR ASSY (P/N 10109527)
- NUT, TUBE, GAS (P/N 10109550)
- AR-10S RIFLE GAS TUBE (P/N 10109545)

\* PERMANENTLY ASSEMBLED TO THE QUAD RAIL HANDGUARD

Make certain that your kit contains all of these components.

\*\*\*\*\*wwb,,Y::FwLYHwFwOV,AG,OQT,kTFTLOWUT,(YK)HOTB,

ArmaLite's® Selective Gas System is only intended to be used on firearms that are fitted for a sound suppressor. Installing a sound suppressor on any semiautomatic (or automatic) firearm will significantly increase the cyclic rate of the firearm. The increased cyclic rate will increase stresses on rifle components and may result in an increased rate of malfunctions and/or parts breakage. ArmaLite's® Selective Gas System allows the user to reduce the gas flow to the weapon system when a sound suppressor is being employed, thereby reducing the cyclic rate of the rifle.

This kit CANNOT be installed on any ArmaLite® AR-10® Carbines or Rifles EXCEPT

AR-10T® RIFLES and the AR-10NM® Rifle. AR-10T® and AR-10NM® rifles have 20” barrels with a diameter of 0.875” under the front sight.

In order to install this kit on any other AR-10®, it would be necessary to replace the barrel with an AR-10T® Rifle barrel or AR-10NM® Rifle barrel.

Installing a sound suppressor on an AR-10T® Rifle will require threading of the muzzle of the AR-10T’s® barrel. The AR-10NM® barrel is threaded 5/8 – 24. If the sound suppressor that you intend to use has a different thread pitch or diameter, you will need to cut off, recrown, and rethread the NM barrel.

Note that the Quad Rail handguard of the AR-10NM® appears similar to the handguard of the SuperSASS. However, the SuperSASS handguard has a relief cut that allows access to the gas valve. Therefore, the two handguards are not interchangeable.

ArmaLite® utilizes the Selective Gas System on our Super SASS™ rifles. We advise that you download a copy of our Super SASS™ owner’s manual from our website and rely on it for detailed explanations of use of a firearm with a variable gas system.

Inasmuch as ArmaLite® has no control over the installation of the kit or threading of the muzzle, any such modification voids your warranty.

We have not tested our Selective Gas System with every make and model of sound suppressor available on the market. ArmaLite® assumes no liability nor provides any implied warranty or suitability of use for individual makes and models of sound suppressors available on the market.

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- TORQUE WRENCH (COMMERCIAL)
- STRAP WRENCH (COMMERCIAL)
- AR-10 UPPER RECEIVER VISE JAWS, 2 PC, PLASTIC (ARMALITE P/N EX1615)
- ALLEN WRENCHES (COMMERCIAL)
- FREE FLOAT BARREL NUT WRENCH (P/N 10901012)
- 3/8” FLARE NUT WRENCH (COMMERCIAL)
- STANDARD ½” COMBINATION WRENCH (COMMERCIAL)
- ROCKETT BRAND HIGH TEMPERATURE ENGINEERING ADHESIVE (COMMERCIAL)
- 0.099” DRILL BIT (COMMERCIAL)

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ArmaLite’s® Selective Gas System should only be installed by the factory or by a qualified gunsmith. This procedure assumes that you will be converting an AR-10T® or AR-10NM® Rifle to utilize ArmaLite’s® selective gas system. Disassembly and reassembly of the AR-10® beyond that explained in the owner’s manual will be required. See the AR-10® Owner’s Manual for basic disassembly and reassembly procedures. Additional disassembly and assembly are explained herein.

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LAB:ANTNOK,

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,,YeNwN(E,YF'YVk,Ykk-BT,YFF,GweTYeBk,YeT,FAY.T.b,, YNVOwBT,  
VA-,QYN.FT,Y,GweTYeB0,VA-,kQA-F.,wBBT.wYOTFV,wNk:TL O,wO,OA,  
Ykk-eT,OQYO,wO,wk,LAB:FTOTFV,-NFAY.T.b,,


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,,YeNwN(E,,wG,VA-,CNA',NAOQwN(TFkT,YHA-O,VA-e,YeB YFwOTZ,  
GweTYeB0,VA-,B-kO,CNA',QA',OA,-NFAY.,wO,YN.,LFTYe,w O,OA,BYCT,wO,  
kYGTb,

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1. Remove the magazine by pressing the magazine catch button and pulling the magazine down and out of the receiver.

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,,LY-OwANE,,OQT,BY(YXwNT,'wFF,GYFF,GeTT,'QTN,OQT,BY( YXwNT,  
LYOLQ,wk,:eTkkT.b,,ANJO,YFFA',OQT,BY(YXwNT,OA,GYFF ,ANOA,Y,QYe.,  
k-eGYLTb,,AwN(kA,BYV,.YBY(T,OQT,BY(YXwNTb,,

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2. Place the safety selector on "SAFE".

NOTE: If the firearm is not cocked, the lever cannot be pointed toward "SAFE".

3.,,Extract the cartridge (if any) from the chamber. To extract a cartridge pull the bolt carrier assembly fully to the rear. If there is a cartridge in the chamber, it should be extracted and ejected from the firearm.

4. Look into the chamber to assure that it does not contain a cartridge.


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,,YeNwN(E,,NTUTE,Ykk-BT,OQYO,OQT,LQYBHTe,wk,TB:OV, -NOwF,VA-,  
QYUT,Uwk-YFFV,T/YBwNT.,wO,YN.,kTT,OQYO,wO,wk,TB:OVb ,

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5. Remove any remaining cartridges from your magazines.

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,,YeNwN(E,,OQT,kOT:k,wN,-NFAY.wN(,VA-e,GweTYeB,B kO,HT,  
GAFFA'T.,wN,OQT,T/YLO,Ae.Te,(wUTNb,,OQT,BY(YXwNT,B- kO,HT,  
eTBAUT.,HTGAeT,OQT,LQYBHTe,wk,wNk:TLOT.b,,wG,VA-,LF TYe,OQT,  
LQYBHTe,HTGAeT,eTBAUwN(OQT,BY(YXwNT0,VA-,BYV,eTBAU T,ANT,  
LYeOew.(T,GeAB,OQT,LQYBHTe,YN.,OQTN0,-:AN,LFAkwN(O QT,HAFO0,  
LQYBHTe,YNAOQTe,LYeOew.(T,GeAB,OQT,BY(YXwNTb,,OQT,G weTYeB,  
'wFF,kOwFF,HT,FAY.T.b,,eTBTBHTe,OQYO,Y,LYeOew.(T,wN ,OQT,LQYBHTe,  
LYN,kOwFF,HT,GweT.,TUTN,YGOTE,OQT,BY(YXwNT,wk,eTBAU T.b,

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6. Remove the upper receiver assembly from the lower receiver assembly as directed in your owner's manual. Then remove the bolt carrier assembly and charging handle from the upper receiver assembly. If you don't have an owner's manual, you can find it in the Library section of ArmaLite's website.

7. Loosen the two retaining screws that hold the gas block to the barrel. Then slide/tap the gas block and gas tube assembly forward until it comes free.

8. Remove the bolt from the bolt carrier. Insert the bolt carrier into the receiver until it stops. Close the ejection port door. Now the bolt carrier will help prevent crushing of the upper receiver when you apply the vise jaw blocks. However, still be careful to use the minimum amount of clamping force needed to retain the upper receiver. Clamp the vise jaws onto the upper receiver and then clamp the jaws in a vise. Use a strap wrench to grasp the handguard lock ring at the front of the receiver. Loosen the ring by rotating it counterclockwise as viewed from the butt and pull forward on the handguard at the same time. Wiggling the handguard slightly as it loosens may help.

9. Remove the handguard lock ring, handguard, barrel nut, and barrel from the receiver.

NOTE: The lock ring, barrel nut, and barrel only need to be removed for convenience during drilling out of the gas port hole and threading of the muzzle.



**Uwb,,wNkOYFFYOwAN,AG,kTFTLOWUT,(Yk,kVkOTB,  
LAB:ANTNOK,**

1. The AR-10T's® (and AR-10NM's) gas port in its barrel is smaller than the gas port on the S SASS™. So, you'll need to drill out the barrel's gas port. For the standard S SASS™ barrel, the appropriate gas port diameter is 0.099 inches. If you are using an aftermarket barrel (particularly if it is significantly longer or shorter than 20"), you may need to experiment to determine a gas port diameter that gives proper cyclic rate. That may require starting with a smaller gas port and repeatedly drilling it out, assembling the rifle, and testing for function. Appropriate gas port diameter is achieved when the rifle cycles reliably without excessive ejection force. A longer barrel will typically require a smaller gas port diameter.

2. If you're starting with an AR-10T®, you'll need to thread the muzzle of the barrel for the sound suppressor of your choice.

3. The proper O.D. of the barrel under the gas block is nominally 0.875". The proper distance of the shoulder for the gas block from the leading flange on the barrel extension is nominally 12.140". If you are using an AR-10T®, the barrel will be the correct dimensions. If you are installing a custom barrel, it must match these dimensions.



4. Grease the threads in the upper receiver lightly with a heavy duty grease. Install the barrel and lock ring assembly to the upper receiver as shown. Torque the barrel nut onto the upper receiver to 45 ft.lb. Then loosen the barrel nut and retorque to 45 ft.lb. Then loosen and retorque a third time to 45 ft.lb. Then tighten further as needed to align the gas tube hole in the upper receiver to match the next hole of the barrel nut to allow the gas tube to pass freely through the nut and rest freely in the center of the upper receiver. (See photo below.)



5. Slip the handguard tube assembly over the barrel, aligning the locator pin. Push the handguard toward the barrel nut while screwing the lock ring onto the handguard. Use a strap wrench to grasp the handguard lock ring at the front of the receiver. Tighten the lock ring by rotating it clockwise (as viewed from the butt), and pull rearward on the handguard at the same time. Wiggling the handguard slightly as it tightens may help.



'YeNwN(E,,T/LTkkwUT,Ow(QOTNwN(,AG,OQT,FALC,ewN('wO Q,Y,kOeY:,  
'eTNLQ,LYN,FAAKTN,OQT,HYeeTF,N-O0,Ae,,TGAeB,OQT,(Yk ,O-HTb,,,

6. Assemble the gas tube to the gas block utilizing the hex nut. Place a small amount of Rocksett adhesive on the threads of the hex nut and tighten securely.

7. Install the gas block and gas tube assembly onto the barrel by gently sliding/tapping it into place. The front sight base / gas block must be vertical and aligned with the centerline of the upper receiver. Lock it in place using the two screws torqued to 65 in-lbs.

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