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TECHNICAL NOTE 79: INSTALLATION OF ARMALITE'S® AR-10® QUAD RAIL FREE FLOAT HANDGUARD KITS

NOTE: Please read these instructions thoroughly to determine if you are comfortable with the installation tasks. If you would like our Premier Services Division to install this kit into your firearm, please contact our sales department at PSD@armalite.com or 800-336-0184 x126. Kit installation by our Premier Services Division typically requires less than one hour of labor.

I. KITS AND KIT COMPONENTS

These instructions apply to the following ArmaLite® Free Float Handguard Kits:

AR-10 QUAD RAIL RIFLE HANDGUARD KIT, FREE FLOAT, ALUMINUM (P/N 10705318KIT)

AR-10 QUAD RAIL CARBINE MID-LENGTH HANDGUARD KIT, FREE FLOAT, ALUMINUM, BLACK (P/N 10705323KIT)

The ARMALITE® AR-10® Quad Rail Free Float Handguard Kits include the following components:

ALIGNMENT PIN (P/N EA5020)

BARREL NUT (P/N EA1146)

LOCK RING (P/N EA5030)

AR-10T PORT DOOR ROD (P/N EA1170)

RAIL COVER (3 INCLUDED) (P/N 10708019)

GAS BLOCK SPACER (P/N EU0335)

And ONE of the below-listed quad rail handguards:

HANDGUARD (P/N 10705318)

HANDGUARD (P/N 10705323)


Make certain that your kit contains all of these components.

II. APPLICABILITY OF THE QUAD RAIL FREE FLOAT HANDGUARD KITS

Rifle kits can be used on most AR-10s® with rifle length (12") gas systems.

Carbine mid-length kits can be used on most AR-10s® with mid-length (8") gas systems.

See the below **CAUTION**.

 **CAUTION: INSTALLATION OF THE FREE FLOAT HANDGUARD KIT REQUIRES REMOVAL OF THE MUZZLE BRAKE OR FLASH SUPPRESSOR. PINNED ON, OR PINNED AND WELDED ON, MUZZLE BRAKES ARE NOT USER REMOVABLE. PINNED AND WELDED MUZZLE BRAKES ARE FACTORY REMOVABLE ONLY. PINNED MUZZLE BRAKES ARE NOT REMOVABLE AT ALL. ONLY SCREW-ON FLASH SUPPRESSORS ARE USER REMOVABLE.**


III. TOOLS REQUIRED (NOT IN KIT)

TORQUE WRENCH (COMMERCIAL)
STRAP WRENCH (COMMERCIAL)
AR-10 UPPER RECEIVER VISE JAWS, 2PC, PLASTIC (ARMALITE P/N EX1615)
ALLEN WRENCHES (COMMERCIAL)
3/4" WRENCH
1/8" PUNCH
G.I. ARMORER'S WRENCH (COMMERCIAL) (ONLY NEEDED FOR MODELS WITH 2-PIECE HANDGUARDS)
FREE FLOAT BARREL NUT WRENCH (P/N 10901012)

IV. KIT INSTALLATION PROCEDURE


This procedure assumes that you will be converting an AR-10® to utilize ArmaLite's® quad rail free float handguard. Disassembly and reassembly 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.

V. REMOVAL OF ORIGINAL COMPONENTS

 **WARNING: ALWAYS ASSUME ALL FIREARMS ARE LOADED. ANYTIME YOU HANDLE A FIREARM, YOU SHOULD IMMEDIATELY INSPECT IT TO ASSURE THAT IT IS COMPLETELY UNLOADED.**

 **WARNING: IF YOU KNOW NOTHING ELSE ABOUT YOUR ARMALITE® FIREARM, YOU MUST KNOW HOW TO UNLOAD IT AND CLEAR IT TO MAKE IT SAFE.**

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

 **CAUTION: THE MAGAZINE WILL FALL FREE WHEN THE MAGAZINE CATCH IS PRESSED. DON'T ALLOW THE MAGAZINE TO FALL ONTO A HARD SURFACE. DOING SO MAY DAMAGE THE MAGAZINE.**

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.

 **WARNING: NEVER ASSUME THAT THE CHAMBER IS EMPTY UNTIL YOU HAVE VISUALLY EXAMINED IT AND SEE THAT IT IS EMPTY.**

5. Remove any remaining cartridges from your magazines.

 **WARNING: THE STEPS IN UNLOADING YOUR FIREARM MUST BE FOLLOWED IN THE EXACT ORDER GIVEN. THE MAGAZINE MUST BE REMOVED BEFORE THE CHAMBER IS INSPECTED. IF YOU CLEAR THE CHAMBER BEFORE REMOVING THE MAGAZINE, YOU MAY REMOVE ONE CARTRIDGE FROM THE CHAMBER AND THEN, UPON CLOSING THE BOLT, CHAMBER ANOTHER CARTRIDGE FROM THE MAGAZINE. THE FIREARM WILL STILL BE LOADED. REMEMBER THAT A CARTRIDGE IN THE CHAMBER CAN STILL BE FIRED EVEN AFTER THE MAGAZINE IS REMOVED.**

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.

7. **SEE THE CAUTION IN SECTION II ABOVE!!!** Remove the flash suppressor using a 3/4" wrench.

8. Look at the front sight base / gas block. If it is pinned onto the barrel, drive out the two pins with a 1/8" punch. If it is held to the barrel with screws, loosen the two retaining screws. Then slide/tap the base / block and gas tube assembly forward until it comes free.

9. If the firearm has two-piece handguards, remove them in accordance with the owner's manual.

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 jaws. However, still be careful to use the minimum amount of clamping force needed to retain the upper receiver. If the firearm has a one-piece handguard, 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.

10. Remove the handguard lock ring, handguard, and barrel nut from the receiver. The barrel may be left in place.



11. Hold the port door rod that's included in the kit next to the port door rod in the upper receiver. If the kit's rod is longer, remove the port door rod from the upper receiver and replace it with the one from the kit.

VI. INSTALLATION OF QUAD RAIL FREE FLOAT HANDGUARD KIT



1. Tighten the barrel nut using the following procedure:
 - Put a light coat of an anti-seize compound on the receiver threads of the upper receiver.
 - Using the proper barrel wrench you will hand tighten the barrel nut to 45 ft lbs.
 - Check for proper alignment of the barrel nut to allow passage of the gas tube through the receiver. For proper function, the gas tube must be **CENTERED** in the upper receiver so that it will not bind on the bolt carrier key.
 - If proper alignment is not achieved with the minimum torque setting, loosen the barrel nut, adjust the torque wrench by adding 5ft lbs, and re torque the barrel nut.
 - Continue this procedure until you have achieved proper alignment of the barrel nut to allow passage of the gas tube. (See photo below.)



2. Slip the handguard tube assembly over the barrel, aligning the locator pin in such a hole of the barrel nut that the sling swivel is located at the desired angle. (Most shooters will select the 6 o'clock position.) 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.

⚠️ WARNING: EXCESSIVE TIGHTENING OF THE LOCK RING WITH A STRAP WRENCH CAN LOOSEN THE BARREL NUT, OR DEFORM THE GAS TUBE.

3. If your firearm originally had two-piece handguards, dispose of the original handguard cap and install the gas block spacer in its place.

4. Install the front sight base / 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, or replace the two pins.

5. Reinstall the flash suppressor washers and flash suppressor. Using a 3/4" wrench, torque the flash suppressor until its flats are vertical.

6. Install the sling swivel washer onto the sling swivel stud. Install the stud into your choice of holes in the handguard. Install the sling swivel on the stud.

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