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TECHNICAL NOTE 99: INSTALLATION OF ARMALITE'S® AR-10® & M-15™ BARREL ASSEMBLIES

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 the barrel assembly 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. BARREL ASSEMBLY COMPONENTS

These instructions apply to all ArmaLite® Barrel Assemblies. All Barrel Assemblies will include (assembled together) a Barrel with Barrel Extension, a Barrel Nut, a pinned-on Gas Tube, and EITHER a Front Sight Base with Front Sight and Handguard Cap, or a Picatinny Gas Block. Some barrels will also include a Flash Suppressor.

NOTE: If the assembly includes an A2 style Front Sight Base, the Base will be pinned onto the Barrel. But, the Gas Tube will not be pinned into the Sight Base. The Gas Tube Pin will be included for your installation later in the overall installation procedure. If the assembly includes a Gas Block, the Gas Tube will be pinned to the Gas Block.

II. TOOLS REQUIRED

TORQUE WRENCH (COMMERCIAL)
AR-10 UPPER RECEIVER VISE JAWS, 2 PC, PLASTIC (ARMALITE P/N EX1615)
Or M15 UPPER RECEIVER VISE JAWS, 2 PC, PLASTIC (ARMALITE P/N EX1616)
ANTI SEIZE COMPOUND (COMMERCIAL)
1/8" PIN PUNCH (COMMERCIAL)
NONMARRING HAMMER (COMMERCIAL)
STANDARD BARREL NUT WRENCH (COMMERCIAL)
Or AR-10 FREE FLOAT BARREL NUT WRENCH (ARMALITE P/N 10901012)
Or M-15 FREE FLOAT BARREL NUT WRENCH (ARMALITE P/N 15091012)
BUBBLE LEVEL (COMMERCIAL)

III. INSTALLATION PROCEDURE

This procedure assumes that you will be installing a barrel assembly on an already assembled AR-10® or M-15™. Disassembly and reassembly of the firearm beyond that explained in the owner's


manual will be required. See the Owner's Manual for basic disassembly and reassembly procedures. Additional disassembly and assembly steps are explained below.

IV. REMOVAL OF ORIGINAL AR-10® OR M-15™ 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. Place the upper receiver in an appropriate set of vise jaws.
NOTE: See Tech Note 90: ARMALITE VISE JAWS AND BLOCKS for information on the selection and use of the appropriate jaws.
8. If the front sight base / gas block 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 and gas tube assembly forward until it comes free.
9. Using the appropriate barrel nut wrench, unscrew the barrel nut and remove the old barrel.

VI. INSTALLATION OF THE ARMALITE BARREL ASSEMBLY

NOTE: The installation procedure for barrels with pinned-on front sight bases is slightly different from the procedure for clamp-on sight blocks. We'll describe both procedures below.

1. a. CLAMP ON: Loosen the screws holding the gas block and tap the gas block gently forward until it clears its journal and can be moved to the front of the barrel.
b. PINNED-ON: The gas tube is not pinned into the front sight base. Carefully pull the gas tube out of the front sight base. Then set the gas tube and its pin somewhere safe.
2. Seat the new barrel fully in the upper receiver, taking care to assure that the locating pin on the barrel extension fits into its slot on the top of the upper receiver.
3. 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 the MINIMUM torque specified in Section VII below.
 - 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.
4. a. CLAMP-ON: Slide the gas block and gas tube assembly rearward onto its journal on the barrel by gently sliding/tapping it into place. You may have to use a flat-tipped screwdriver to spread the block a bit. As you do, slip the gas tube into its hole in the upper receiver. Using a bubble level, make certain that the top of the gas block is level with the top of the upper receiver. Also make certain that the gas tube is centered in the upper receiver. You may make SMALL radial adjustments to the gas block in order to center the gas tube. However, don't adjust the gas block so much that you restrict gas flow from the gas port in the barrel. Lock the gas block in place using the two screws torqued to 65 in-lbs.

b. PINNED-ON: Slide the gas tube rearward into the upper receiver. Then, slide it forward into the front sight base. Using the new gas tube pin from the kit, install the gas tube in the gas block.

5. Check for proper alignment of the gas tube by sliding the bolt carrier into the upper receiver and assuring that it mates to the gas tube without interference or binding.

6. Reassemble your firearm in accordance with the owner's manual.

VII. SPECIFIED BARREL NUT TORQUES FOR THE M15 AND AR10

Current ArmaLite® barrel nut torque standards are as follows:

M15 Barrel Nut – 35 to 65 ft lbs

AR10 Barrel Nut – 45 to 85 ft lbs

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