Building An AR-15: Secrets And Shortcuts You Won't Find On YouTube

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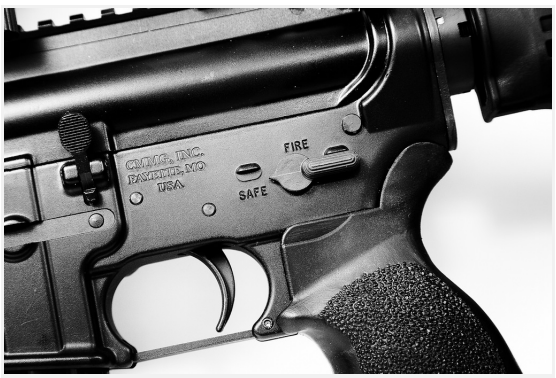

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One of the best things about the AR-15 platform is the amount of options available to shooters today.

Owners can customize the rifle to their own needs with thousands of aftermarket options, from grips and stocks to barrels, sights, rails and other accessories. The AR-15 is of the most user-friendly rifles in the world, and all of these modifications can be performed with basic hand tools. For the ultimate "custom rifle," the AR-15 can be completely built from the ground up.

Some authorities on rifles will point out that manufacturers are continuously responding to the needs of buyers and that virtually any configuration desired by a shooter can be had in a factory configuration. This is sound advice, as most "home-built" AR-15s can quickly approach the cost of a custom rifle and will not have any warranty or other method to protect the buyer in case of error. The $100-$300 saved can be of small solace if the rifle has a part that is out of spec, causing a catastrophic failure.

However, some shooters look at building their own rifle as more of a sense of accomplishment and satisfaction rather than force of economics, if only for the bragging rights of being able to say: "I built it myself."

Let's take a look at the specifics of building an AR-15, concentrating on a few tips that always make the job easier.

How to Build an AR-15: Lower Receiver

The lower receiver is the "part" that makes an AR-15 a firearm. "Lowers" must be transferred through a federal firearm licensee (FFL). Sometimes a lower receiver can be purchased as already completed with the fire control group, stock, pistol grip, bolt catch, magazine catch and takedown pins installed. However, stripped lower receivers containing none of these parts can be purchased from some manufacturers. Additionally, 80 percent receivers can be purchased which require some machining and refinishing to be performed. Such a build is beyond the scope of this article, so we will begin with the presumption that the builder is starting off with a stripped lower receiver.

When selecting a lower receiver, the shooter has a variety of choices. Some "boutique-type" manufacturers make runs with unique markings, pictograms or serial numbers. When assembling a bare lower receiver, the prospective builder will need the following tools:

- roll pin punches
- vise grips
- torque wrench
- rubber mallet
- brass hammer
- tap
- set screws
- wire cutter
- CLP/ Break Free

How to Build an AR-15: Protecting the Receiver

One of the hazards of any home gunsmithing project is accidentally peening or scratching the receiver. The AR-15 is prone to this, as assembly requires the use of hammers and punches. The best advice to prevent this is to use thin strips of cardboard and masking tape to "mummify" the receiver and protect it from an errant hammer strike.

The easiest step is the installation of the magazine catch. The catch goes into the lower receiver from the left-hand side. The "magazine catch spring" and the magazine release button are then inserted into the right-hand side. The builder must keep pressure on the magazine release button while turning the catch clockwise. Once the catch grabs the threads of the button, it can be released. A takedown tool can then be used to press the button further into the lower; allowing the catch to be installed in the proper position when the shaft of the catch is flush with the face of the button. The magazine catch can be tested by inserting an empty magazine into the magazine well and ensuring that the catch locks into

the magazine and allows it to drop free when the magazine release button is pressed.

Image source: Pixabay.com

Probably the most problematic part of the build is installing the bolt catch. There are two holes separated by one-fourth of an inch on the receiver; the catch must fit in between these holes and then a pin is driven through to hold them in place. Traditionally this is done via a long pin which is struck by a hammer, and when done incorrectly can mar the receiver or damage the part. The safest way to install the catch is to use a padded vise grips and squeeze the pin into place.

The front take-down or pivot pin requires a brass detent and a spring and is tricky to install; however, once installed it seldom if ever needs to be removed. The detent spring is placed in the channel with the detent on top. The brass detent will center itself on the detent spring and can be pushed into place. The front pivot pin can then be pushed through the takedown holes in the receiver to lock it in place. The detent will be under a great deal of spring tension and it is possible for the part to slip and send both detent and spring airborne. For this reason, some builders install this part with their hands, the detent, spring and lower receiver inside a large clear plastic bag. If the parts go flying, they can be recovered. It is advisable to apply a small amount of CLP or Break Free to this area to ease installation. Once in place, the pivot pin should be worked back and forth a few times to ensure the detent has seated properly.

How to Build an AR-15: Detents Made Easy

A frustrating part of an AR-15 build has always been the various detents and detent springs. Initial installation is not too bad, but whenever the end-user wants to change a stock or a pistol grip there is always the possibility of either deforming the spring or losing one of the detents. One method to prevent this is threading the detent channels, cutting the springs and sealing the spring and detent with a set-screw. These two areas are for the rear take-down pin near the butt stock and the safety detent near the pistol grip.

These two areas should be cleaned first by blowing compressed air into them from either an air compressor or a can of compressed air found at an office supply store. The builder can then work a 4-44 tap into the channel, threading it into the aluminum and backing it off several times until the pitch of the threads has been set. The detents are then inserted and the springs cut down by at least one-eighth of an inch. Lastly, these channels can be capped with a 1/8-inch set screw. When installed in this manner, the builder no longer needs to worry about losing or deforming these small parts when changing out grips or stocks later.

For the rear takedown detent, the rear takedown pin is installed first. The detent is then dropped through the channel with the spring behind it. If the builder has opted to tap the channel and trim the spring, it can now be capped off with the set screw. If not, this step will be saved for later.

How to Build an AR-15: Fire Control Group

The fire control group may be the second easiest stage in assembly. The disconnector spring is placed on the trigger. The squared portion of the trigger spring is then placed on the sear and in front of the trigger. As a single unit it is installed into the lower receiver and held in place by the trigger pin. This allows for installation of the hammer, and the hammer spring's legs are set against the top of the trigger pin. The hammer can then be moved forward to line up with the hole for the hammer pin, which can now be tapped into place. Some aftermarket match grade trigger systems contain all of these parts in a single unit which is simply dropped in and retained by the appropriate pins.

Your safety selector presses in from the left-hand side of the receiver and requires installation of the safety detent and spring, with the detent engaging the safety. If the builder has opted to tap the channel and trim the spring, the spring can now be installed on top of the detent and can now be capped off with the set screw. If not, the pistol grip must be installed.

The pistol grip fits into place and is secured by a single screw into the receiver. If the detent channel is threaded with detent and spring installed and capped off, this is a simple affair. If not, then the detent is seated against the selector and the spring rides in a channel on the pistol grip itself. The builder must take care not to crush or deform this spring while installing the pistol grip.

If your lower does not have an integrated trigger guard, then you need to install one. The trigger guard attaches by a contained detent that fits into a recess on the front of the guard; the rear is then moved into position and held in place by a roll pin.

The last part of the build is the installation of the butt stock. If the rear take-down detent has been installed and capped off, this step will be easier. The buffer tube is then threaded into the rear of the receiver. Prior to engaging the threads over the buffer detent, the builder needs to insert the buffer detent spring and buffer detent. The buffer tube is now threaded to slightly engage the threads just prior to the halfway point over the detent. The butt stock slides over the buffer tube and is installed via a screw in the rear of the buffer tube. Finally, the buffer detent is depressed and the buffer and action spring are installed inside the buffer tube.

In the case of a collapsible stock, assembly differs in that an end plate and castle nut are installed with the buffer tube. The plate engages the rear of the receiver and the castle nut holds it in place.

If the rear detent spring has not been capped off with its channel threaded, the builder needs to install this part prior to the buffer tube. Great care must be taken to not crush or deform the spring in this process.

What AR-15 building tips would you add? Share your advice in the section below:

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ChasF
August 22, 2016 at 7:56 am

Be careful if you decide to thread the safety detent hole. The spring actually extends down into the pistol grip quite a way (relatively at least), so trimming off 1/8" would leave the spring way too long to fit behind a set screw fit flus with the receiver surface. This is not a hard spring to install, and when removing the pistol grip is not prone to fling itself into low earth orbit. Thus I would recommend against threading this hole or indeed mucking about with things related to the safety mechanism unless you are a qualified gunsmith or armorer.

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