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THE CONDO LOWER

Finishing an 80 Percent Arms AR-15 Lower in Your Apartment

By Dave Merrill

There was a time that finishing a so-called 80-percent lower receiver required a milling machine and the requisite machining skills to operate it. These early 80-percent lowers were advertised as "paper weights" and definitely worked better as bookends than anything resembling an actual, functioning AR-15 receiver.

While what comprises an "80-percent" receiver is subject to interpretation, and therefore legally ambiguous; the current crop of what the BATFE considers 80 percent is much different than in those early years.

Advances in materials science made polymer AR-15 lowers more problematic to the BATFE, and official determination letters regularly contradicted one another. A lower with polymer in different colors to denote what needed to be removed became an issue, and some stores selling these receivers were raided.

And while there are several manufacturers of all-the-same-color polymer 80-percent lowers currently on the market, nothing beats a genuine 7075 aluminum type III hard-anodized lower within that weight class. Well, titanium exists, but not only are they unavailable, you'll pay for it in terms of materials and tooling for exceedingly little benefit.

The current crop of 80-percent lowers that the BATFE finds acceptable incorporate some significant machining — the magazine well is cut, as are takedown pin holes, the bolt catch slot, pistol grip, takedown detent holes, and critically, threading for standard receiver extensions. The machining that needs to be performed typically consists of the trigger pocket and the selector and fire control group (FCG) holes.

There are many incomplete lowers and jigs on the market, but the 80 Percent Arms kits are definitely in the upper echelon in terms of quality and ease of use.

80 Percent Arms sells lowers, tooling, jigs, and the actual tools to complete your lower. And not only do they not require a milling machine and an engineering degree, you can get everything shipped to your door to finish a receiver in your apartment living room if you so desire. (While I wouldn't say building guns in the living room led to my divorce, building guns in my living room certainly didn't help my cause.) Actually, you do need one tool they don't sell: that cordless drill that's stashed under your sink right now waiting for you to hang pictures again. Also, a vise, readily available on Amazon or at your local store. No need for anything crazy here, just something decent.

And while 80 Percent Arms sells incomplete receivers, their jig arrangement will fit most of what you'll find on the market; while we're sure they'd prefer that you buy their lowers, you still have ample options.

To be clear, up until our current (and previous) panics, you could easily buy a complete lower for less money than this combo — but that isn't the point. There's something incredibly special about making a completely legal rifle with zero markings on it, sans the fire selector (be sure to check your local laws, as this isn't the case everywhere). You're doing something totally legal — that you've been told is a bad thing — and have a fun weekend project to boot!

Moreover, this definitely isn't a huge project. You're not building a barn here; our first lower took about 70 minutes

80 PERCENT ARMS
ALL-YOU-NEED KIT (JIG, ROUTER, BITS, AND LOWER)

MSRP:
$460

URL:
80PERCENTARMS.COM

First-time assembly will look daunting—just take your time.

80 Percent Arms put a lot of work into clear labeling and markings.

after setup and our next was completed within the hour.

80 Percent Arms sells not only AR-15 80-percent lowers, but also 7.62 and 9mm lowers that all work with the same jig and tools.

To complete your first lower, our suggestion is to first watch the videos on their webpage or YouTube and then to follow-on with the included written directions as you do the work. There are three sets of router spacers and a quick reference guide built-in the jig itself that make for an easy day.

We have some lessons learned we'd like to particularly emphasize for those going through this process for the first time. In no particular order:

TAKE YOUR TIME

When in doubt, stop! Included with the jig is a guide to physically attach to your router; it doesn't matter if you're using the 80 Percent Arms Freedom Router or one from Harbor Freight. Ensure all tools are setup correctly prior to cutting a damned thing. An ounce of prevention is worth a pound of cure here.

USE A TON OF CUTTING OIL

Cutting oil is cheap (we got a quart for about $6 locally). Don't use motor oil, which is intended to ensure parts don't touch each other — you want the opposite. A bottle of cheap vegetable oil would actually be better than motor oil, but we don't recommend it. Buy some cutting oil and apply a liberal amount before every cutting or drilling operation.

CHIP BRUSH

Have either a Dollar Tree paintbrush, air compressor, or both on-hand to clear out aluminum chips as you work. Not only do you want them out of the way, you don't want chips clogging your movement track for each step.

SLOW AND DELIBERATE

Remember, we're making a functional firearm, not an actual paperweight. The slower you go, the smoother your cuts will be. Though the included milling bit is capable of cutting more metal than the guide shows, it'll severely reduce the lifespan of your bits. Better to take slightly more time than to ruin your hardware. It's particularly important to go slow when the cutting bit hits corners.

UNPLUG TOOLS DURING TRANSITIONS

This is one of those tips that's easily ignored but is pivotally important: If

The only thing not included is the vise.

Left and below: Cutting oil and loose chips will quickly make for sludge; a chip brush is required, and an air compressor a bonus.

Be sure to fully clean out the entire trigger pocket before moving to your next pass.

you're swapping guides, unplug the router first. If you're checking screws for tightness, unplug the router first. If you're admiring your handiwork, unplug the router first. Respecting the raw power and cutting ability of your tools is never wasted. Be deliberate.

MORE LIGHT, MORE BETTER

There's probably no such thing as too much light in a work area. A dank, dark, dirty basement isn't the place to check your work. If you think there's already too much light, you're probably about halfway there.

WAIT FOR THE ROUTER TO STOP ROTATING

Want some weird ugly? Get ahead of yourself. Even while the router is rotating down, it'll still cut. Check out this ugly we got from our impatience:

Take your time. Don't rush. It'll be fine.

CHECK SCREW TIGHTNESS

Regularly check if your hardware fasteners are tight before proceeding to the next step. Though technically you could do this before every step, we found it beneficial to check when replacing router guides or if something gets weird.

FOLLOW EACH PASS

Following just the perimeter of each guide will result in an un-milled section right in the middle of the trigger pocket. Chase each pass with the router with a slow, clockwise pass to ensure all metal that was supposed to be cut is cut.

SHIELD WORK AREA

There will be aluminum bits absolutely everywhere. This is a given, but you don't want residual parts and pieces to fly everywhere — a couple of strategic gutted garbage bags will help quell the chips, and your possible divorce.

Check out the gouge we got on the back of the trigger pocket for not being patient.