

Introducing the AR15 Bolt Kit

Many of you are surely familiar with this type of tool. It goes by many names: bolt ejector tool, bolt vise, ejector removal tool, bolt jig, and bolt press to name a few. They run anywhere from about \$25 to an excess of \$65. Some of them are pretty crude when it comes to fit and finish. Although there are similar tools like this on the market, there are none that match what I call the AR15 Bolt Kit; at least none of which I'm aware.

Why Make this Tool

I'm a sucker for tools, and if I can make a tool using my tools, even better. This is a simple project that provides an opportunity to practice or maintain one's machining skills. Unlike other similar tools on the market, this tool features a couple of unique accoutrements which are handily stored within the aluminum base. The AR15 Bolt Kit has a built-in, appropriately sized pin punch for assist in removal of the firing pin retaining pin removal and the ejector retaining pin. Plus, it comes with an ejector spring removal pin. Having a unique, useful tool, and knowing you thriftily made it yourself, gives you a feeling of pride. In summary, the AR15 Bolt kit consists of a base block, a screw, an ejector spring pin, and a pin punch. In the end, you have a portable and durable, all-in-one field kit (see figures 1 and 2).

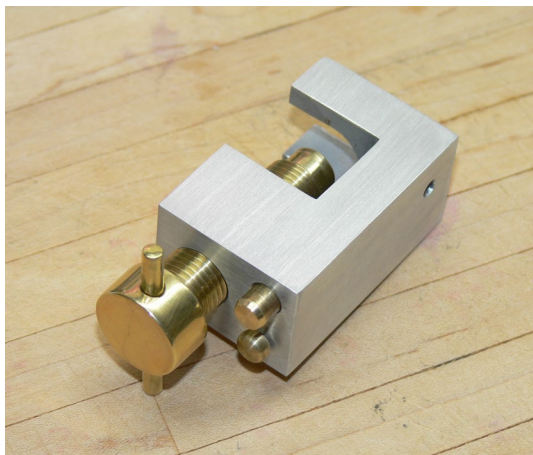


Figure 1

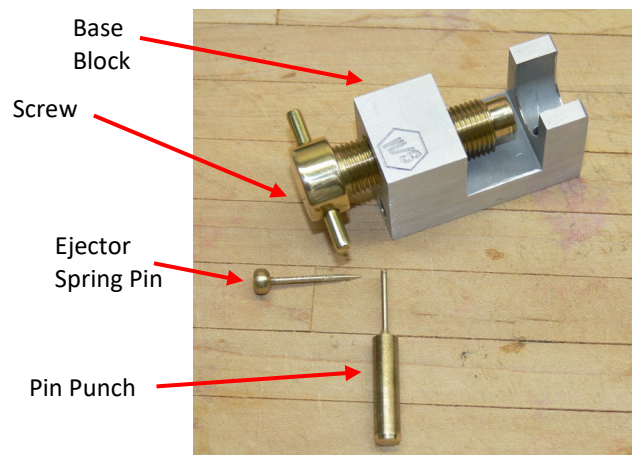


Figure 2

How It's Made

This tool is machined from a combination of aluminum and brass. The different colors of the brass and aluminum complement each other well and make an otherwise simple tool an elegant piece of art. There are no plastic parts which can be prone to breakage or short life due to wear. The base block is machined from aluminum. Aluminum is readily available and easy to machine. In addition, it's lightweight, but sufficiently strong for this application. The screw, pin punch, and ejector spring pin are machined from brass. The strength of brass is greater than aluminum providing the additional, necessary strength and resistance to wear appropriate for the respective applications. Brass too is readily available. The entire tool feels good in your hands thanks in part, to the characteristic density of the metals versus that of plastic. The cost is dependent upon the cost of materials in your geographic area. My AR15 Bolt Kit was

machined and constructed using scrap material (if there is such a thing), so the material cost was truly minimal.

Most of the dimensions of the AR15 Bolt Kit can be adjusted to your liking. The nose of the screw should fit close to the inside diameter of the bolt face. I used a 1/2 inch x 20 thread for the screw. The overall length of the screw is 2 1/8". The diameter of the pin punch should closely match the diameter of the ejector retaining pin (.062"). The diameter of the ejector spring pin (.062") should be larger than the inside diameter of the ejector spring with a long taper that comes to a point. The overall dimensions of the base block are approximately 2"L x 1 1/4"H x 1"W.

How it's Used

After removing the bolt carrier group from the upper receiver, remove the firing pin retaining pin with the aid of the brass pin punch from the AR15 Bolt Kit (see figure 3). Then remove the firing pin. Next, remove the cam pin, which will allow the removal of the bolt assembly (see figure 4).



Figure 3



Figure 4

To disassemble the bolt assembly, first remove the extractor pin using the pin punch from the AR15 Bolt Kit. I find it easier to remove the extractor pin if I apply pressure to the top of the extractor while simultaneously pushing out the extractor pin (see figure 5). Once the extractor pin is removed, the extractor is free and can be set aside.

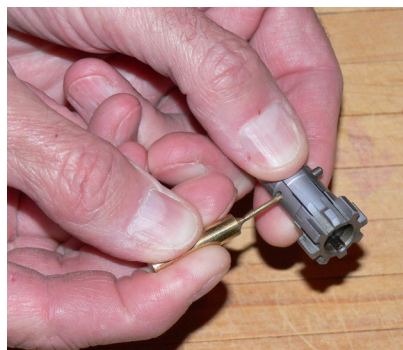


Figure 5

Next, we remove the ejector by removing the ejector retaining pin. To do this, set the bolt assembly in the base block of the AR15 Bolt Kit with the ejector retaining pin positioned above the hole in the base block (see figure 5). The hole provides a place for the ejector retaining pin to go when tapped out of the bolt assembly. Once positioned, apply pressure to the ejector proper by turning the AR15 Bolt Kit screw inward until light resistance is felt. The AR15 Bolt Kit screw takes the spring pressure off the ejector retaining pin and prevents the ejector from flying across the room. Once positioned properly, use the pin punch from the AR15 Bolt kit and a light hammer to gently tap out the ejector retaining pin (see figure 6).



Figure 5



Figure 6

Once the retaining pin is removed, gently unwind/reverse the AR15 Bolt Kit screw and then remove the ejector. Finally, remove the ejector spring. The ejector spring will often come out of its hole with a gentle tap. On those occasions when the spring is stuck, perhaps due to breakage, carbon buildup, we can use the ejector spring removal pin from the AR15 bolt kit. Insert the pin into the hole so that the pin enters and presses on the inner diameter of the spring. Give a gentle twist, and the spring should come out, stuck on the end of the ejector spring removal pin (see Figure 7).



Figure 7

The AR15 Bolt kit aids in re-assembly as well by following the aforementioned steps in reverse order. And that's my version this tool that makes bolt disassembly and assembly a breeze.