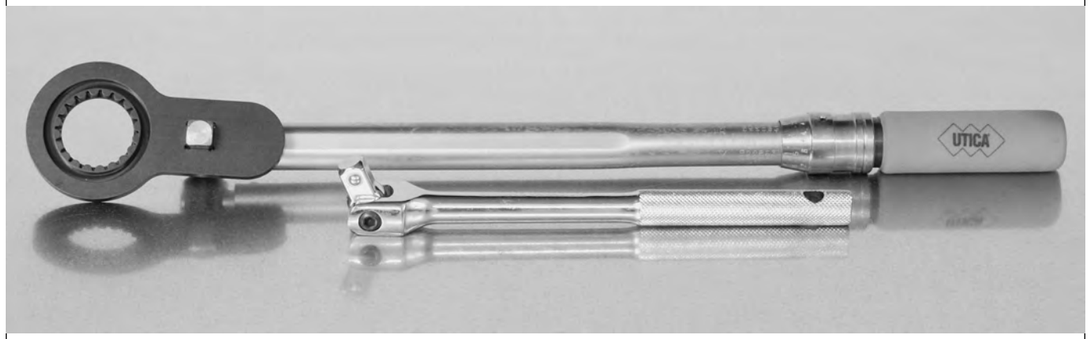
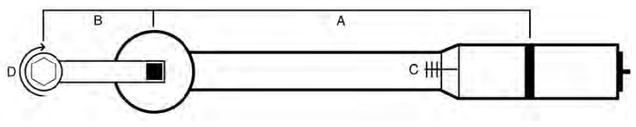
TORQUE TECH

As you can see, I like big torque wrenches. They're just easier to work, and, mostly, make it easier to make little shifts in rotation to align the barrel nut. Also shown is a companion breaker bar. This tool is used only for loosening the barrel nut during assembly. Some maintain that torque wrenches should be strictly one-directional tools — they should only tighten — so I replace the barrel nut wrench onto it during assembly as needed. They both have 1/2-inch drives.





Now, just as a matter of noteworthy fact, when the wrench end extends beyond the drive center on a torque wrench, it increases the leverage of the wrench and therefore affects the net amount of torque applied to the fastener. There's an equation that should be used to determine this increase, and it can be significant. Here's how it works...

A = length from center of handle to center of drive

B = length from center of drive to center of extension

C = wrench setting

D = desired torque applied to fastener

Here's the formula $C = \frac{A}{D\ (A+B)}$

Here's the answer for this combination $39.96 = \frac{15}{35\ (15+2.125)}$

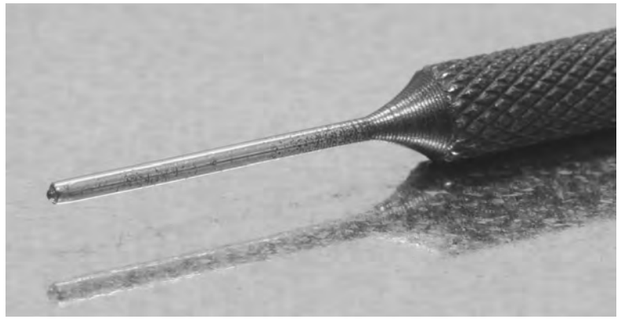
That's a fairly significant amount, call it 5 foot-pounds, and mostly it's clear that setting the wrench to 35 foot-pounds would mean it would click over short of what most agree on as the minimum torque setting for an AR15 barrel nut. So now you know...

PINS & PUNCHES

AR15s are pretty much pinned together. There are not a lot of screws and glue.

Assemblies ranging from the gas tube to magazine catch, bolt stop, bolt components, detents, sight parts, and more are secured using roll pins. A roll pin is a hollow pin with a split. It's oversized to the hole it fits into by about the gap width of the split. It squeezes as it enters the hole and this tension keeps it in place.

They are beveled on their ends but that's often not nearly enough to get one started gracefully, and that is the trick — gracefully or not, getting one started. Of course there is a specialty tool that helps, and that is a roll pin punch. Get some.



Hammers. *I use a 3/4-inch brass-headed tap-hammer for punching punches. There are times when a bigger hammer is called for, such as removing, or installing, taper pins, but a slip-hit from a light brass hammer doesn't cause near the chagrin as unintentionally whacking something with a steel hammer. The steel hammer shown is plenty big enough for AR15 work. It's a 12-ounce ballpeen.*

Pin Punches. *You really need a set of these. Really need a set of these. They are roll pin punches, one to start and one to finish. The starter punch has as its sole function and favor getting the oversized pins started into the hole. It's sized to fit the outside of a pin. After it's in and fully on its way, then switch punches to the one with the little nib on its end and send it home. The nib fits into the hollow in a roll-pin and helps "grip" the pin so it can be seated to flush, plus without unnecessary maring. Seating roll pins is a difficult and scratch and ding producing job without these punch pairs. Tip: drive the pin as far as you can using the starter punch, without contacting the part itself with the punch end.*

Consider your sources. I just have to comment on this because it's stupid. I've seen many places on the internet where folks are showing all about how to install pieces-parts on AR15s and they suggest a pair of pliers with its jaws coated over with tape. The idea is to press the pin in place. That will bend the pin and no matter how much tape is used mar the opposite point on the rifle part. Just don't do that. Pin punches aren't expensive. Rifle parts can be.