

Assembling the Bolt Carrier Group Before Checking the Headspace

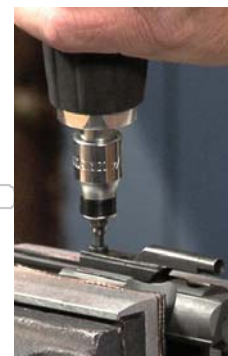
Quite often the bolt carrier and bolt will be purchased as one, complete, drop-in assembly. Or you may purchase a preassembled bolt carrier and key and a preassembled bolt separately. Purchasing these assembled subassemblies will save time and eliminate the need for some specialized tools.

In this segment we'll take you through the process of assembling the bolt carrier group without the ejector, so that it's ready to check your barrel for proper headspace. Some of the steps may not apply to your assembly, but when you take apart the carrier and bolt for cleaning or repair, this segment will be helpful. At this point your barrel, gas tube and front sight base need to be installed on the upper receiver.

To assemble the bolt carrier group you'll need: the correct hex bit for your carrier key screws, an inch pound torque wrench, padded vise jaws, 5/32 center punch, number 1 roll pin holder and punch, and a ball peen hammer. You should already have a gun mat on your bench to help keep small parts from rolling around.

1. Place the carrier in the padded vise jaws, and place the key on top of the carrier, insert the socket head cap screws, and torque them to 35 to 40 inch pounds.

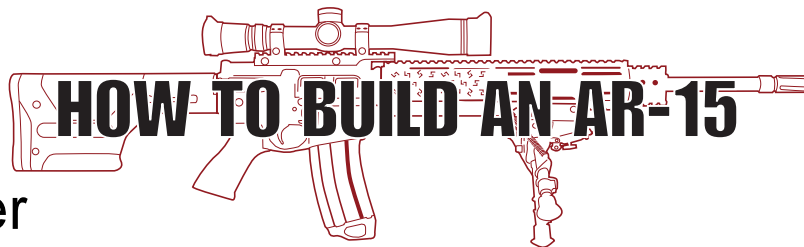
2. Because of the forces that act upon the bolt carrier, you will need to stake these two screws in place to prevent them from coming loose. Use a 5/32" tapered punch and place it on the top of the key next to the rear screw. Strike the punch with hard blows to create a dimple on one side that causes the displaced metal to push against the screw head. Then hammer two more dimples, evenly spaced around screw head. Repeat this for the front screw. When you're finished you should have 3 dimples at each screw that looks like this.



3. Install the bolt gas rings on the bolt by pushing one ring at a time into the gas ring cut. If you get one end in the cut and push the rest of the ring in by pushing around the back of the bolt, the rings will slip in with little effort. Don't try to open up the rings to install them, they'll break or deform. Once all three rings are installed, rotate them so that the cuts are offset from each other.



4. At this point we normally would install the ejector. We will skip the installation of the ejector for now because we are going to check headspace in the next segment. After the headspace is checked we will install the ejector.



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5. The extractor spring assembly is usually pre-installed in the extractor. If it isn't, then you'll need to install the small plastic buffer into the extractor spring from the large end. With a set of needle nose pliers, gently push and twist the spring in clockwise to lock it into the recess in the extractor.



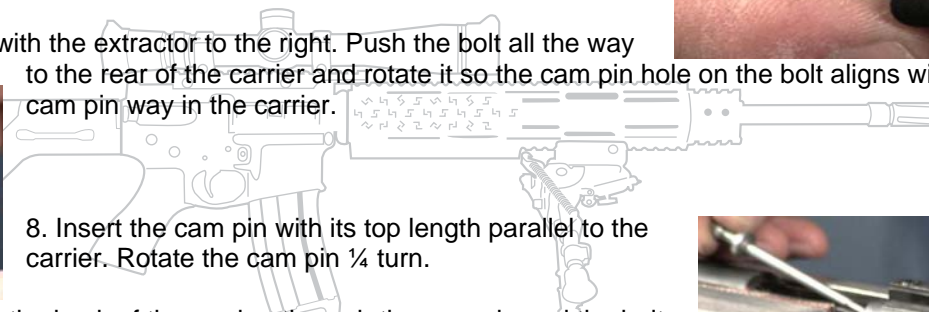
6. Place the assembled extractor into the side of the bolt and push it down with your thumb while you insert the extractor pin. The pin should sit below the surface of the bolt on both sides.



7. Insert the bolt into the carrier with the extractor to the right. Push the bolt all the way to the rear of the carrier and rotate it so the cam pin hole on the bolt aligns with the back of the cam pin way in the carrier.



8. Insert the cam pin with its top length parallel to the carrier. Rotate the cam pin ¼ turn.



9. Insert the firing pin through the back of the carrier, through the cam pin and the bolt. The firing pin retains the cam pin.



10. Install the firing pin retainer pin from the left hand side of the carrier so it sits flush with the side of the carrier.

11. Test the bolt travel by moving it back and forth in the carrier, it should twist and move with a little bit of resistance caused by the gas rings.

12. With the bolt pushed back to the rear of the carrier the firing pin should move easily also.

With the ejector removed but all the other parts of the carrier group installed, we'll check the headspace of the rifle.