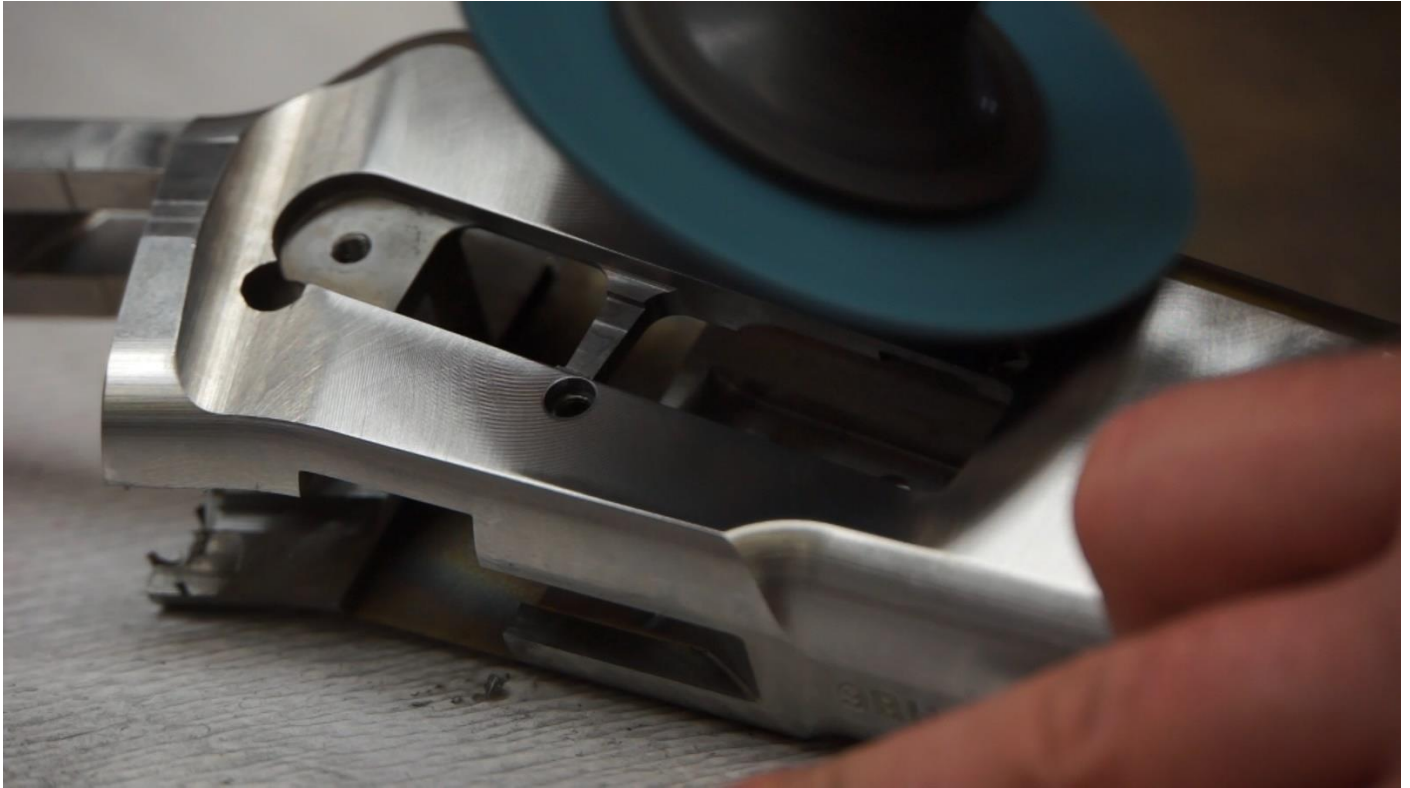


Hand Fitting a Lever Gun

The process of hand fitting and building a lever gun is an exacting procedure. It consists of a series of steps conducted by a trained technician to create the ultimate lever gun, the Big Horn Armory Model 89.



First, you start with polishing all the visible exterior parts. This is done to remove all machine tool marks. Then these parts are glass bead blasted in preparation for [salt bath nitriding \(SBN\)](#). Barrels are ramped and chambers are polished to smooth, reliable cartridge feeding and extraction.

Some interior wear parts, like the carrier, plungers, and sear, are also prepped for SBN. This is done because the SBN surface is very hard and enhances the durability of these parts.

Once all parts have returned from the SBN process, the receiver, barrel, bolt, and locking bolts are mated and checked for headspace for a perfect fit. Headspace is accomplished by milling the breach face of the bolt to achieve SAAMI specifications in headspacing. This is all checked by gauges after preliminary assembly.

All of the subassemblies (SA) are then assembled. These include the Carrier SA, Left Cartridge Guide SA, Bolt SA, Hammer SA, Lower Tang SA, Lever SA, and Loading Gate SA. All of the SA's are tested for function and smoothness.

The Lower Tang Sub Assembly requires special attention. The Trigger and Sear are mated and stoned to effect our standard 4.5-5.5 pound pull. Our trigger pull is very crisp and without creep.



All of the parts are then gathered and assembly begins by mating the Magazine parts to the barreled Receiver. The Magazine Tube interior is polished and cleaned for smooth operation. It is also ground to fit since stacking tolerances between parts require fitting the oversize Magazine Tube.

Then the action parts are precisely fitted and installed. The Carrier height in its up position is adjusted by mating and fitting to the corresponding surface of the Right Cartridge Guide. This is done to achieve correct feeding for our standard cartridge, which is modeled on Buffalo Bore's 440gr HCLFN factory load.

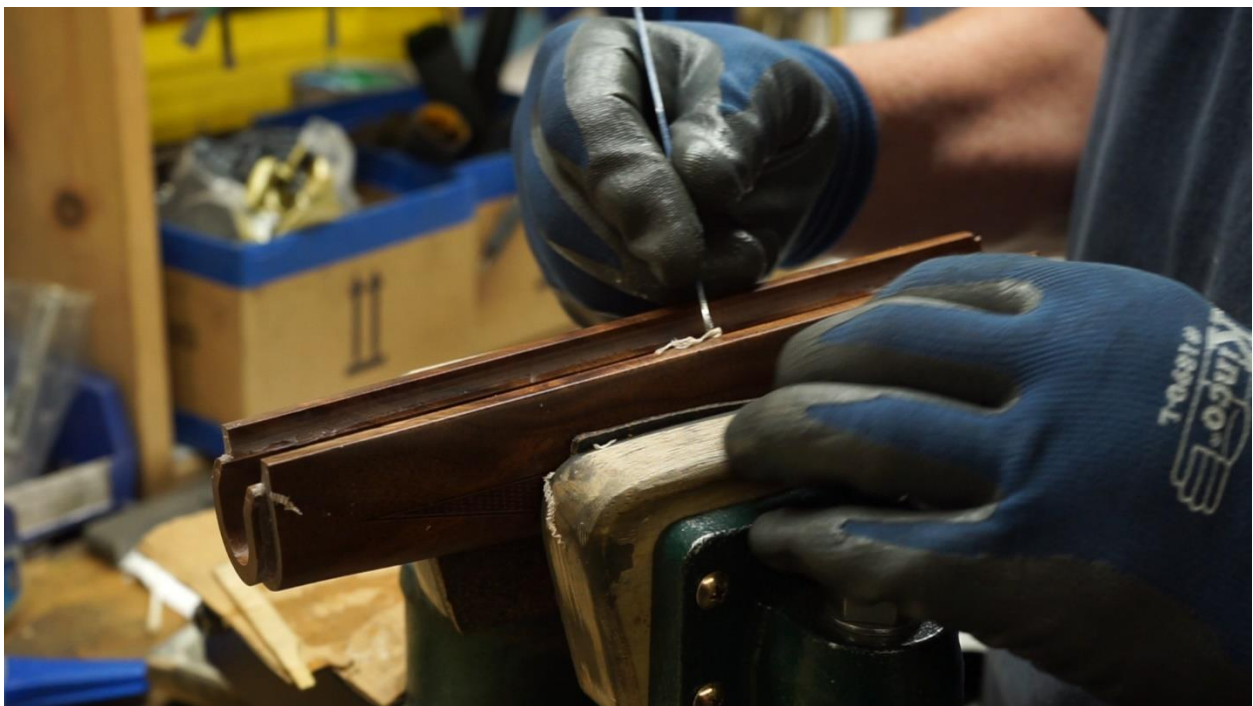
We then cycle the action hundreds of times with a lot of lubricant to effectively remove any remaining metal burrs and smooth out the function of the action. The action is then cleaned of excess lubricant and any metal bits that may be present.

The action is cycle-tested with five different dummy rounds to ensure smooth and reliable feeding for most factory ammunition. Unfortunately, Browning style lever guns are sensitive to Real Cartridge Length and all factory loads will not feed well. See our previous [blog article](#) on Real Cartridge Length vs. Overall Cartridge Length.

Once all of the above is complete, the gun is proof tested using an 86,000 psi proof load to ensure that there are no metal failures within the assembly.



From there, the stocks are hand inletted and fitted to allow for glass bedding. All parts are coated with a release fluid and the epoxy glass bedding compound is applied as required. The whole assembly is then clamped together and left to cure overnight. Glass bedding enhances the durability of the wood-to-metal fit of our guns by creating a hard, smooth surface to interface with the metal. The epoxy will not allow the wood to compress in our high recoil firearms.



One special note on wood-to-metal fit. We use kiln-dried wood blanks for our stocks. We purposely size our wood to be approximately .005” higher than the metal. Some customers have said that this looks unfitted. We do this to allow for the eventual shrinkage that happens as the wood continues to dry as it ages. In time, the wood will mate much better to the metal. The alternative, in time, would leave the metal much higher than the wood and cause cut hands during recoil.

Once the epoxy is cured, we test fire several rounds through the gun to make sure all is well. It is then disassembled, cleaned, and finally assembled, ready to ship to our customer. All of this process adds cost to our guns, but the Big Horn Model 89 is truly the finest lever action available. Our customers definitely think it is worth it.

