



## Inside the Model 89: A Modern Interpretation of a Classic Platform

*How Big Horn Armory took 150 years of lever-gun heritage, threw out what didn't work, and engineered something the old masters never could.*

There are rifles built to look the part. And then there are rifles built to do the job. No compromises, no apologies. The [Big Horn Armory Model 89](#) belongs firmly in the second category. Born in Cody, Wyoming, out of a problem that stumped the industry, and refined over years of rigorous engineering, the Model 89 is not a nostalgic reimagining of a classic American platform. It is the platform; evolved, modernized, and chambered for cartridges the original designers never dreamed of.

To understand what makes the Model 89 exceptional, you have to understand what came before it, and why everything that came before it wasn't enough.

### **The Problem That Started It All**

In 2007, Big Horn Armory founder Greg Buchel and his neighbor Frank Ehrenford had a conversation that would eventually reshape the lever-action category. The .500 S&W Magnum, Smith & Wesson's answer to the question of the world's most powerful production handgun cartridge, was generating serious buzz. It was a brilliant round: massive, versatile, and devastatingly effective. But it was being wasted in a revolver. The recoil was punishing. Most shooters couldn't handle it. The cartridge begged for a long gun.

So, they set out to build one.

The lever gun was the natural choice. Tube magazines and rimmed cartridges

are a natural pairing — the rim that causes headaches in a box magazine is an asset in a tube — and the lever-action platform offered the speed and reliability big-bore hunting demands. The concept was sound. Executing it, however, proved far more difficult than anyone anticipated.

Every existing lever-action the BHA team tested bent, cracked, or failed under the .500 S&W's 60,000-psi chamber pressure. Marlins. Henrys. Every commercially available option. The metallurgy simply wasn't there. The contact area between bolt and locking bolt on existing designs was too small to survive the forces involved. The BHA team had a choice: abandon the idea, or build a new action from scratch.

They chose to build.



*Note the fancy forend tip on this photo of testing the Marlin action.*

## **Standing on the Shoulders of Giants**

Big Horn Armory's team didn't start from a blank page. They started from history. Down the road from the BHA shop sits the Cody Firearms Museum at the Buffalo Bill Center of the West, one of the most significant collections of American firearms in the world. The BHA engineers spent time there, studying original lever guns from the Volcanic era through to John Browning's late masterworks, cataloguing what worked, what failed, and why.

Two designs emerged as the strongest candidates: the Winchester Model 1886 and the Winchester Model 1892. Both were Browning designs. Both used a vertical locking bolt system, one of the most mechanically sound bolt-locking arrangements ever devised for a lever gun. But neither was right on its own.

The Model 1886 was engineered for long black powder rifle cartridges. Its action was too large for the .500 S&W. The Model 1892, a masterpiece of compact efficiency, was too small. And both were produced on a limited, sporadic basis by Miroku of Japan for the Winchester brand. For a company in Cody, Wyoming, building what they believed should be a quintessentially American rifle, that was a non-starter.



*Closeup of the original M89 receiver with a removable bottom.*

The answer was synthesis. BHA designed a receiver sized precisely halfway between the 1886 and the 1892; long enough to feed the .500 S&W reliably, compact enough to handle like a proper lever gun. The name Model 89 reflects exactly that heritage: the midpoint between 86 and 92. The exterior profile draws from the 1886's strong, purposeful lines. The internal geometry borrows the elegant simplicity of the 1892's working parts. And then BHA upgraded everything.



*The internal parts of the original Model 89. Note the bottom cover next to the lever.*

### **Engineering That Doesn't Apologize**

Where Winchester was working with the steel and machining tolerances of the late 19th century, Big Horn Armory had access to something far more capable: 17-4PH stainless steel, precision CNC machining, and modern metallurgical science.

17-4PH stainless, a precipitation hardened alloy used in aerospace, medical, and demanding industrial applications, is more than three times stronger than the steel Winchester used in the original 1886, and roughly twice as strong as the steel used in modern Japanese-produced reproductions. Every critical component in the Model 89 action is machined from this material and properly hardened. The result is an action that is not merely strong enough for the

.500 S&W Magnum. It is dramatically overbuilt for it.

To validate that claim, BHA ran a proof load test that would be extreme by any standard: 24 rounds of ammunition loaded to 86,000 psi — nearly 43 percent above the already-substantial .500 S&W maximum — were fired through a single rifle. Before and after the test, headspace was measured. The reading was identical. No component showed any sign of deformation. The engineers eventually gave up trying to destroy it.

That prototype now resides in the Cody Firearms Museum's permanent collection. The rifles BHA builds today are direct descendants of that gun.

### **How the Model 89 Actually Works**

The Model 89's internal geometry was not assumed; it was discovered. In the development phase, BHA constructed an adjustable plate receiver that allowed engineers to physically move pivot points, carrier release positions, magazine tube locations, and cartridge guide geometry until feeding was smooth, reliable, and consistent across a wide range of ammunition profiles.

One early discovery aligned with what old lever-gun experts had always known:

lever guns are sensitive to cartridge length and bullet ogive. Different manufacturer loads fed differently. The BHA team tested numerous settings and landed on geometry tuned for large-meplat hard-cast lead bullets, the same profile Winchester optimized for in their day, and found that this setting produced the broadest compatibility across ammunition types.

The result is an action that feeds smoothly, cycles quickly, and returns to battery with the authority that a hunting rifle demands. The large, curved lever is designed specifically for gloved hands, a detail that sounds minor until you're on a cold-weather bear hunt and your dexterity is compromised. The aperture rear sight and post front sight provide a fast, precise sight picture. The one-inch recoil pad manages the .500 S&W's substantial push without punishing the shooter. Every element is considered.



## **The Custom Series: Built Your Way**

What makes the Model 89 particularly compelling today is not just what it is, but what it can become. The [Model 89 Custom Series](#) puts a meaningful range of configuration decisions in the hands of the buyer, with each rifle hand-built to order by Big Horn Armory's gunsmiths.

Caliber selection begins with the flagship .500 S&W Magnum, with options for .460 S&W, .454 Casull, .45 Colt, .500 Linebaugh and .475 Linebaugh for shooters whose needs run to those chamberings. Barrel length ranges from the fast-handling 16-inch Trapper configuration through the standard 18-inch to a 22-inch option for shooters prioritizing downrange performance.

Barrel profile choices include the standard round contour and the octagonal barrel, a nod to the traditional American sporting rifle that is both aesthetically striking and eminently functional.

Wood selection spans standard American black walnut, Fancy Walnut for a higher cosmetic grade, Maple for a distinctive blonde appearance that deepens with age, and weather-resistant laminates in black or grey. Metal finishes run from the clean, high-contrast Hunter Black through Matte Stainless Steel, to the spectacular Color Case Hardened finish,

which produces the random blues, greens, yellows, and reds of the classic case-hardening process, and the Antiqued Stainless, which achieves a deliberately weathered character through a specialized technique.

Optics options include the standard Skinner aperture sights, a fiber optic front sight, a Scout Scope Mount for traditional forward-mounted glass, and a red dot mount compatible with the Leupold Delta Point, Sig Romeo1, and Trijicon RMR. For those who want to carry their rifle as well as shoot it, BHA-branded accessories, including the Alaskan sling, cheekpiece, leather butt cuff, and ballistic cloth scabbard, complete the package.

Custom Grade options, including Collector Grade and Exhibition Grade walnut, and barrel threading are available through direct consultation with a BHA sales representative. Lead times for custom builds are a minimum of twelve weeks, because a rifle built to this standard takes time to build correctly.

## **A Lever-Gun for Serious Work**

The Model 89 is not a range curiosity. It is a working rifle for serious hunters; hunters who pursue elk, moose, black bear, brown bear, and bison in terrain

that demands a rifle that handles quickly, hits hard, and holds up to genuine field conditions. The .500 S&W Magnum is one of the most effective cartridges available for large and dangerous game at the ranges lever guns are designed to dominate: out to 200 yards in competent hands, with a terminal performance profile that leaves no question about the outcome.

The lever-action platform's inherent advantages — fast follow-up shots, slender profile for easy carry through dense cover, and a cycling action that keeps the shooter on the target — are all preserved and enhanced in the Model 89. What BHA added is the power and the engineering integrity to match those advantages to the largest game on the planet.

As the comparison between the Model 89 and traditional lever guns makes clear, the gap is not incremental. Conventional lever-action designs, optimized for cartridges like .30-30 Win or .45-70 Govt., are simply not built for what the .500 S&W demands. The Model 89 was. That isn't an accident. It's the entire point.

### **Made in Cody, Wyoming. Full Stop.**

Big Horn Armory operates out of Cody, Wyoming, a town with a genuine firearms heritage, home to the Cody Firearms Museum and a population that understands what a serious rifle is supposed to be. Every Model 89 is built there, by hand, by gunsmiths who hold the finished product to a standard they'd be proud to own themselves.



The Model 89 is not a commodity. It is a made-to-order, handcrafted, American-made rifle in a caliber most other manufacturers won't touch, built on an action that no other manufacturer has bothered to engineer. It is, in the truest sense, a rifle with no equivalent.

Explore full specifications, configuration options, and in-stock availability at [bighornarmory.com](http://bighornarmory.com).



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