

# Ruger Conversions

## .38-40 Winchester

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The 38-40 Winchester was introduced in 1881 and since then it's seen use in everything from Winchester '73s to Colt single and double action revolvers. Originally loaded with black powder, the 38-40 is categorized as a low-pressure round. But should it be? Understandably, SAAMI spec capped pressure at 18,000 CUP since the early guns (as well as modern clones) aren't strong enough to handle any more. But a lot has changed in the past century. Revolver strength has increased, brass went to solid head design, and modern powders stretched performance. Combine all this and 180 grain bullets @ 900 fps seem lethargic.

"Why magnumize the 38-40?" No matter how many times I hear the question my answer never changes: "Because we can". And we owe that answer in part to Ohio based Buckeye Outdoors. In 1988 they commissioned Ruger to produce 5,000 38-40 Win/10mm Auto convertibles on the Blackhawk frame. Fit with 6.5" barrels, engraved cylinders, blued finish, and factory wood grips, the model reintroduced us to the 38-40. More importantly the Buckeyes would safely digest hot-rodded loads. In spite of this many claimed the brass wasn't up for the job. As with the 45 Colt though, the weak brass myth is just that...a myth. Balloon head cases went away decades ago as Winchester, Remington, and Starline all produce solid head 38-40.

If there're two people that deserve credit for bettering handgun performance in the 20<sup>th</sup> century, it's Elmer Keith and Dick Casull. While Elmer advanced the 44 Special in 6-shot revolvers, Casull worked from the ground-up using the venerable 45 Colt hull. With solid head brass he was able to increase

pressure, but the limiting factor was still the gun. Colt cylinders were just too thin in the sidewall, especially around the bolt stop locations. By moving to his own 5-shot cylinder Dick safely drove pressure, and hence velocity, to then unheard of levels. Early experiments were done on Peacekeepers but eventually he built a revolver out of specially heat treated 4140 for the frame and 4150 for the cylinder. With triplex loads, tight chambers, and slow twist barrel, the “45 Magnum” was launching 260 grain bullets at over 1,600 fps.....and that was in 1957. While advertised as capable of 1,500 fps with 240s, Remington’s new 44 was no match for the big 45. Fourteen years later Ruger offered the Blackhawk in 45 Colt and by then powder selection had widened. With slow propellants the old Colt could work at 30,000 PSI in 6-shot Rugers and equal the 44 Magnum. Countless authors have said it before and I’ll say it again: we’ve had a magnum handgun cartridge since 1873; we just didn’t know how to get the most out of it.

Now why I am I rehashing the history of Dick Casull’s 454? In short, everything he did with the 45 Colt applies to the 38-40. Both were 19<sup>th</sup> century black powder cartridges that with the right gun, modern powder, and good brass could duplicate and even exceed the Johnny-come-lately magnums. And while this article won’t delve into 5-shot 38-40s, it will cover the principles of tight chambers, strong 6-shot cylinders, and operating pressures of 30,000 PSI. When you apply all three to the old middle bore you may be surprised at what you get.

While the Buckeye convertibles brought a strong 38-40 to the masses it can’t lay claim to being the first. In the 1970s and 80s Bernold A. Nelson of Janesville, Minnesota re-chambered old 401 Herter Powermags to 38-40. Nelson new these guns well, having been a former employee at Herters Supply. Later as the proprietor of Nelsdales Gunshop he offered the conversion for a very reasonable price. In addition, he was a great source of loads and 401 Powermag components to include bullets, brass, and dies. Below is some of his data from the early 1980s. All used Sierra 0.410” bullets swaged to 0.401”:

Bullet Wt.	Powder	Charge Wt.	Velocity
170	Unique	10.0	1,111
170	Unique	11.0	1,144
170	Unique	12.0	1,276
210	Blue Dot	13.0	948
210	Blue Dot	14.5	1,010

This performance is materially better than factory 38-40 but it doesn’t raise many eyebrows. In fact, they’re only 200 fps or so better than standard loads and fall way short of the 41 Magnum. Why fast propellants were tested over powders

like 2400 and 4227 is beyond me. Regardless, these experiments showed this classic round had potential.

I was first introduced to this 40-caliber back 1991. My dad had been building his own Ruger cylinders for some time and decided to convert a Blackhawk to 38-40. Undoubtedly, the Buckeye Edition provided some inspiration. I also liked the idea and felt it would be a nice cast bullet plinker. Now this is where we stumbled upon the 38-40 Magnum. Since we build all of our own reamers and reloading dies we can cut very tight chambers. In fact, our roughing reamer is matched to the finisher and is only undersized by 0.001". The result is a chamber 0.001" over the sized case. As Dick Casull illustrated in the 1950s, the tighter the chamber the easier it is to safely ramp pressure. Though our intention wasn't to throttle-up the 38-40, we quickly found how easy it was to do on the right platform.

The first 38-40 we built was on a blued New Model Blackhawk. Fit with a 6.5" piece of Douglas barrel, un-fluted cylinder, tight chambers, and 0.4005" throats it proved accurate from the start. If I remember correctly initial loads were 8.0 of Unique under 180 grain cast bullet. We then switched to 2400 and settled on 14.0 grains. To my surprise case life was outstanding. Prior to then I was under the impression 38-40 brass would quickly fail after a few reloads. You know, the whole split neck syndrome. The tight chambers were doing their job and considering how much case capacity we had to work with I went up on the 2400. In increments of 0.5 grains our loads progressed and prompted a switch to large magnum primers. Extraction was still effortless and the brass lasted reload after reload. The difference was what the 180 and 200 grain bullets did on the other end. No longer were the iron rams just falling over, they were getting slammed as if being hit by a 41 or 44 Magnum. The old 38-40 showed its teeth but by how much? Out came the chronograph and this is what we found (all loads were re-tested once Lil Gun was released):

Bullet	Bullet Wt.	Powder	Charge Wt.	Velocity
Hornady XTP	180	H110	24.5	1,580
Hornady XTP	180	2400	21.5	1,490
Hornady XTP	180	Lil Gun	23.5	1,533
Hornady XTP	200	H110	23.0	1,427
Hornady XTP	200	2400	20.0	1,366
Hornady XTP	200	Lil Gun	22.5	1,406

**NOTE** - All loads use Starline brass and CCI 350 primers as tested in my 38-40 conversions. I am not responsible for their safety in any other firearm

Look familiar? It should if you've ever shot a 41 Magnum. Is there any benefit to shooting heavy 38-40 over the 41? Of course not and in fact the 41 has the edge when it comes to bullet selection. What this does prove however is that like the 45 Colt, the 38-40 is easily modernized. I stopped at the loads noted above and didn't push the round any harder. In the back of my mind though I knew she had more in her; and the "more" would require a 5-shot cylinder.

Before I continue, I'd like to issue a word of warning. The aforementioned loads proved safe in my 38-40 conversions. Again, these guns are fit with minimum spec chambers, 0.4005" throats, and cylinders that are a few thousandths larger in diameter than factory Rugers. Unfortunately the Buckeye and limited 38-40s from Davidson's suffered from under-sized throats with most measuring between 0.394" – 0.397". If you own one of these models I recommend getting the cylinder corrected before shooting heavy 38-40. As always, max loads should be worked-up to incrementally starting with already published data (manuals such as Hornady, Speer, etc).

The trade off with tight chambers is thorough cleaning, especially on a bottleneck like the 38-40. Even the slightest amount of powder residue around the shoulder step can cause problems with case seating. It's a small price to pay however for the added margin of safety. Now one question I do get asked is whether case-setback occurs with magnum 38-40s. The old black powder loads were so mild that the brass stayed put. At 30,000 PSI, cylinder lock-up can occur but it's rare. To play it safe I usually recommend wiping the cases and chambers to remove oil before firing.

H110 and W296, should it be used? I've tried it in my six-shot 38-40 and it works as seen above. Obviously these ball powders require at or near 100% load density in that reduced charges can cause erratic detonation. Since the 38-40 is necked full cases of H110/W296 ramps the pressure curve faster than it would in a straight case. I've safely shot 24.5 grains of H110 under a 180 grain XTP. Extraction was good, there were no signs of excessive pressure, and accuracy was outstanding. The problem is 24.5 grains doesn't completely fill the shell which is optimal for these powders. A full case of H110 under a 180 grain XTP requires between 28 to 30 grains of powder depending on the brass. I'm not a ballistic lab so I don't know the exact pressure this generates. My reloading software however says *well* over 30,000 PSI which is unsafe in a six-shot Ruger. This is where a 5-shot or over-sized 6-shot cylinder would come in handy.

Bullet selection has always been a problem for the 38-40, at least in the area of cast slugs. Hornady covers the jacketed class well with their 180 and 200 grain XTPs. Bulk cast bullets though are designed for much lower speeds than are capable from heavy 38-40 revolvers. SWC and Cowboy action noses are most common and are tailored for the 40 S&W and mild 38-40 loadings; both of

which drive 180s between 800 and 1,100 fps. While the 10mm pushed 180s to 1,300 fps our magnum 38-40s are still 200 – 300 fps faster. Fortunately, most of the cast 10mm I've worked with exhibit little to no leading at 1,600 fps. What's missing though is a cast design better suited for game. Something along the lines of a hardcast 200 – 270 grain WFN, LFN, or SSK bullet. One workaround I've used is a 265 grain bullet from the 40-60 Winchester. My dad had the mould and it's worked well in another 40-cal wildcat (see below). To date I haven't tried it in a 38-40, in part due the fact I hate lead casting. Lastly, you can size 41 cast bullets to 0.401", thus making many new weights and designs available.

By 1994, I wanted to claim my own revolver wildcat. Still hooked on the middle bores I stayed with 40-caliber since the 10mm Auto and 40 S&W had taken off. Before long I was cutting and expanding 220 Swift brass to create the 401 Bobcat. It was fast and edged out my heavy 38-40 loads and factory 41 Magnum. Pressure was well over 45,000 PSI but the brass and gun held-up fine. In the late 1990's I stretched the 401 case to 1.40" and soon hit 1,650 fps with 200 grain XTPs. I still shot 38-40 a lot, but stayed on the mild side. Then Linebaugh Custom Sixguns began offering tight chambered 38-40s with oversized cylinders. Their tests proved what I thought all along; namely that the 38-40 could be pushed even harder. Whereas my 38-40 loads peaked at 1,600 fps for 180s and 1,400+ fps for 200s, the Linebaughs were getting 1,800 and 1,600 fps respectively. Now that's fast and out of a 6.5" barrel it smokes the 41 Magnum. I've never seen their loads, but suspect those speeds are achieved with heavy doses of H110/W296 or Lil Gun.

So this is where the story ends, at least for now. One of these days I'm going to build a 5-shot 38-40 Win, if for no other reason than to see what it'll do. Like the 45 Colt, we've come full circle with the 38-40. I doubt it'll be as resurgent as the 44 Special or 45 Colt but hopefully this article and the Linebaugh conversions will open an eye or two.

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