

The 375 Ruger Meets the Hornady's GMX

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Project rifles often become long term projects. Anyone who owns a firearm and handloads knows from experience that new components are frequently developed that can greatly enhance the potential of any given preexisting combination.



Sometimes, the desired combination for a hunting rifle is one that no factory makes; a very traditional Bavarian style full stock rifle, chambered for the modern 375 Ruger. Fortunately, if you are a firearm enthusiast there is always a solution and, in this case, it came in the form of a 9.3x62mm CZ550 FS **converted** to the 375 Ruger in a manner that retains the rifle's original hardware and outward appearance. The equivalent of the muscle car era's non-descript Plymouth two door sedan hiding a 600 horse power Hemi.

Unlike the more singular purpose 600 HP hemi, the 375 Ruger is a flexible cartridge with physical dimensions that adapt well to standard length actions and moderate weight and cost firearms. With bullet weights from 225 to 350 grains, handloaders can assemble ammo suitable for anything from whitetail deer to the largest and most dangerous African game and the 375 Ruger can be loaded as a flat shooting round.

I think I drove a GMX in high school...

Beyond 375 caliber bullets intended uniquely for the world's largest and toughest game, Hornady also offers a range of weights and types well suited for elk, moose and bear hunting, and for hunting exotic game in exotic places... that I mostly only get to read about these days. Hey, one man's African Oryx is another man's Pennsylvania whitetail.

Pictured, L-R, Hornady's 250 Grain GMX (Gilding Metal eXpanding) solid copper alloy bullet with a 0.430 BC and the more traditional construction lead core, jacketed InterLock® 225 grain SP-RP (Spire Point Recoil Proof) with a 0.320 BC.

The GMX is a high BC expanding solid, made of the same copper/zinc alloy used for Hornady's bullet jackets. The GMX's claim to fame is very high weight retention after impact on game, 95% with 1.5x expansion, and a very wide range of acceptable impact velocities. Additionally, the GMX lead free construction makes its use legal in California... AKA the end of the earth where bad politics meets bad science, or Willard meets Kurtz, to pass absolutely bizarre anti gun, anti hunting legislation. Fortunately, politics had no adverse effect on this bullet's performance; good design wins the day.

The second bullet, the 225 gr InterLock® SP-RP can be launched from a 375 Ruger rifle barrel at high velocities and it will still hold together for good penetration. This bullet features Hornady's secant ogive for flat trajectory, a tapered jacket for controlled expansion and an Interlock ring that keeps the bullet's lead core and gilded jacket together on impact.

Short barrel friendly handloads and some notes...

Solid material bullets like the GMX are typically longer than their lead core counterpart because of their lower sectional density. Where a lead core 0.375" 300 grain spitzer boat tail might be 1.375" in length, the 250 grain GMX is 1.545" long. When I begin working with a new bullet, standard procedure is to make sure the firearm's barrel has a sufficient twist rate to stabilize the bullet and to determine maximum safe COL with the assistance of a Hornady Lock-N-Load® OAL Gauge.

This specific GMX, based on standard Greenhill calculation, requires at least a 1:16" twist to properly stabilize. The CZ 550's replacement barrel has a 1:12" twist. Tighter twists on some of the larger bore, moderately high velocity cartridges seems to significantly improve accuracy, not unlike the **tack driving 450 Rigby** 1:10" twist project rifle.

Hornady's published load data for the GMX bullet is based on a 3.330" COL. This barrel's chamber throat, which was cut for additional freebore to permit the used of long heavy bullets, safely permits a 3.480" COL with the GMX, which works fine with the CZ Medium action's magazine. The load data that follows is predicated on this COL. Any lesser COL, that retains the indicated charges, would increase pressure to unsafe levels. If you are not familiar with this cause and effect, or how to accommodate these types of changes, I would strongly suggest sticking with the 75 Ruger load data for the 250 grain GMX published by the folks at Hornady.

One of the highlighted features of the Hornady GMX line of bullets is that they are "Compatible with conventional reloading data" which I believe means the GMX bullet does not require special consideration in regard to bore friction or effort required for plastic deformation. GMX bullets conform to rifling and produced bore friction consistent with lead core, jacketed bullets. Not a small point. Barnes monolith material Triple Shock bullets require a reduction in load in comparison to same weight conventional bullets and GS Custom HV bullets requires a boost in charge to offset low start pressures, making standard bullet data not directly transferrable.

Warning: Bullet selections are specific, and loads are not valid with substitutions of different bullets of the same weight. Variations in bullet length will alter net case capacity, pressure and velocity. Primer selection is specific and primer types are not interchangeable. These are maximum loads in my firearms and may easily be excessive in others. All loads should be reduced by 5%, and developed following safe handloading practices as represented in established reloading manuals produced by component manufacturers. Presentation of these loads does not constitute a solicitation for their use, nor a recommendation.

Cartridge: 375 Ruger	
Rifle: CZ 550 based custom	Max COL: 3.340"
Bullet Diameter: 0.375"	Primer: CCI 250
Barrel: 20.5"	Reloading Dies: Hornady
Max case length: 2.580"	3 Shot Group Distance: 100 Yards
*Some loads listed exceed COL and require checking for clearance	

Bullet	Bullet Weight Grains	Net Water Capacity H ₂ O	COL*	Powder Type	Powder Charge Grains	Muzzle Velocity FPS	Muzzle Energy Ft-Lbs
Hornady SR-RP**	225	87.0	3.250	IMR3031	40.0	1785	1592
Hornady SR-RP	225	87.0	3.250	Re17	79.0	2791	3839
Hornady SR-RP	225	87.0	3.250	Re17	84.5	2958	4373
Hornady SR-RP	225	87.0	3.250	H414	87.5	2992	4474
Hornady GMX**	250	82.4	3.480*	Re15	65.0	2388	3166
Hornady GMX	250	82.4	3.480*	Re17	79.0	2796	4341
Hornady GMX	250	82.4	3.480*	H414	78.0	2695	4033
Hornady GMX	250	82.4	3.480*	H414	82.0	2879	4602
Hornady Factory Load	270	--	--	--	--	2762	4575
** Light Loads -- Modest Recoil							

Scope selection and the Horse Head Nebula...

It always think people saying a scope has too much power is like saying a cartridge has too much power. In my insular reality, a person can never see too much, too clearly or kill too dead. Decades ago, the difference between a 4x fixed scope and a 12x+ scope was about 5 lbs and 2 extra feet of tubular metal containing fragile optics. Today, 14x is common place and about the same size and weight as a 4x scope and these high magnification optics are getting all of the engineering resources to make them nearly indestructible and impervious to the elements and climate.

The 375 Ruger is far from being a short range thumper in need of a 4x scope. It is easy to find slick bullets and to generate enough head of steam to give even this relatively short barreled rifle an easy 400 yard reach. The GMX at 400 yards is still carrying over a ton of kinetic energy and hold over at 400 yards isn't much at all. Probably of greater consequence is that this combination can be shot out to 283 yards with no hold over at all which certainly simplifies life for the average hunter.

250 Grain GMX -- Max Ordinate +3 Point Blank Range 283 Yards									
Yards	0	50	100	150	200	250	300	350	400
Velocity -- ft./sec.	2879	2770	2664	2560	2459	2360	2264	2170	2078
Energy -- ft.-lbs.	4600	4260	3939	3639	3357	3092	2845	2614	2398
Path -- in.	-1.5	1.1	2.7	3.0	1.9	-0.6	-4.6	-10.3	-17.9

225 Grain InterLock® -- Max Ordinate +3 Point Blank Range 282 Yards									
Yards	0	50	100	150	200	250	300	350	400
Velocity -- ft./sec.	2992	2843	2699	2559	2423	2292	2166	2043	1925
Energy -- ft.-lbs.	4472	4038	3638	3271	2934	2625	2343	2086	1851
Path -- in.	-1.5	1.1	2.6	3.0	2.0	-0.5	-4.7	-10.6	-18.7

The 375 H&H is known to shoot to the same, or near the same, point of impact across a range of bullet weights, a trait it shares with the 375 Ruger. The trajectory tables above are a pretty good illustration of why that might be. Consistent with the numbers on the tables, the scope selected is a **Burris** C4 4.5x-14x-42mm with a 30 mm tube, one Burris's newer models, mounted on Warne steel medium height rings. The "C4" represents "Cartridge Calibrated Custom Clicker"... When you purchase a C4, you can use an online form to enter a specific cartridge's trajectory and Burris will send you a calibrated elevation cap, free of charge.

The other reason for mounting this Burris C4 is that it comes with a Forever warranty, it is water, shock proof, fog proof, and it is nitrogen filled. The reticle has wind drift MOA dots and twisting the objective bell sets parallax distance. Also, drum roll... ALSO...it is a great looking scope. Like virtually all of my experience with Burris Optic products, the image through the eye piece is sharp, bright and high in contrast. Burris does an excellent job of blackening and baffling the inside of their scopes which kills contrast robbing internal reflection.

The mount hardware threads were brushed with 10w oil and torqued to 25 in/lbs. An inexpensive laser was used to boresight. For all of the recoil pounding, the hardware stayed put, no bright spots on the scope barrel developed and no waste of expensive bullets while attempting, to get on the paper. All shooting was done from a sled with 40 lbs of shot on the base. The sled takes me out of the accuracy equation and reduced recoil wear and tear.

Accuracy and consistency...

Above, a 3 shot, 0.6" 100 yard group with 250 Grain GMX bullets. Everything loaded with H414 above shot under an inch @100 yards. Re17 shot just a tad over at 11". The 225 grain Hornady loads also shot 11" or better with all powders indicated. Both of these loads are good ones for this combination of cartridge and firearm and I know these loads also perform well in 23" barrel firearms like the **Ruger M77 Hawkeye African**, and with a bit of a velocity boost.

Off the sled, the rifle's shooting personality with the Hornady 250 grain GMX is very similar to shooting a 1895 Guide Gun with full tilt 45-70 handloads, stout, but not punishing. The 225 grain bullet reduced recoil further to what felt like a 7mm Remington Magnum at heavier bullet weights when shot from a 7.5 lb rifle. Neither level of recoil is traumatic or unexpected from a rifle with this much power. I know it has become fashionable for young men to complain about recoil and the effects on their delicate sensitivities, but I am a relic so I still enjoy the presence of power; bigger guns and more horsepower. I liked the way the 250 grain GMX loads worked out. It can be pretty much a universal bullet for 375 Ruger handloads.

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