

Reaming Percussion Revolver Cylinder Chamber Throat

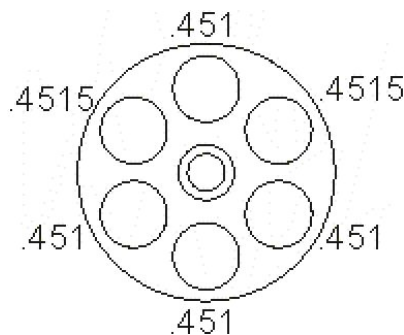
Revolver accuracy can sometimes be a source of constant aggravation. Shooters experiment with various loads and projectiles trying to achieve groups that don't resemble buckshot from a skeet gun. Some revolvers exhibit good accuracy with little or no effort at all, while others of seemingly the same quality will not shoot a decent group no matter the amount of work and frustration involved. There are many variables in getting a revolver to shoot accurately, and most gun makers do a good job, at least on their hunting guns. With everything that the bullet must endure before leaving the muzzle of a percussion revolver, it is sometimes amazing that they can place a bullet close to the intended target. In this section, I will attempt to address one particular, and the most crucial variable: the cylinder chamber throat diameter, which are often overlooked. The throat gives the bullet its first stabilizing guidance, and many people better than I have demonstrated that it is critical to good accuracy – perhaps more than the bore itself!



The cylinder chamber mouth on a revolver plays an important part in revolver accuracy in a couple of ways. The job of the cylinder chamber mouth is to guide the bullet from the chamber into the throat of the barrel. The ideal cylinder mouth diameter is about one half a thousandth over the maximum groove diameter of the barrel. In the case of lead bullets, it can be up to .001" smaller than the bullet diameter with decent results. If the

throat is larger than the bullet, then the bullet sort of wallows through the throat and never does get that initial guidance and accuracy will suffer. Sometimes it is impossible to achieve this magical combination since the cylinder mouths are occasionally larger than the groove diameter of the barrel. Assuming that the barrel and cylinder chambers are properly aligned, the transition from chamber to the rifling of the barrel should be a smooth one, with any slight misalignment corrected by the forcing cone of the barrel.

Problems occur that are detrimental to accuracy when the cylinder chamber is not sized properly in relation to the groove diameter of the barrel. As I have stated before, the cylinder chamber should be the same as, or slightly over, the groove diameter. When a chamber is too large, the bullet will be "bumped up" upon firing to fill the mouth and then squeezed back down upon entering the bore. The opposite of this condition is when the cylinder chamber mouths are undersized, or smaller than the groove diameter of the barrel. In this situation, the bullet is squeezed down upon entering the cylinder chamber mouth and then bumped up when entering the barrel to fill the groove diameter. The problem occurs when the bullet, which is now undersize for the barrel, does not bump up to proper diameter. This happens hard cast bullets, leaving a bullet traveling down the bore without a good seal or proper rifling engagement, resulting in excessive bore leading and imperfect alignment upon leaving the muzzle, and the result at the target is poor accuracy.



It would seem that after over 180 years of revolver manufacture, that those involved in the process would have settled upon a proper diameter for cylinder chamber mouths in relation to barrel dimensions, but it just isn't so. Oddly, the problem occurs most often with our replica percussion revolvers in common use; the Pietta and Uberti revolvers. These replicas have been with us for over 60 years, and still guns are being shipped daily with undersize cylinder mouths. The Pietta .44 caliber revolvers should be coming with .440 lands and .442 to .450 grooves with chamber diameters of .446 to .449 according the Dixie Gun

Works 2019 catalog. The .36 caliber revolvers should have .360 lands and .372 grooves with .367

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chambers. But if you want your projectile to fully engage the grooves, they are not going to. So, to improve the accuracy of your revolver, you may need to ream your chamber mouth. This is not a difficult task for the mechanically minded, but if you are not mechanically minded, you will need to have a gunsmith do it for you.

The absolute best method to measuring your cylinder chamber throats is with a very good set of pin gages. They can be expensive but are well worth the price if you have multiple caliber revolvers. But if you have no pin gages at hand, then you can slug your chambers and barrel to get the diameters. This method is not as accurate, but as long as your chamber throats end up larger than your barrel diameter by at least .001, it will be fine. After slugging your barrel and cylinder chambers, and you find that it is necessary, ream the chamber mouths as per the instructions provided with your reamer. The procedure is very simple, and all work is done easily by hand. It basically involves fitting the reamer to the cylinder throat, oiling the tool, and turning the T-handle or drill press. Your cylinder mouths will not need to be more than .001 to .003 larger than the groove diameter of your barrel. So if your barrel groove measures out at .450, then your chamber throats will not need to be any large than .451, for example. When reaming the cylinder chamber mouths, it is a common practice to only go as deep as ball diameter/bullet length (conicals), or as deep as the projectile is seated into the chamber mouth with a small powder charge.



I suggest using a the Victor Machinery High Speed Steel Adjustable Blade Reamers to correct the problem of undersize cylinder mouths on .44 and .36 caliber revolvers.

These reamers have been used successfully for many years to open up chamber mouths. The adjustable reamer is adjusted by loosening the nut at one end and tightening the nut at the other end. Due to its adjustability, it takes the place of many individual size reamers and can be used to progressively "open up" chambers. The reamer for .44 caliber chambers will open the mouths up from 0.4375 to 0.4688 and the reamer for .36 caliber chambers will open them up from 0.3438 to 0.3750. The only other item you may need is a T-handle to turn the reamer, such as is used to turn a threaded tap. Using the T-Handle is a much easier, especially if you do not have a drill press available.

There are untold thousands of good .44 and .36 revolvers that could benefit from this simple procedure, with more being made every day. If you have a .44 or .36 Colt or Remington, made by Uberti or Pietta, slug the barrel and chambers first to determine proper projectile size, then shoot it. If it is accurate, you are blessed. If it is not, the problem could be undersize cylinder mouths. The reamers will cost less than \$20, and should do many cylinders and last a long time if used properly. You can find other types of reamers out there that are much more expensive, but the Victory Machinery Reamers will do the job just fine. You can find the Victory Machinery Reamers online at:

.44 caliber reamer:

https://www.victornet.com/detail/RMBL-2A.html?fbclid=IwAR2BFiOco1nWsRKNqsX-xaDY8-Zi2bd_qOeW4U_zpvCgO7s6_37TgiKS9FU

.36 caliber reamer:

<https://www.victornet.com/detail/RMBL-5A.html?fbclid=IwAR01KKptqsEcUAY4KsAft7koIFHJiDtX2dhXKMXewoJT7rHFjHET6toABNg>