

Measuring Headspace on your CZ 457 Rifle Jack Behrman, October 3, 2021

A lot of rimfire rifle owners wish they knew what the headspace measures on their favorite rifle. You can certainly purchase “GO” & “NO-GO” headspace gauges but these only tell you if your rifle’s headspace is within SAMMI specs. If you are the owner of a lathe you could make a series of custom headspace gauges in .001” increments and with these you could insert progressively thicker gauges until the bolt would no longer close. This would certainly give you accurate headspace information on your rifle but few of us own a lathe.

I would like to show you a way to measure your bolt action rim-fire rifle’s headspace without custom built gauges. Many rifles do not lend themselves to the procedure outlined below. In order to carry out the necessary measurements the construction of your rifle must be such that you can see the end of your bolt and the chamber end of your barrel when the bolt is closed. There are certainly rifles that this procedure cannot be carried out on. Look over the third picture below and you can see the way the gun must be laid out. This article illustrates and explains this headspace measurement procedure on a CZ model 457. At this time I have not made any effort to judge what other brands and models of rifles this procedure would be applicable to.

Here are the steps to take to measure headspace on a CZ 457:

Remove the bolt from your rifle. Take the action out of the stock. On a CZ 457 the “bolt guide” must be taken out which requires removing the “magazine housing”. At this time clean the bolt face and the chamber end of the barrel.

Now begins the measuring:

Measure the depth of the case head recess on the bolt face. The most accurate way would be to remove the extractors and use a depth micrometer. However most of us do not own a depth micrometer and we will have to make do with the depth gauge function on the calipers that are on every serious shooters workbench. Calipers require a keen sense of feel to get accurate and repeatable results. A “third hand” can be a big help and you may find that securing the bolt upright in a padded vise will be just the aid you need. My CZ 457 bolt face recess depth measures .037”.

Now we need to know the distance between the bolt face and barrel. On a CZ 457 it is imperative that this measurement be taken with the action cocked as the whole bolt is free to move forward a few thousands after firing. After closing the bolt engage the rifle’s safety so you will not be dropping the firing pin accidentally. It is nice to be in possession of a set of narrow feeler gauges for this measurement operation but you can use scissors or metal shears to trim traditional ½” automotive type gauges to a useable width. Below are pics of the proper feeler gauges and an illustration of their position when inserted between the bolt face and the barrel.





I could probably stop here. I'm sure you have this figured out. Just add the two measurements you have just taken together and that is the headspace for this specific rifle. In the case of my CZ 457 a .009" feeler gauge was a very snug fit. So the .037" recess in my bolts face and the .009" distance between the bolt and barrel sum to a headspace of .046".

For rifles that have interchangeable barrels, like my CZ, you do not need to go through this procedure for each barrel. Simply measure the length of that portion of each of the barrels that is inserted into the receiver and do some math. As an example: The barrel on the rifle in this article has a length of 1.188 inches inserted into the receiver. A second barrel I own is longer in this dimension, it measures 1.190". Since it is .002" longer headspace with this barrel installed would be .002" less. That is to say .044 inches.



How much headspace is proper? Benchrest rifle gunsmiths try to set up the rifles they sell, that are intended for the ubiquitous "long-rifle" ammunition, with .043" headspace. SAMMI specs say a maximum headspace for long-rifle ammo of .051" is safe. From an accuracy standpoint less headspace on a rim-fire is better than more but in an inexpensive production rifle I suspect the .046" headspace on my CZ is pretty reasonable. Again if you own a lathe, or are willing to hire a skilled gunsmith, headspace can be adjusted by setting back the barrel to achieve the ideal headspace of .043". On a gun with easily interchangeable barrels like the CZ 457 the job is actually relatively simple because the barrels are not threaded so getting the extractor cuts lined up after setting the barrel back is not required.

Instead of going through the trouble of setting back the barrel consider shimming the length of your rifle's bolt to adjust the headspace. This website explains how to do the shimming and will sell you the shims. https://www.triggershims.com/cz_rifles.php#CZ457