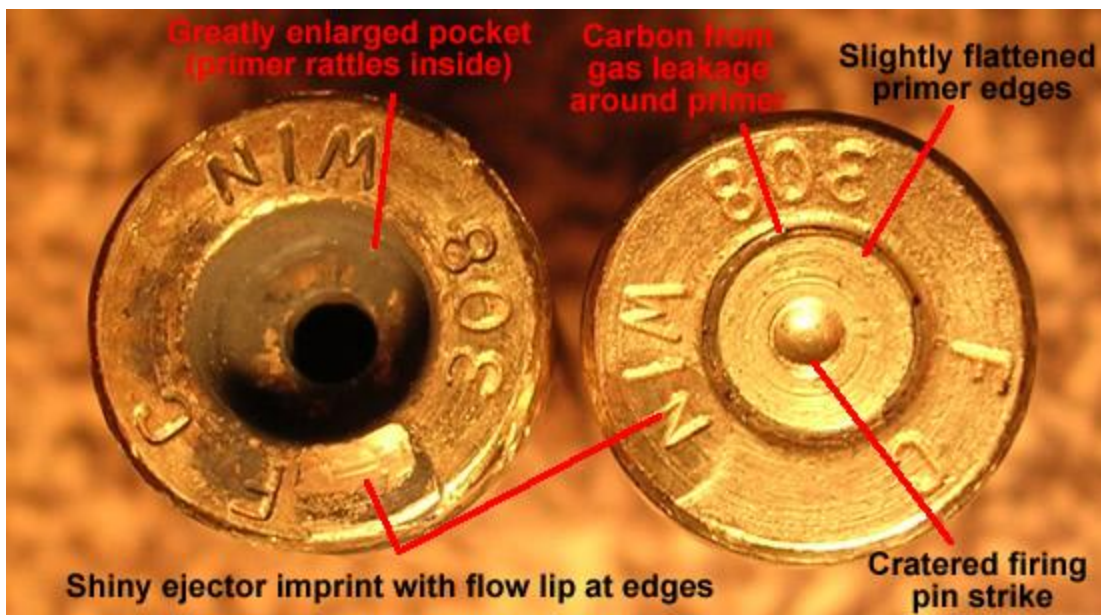


# PRIMERS AND PRESSURE

In the course of talking to many shooters, it has become clear to me that the manufacturers of primers have done a less than adequate job of educating reloaders on the application of their primers. Everybody seems to realize that some primers are "hotter" than others and some seem to shoot better for them than others, but few reloaders know that primers have different pressure tolerances.

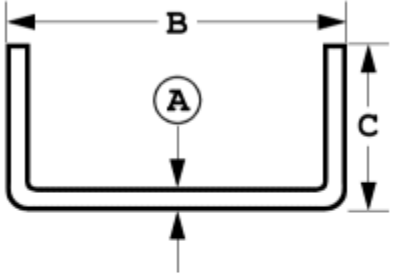


## Primer

## Pressure

## Tolerance

When loading a .223 to the maximum, I was getting primer piercing before I reached case overloading. I don't know what prompted me to try CCI 450s instead of the 400s which I had been using, but I did. Presto! No more piercing! Interesting!? A primer that has a hotter ignition and yet withstands more pressure! That's when I decided that it was time to do a dissection of all primers concerned. The chart below shows my results.

		A Cup Thickness	B Cup Diameter	C Cup Height	<h2>Rifle Primer Dimensions</h2> 	
Manufacturer						
<b>Small Rifle</b>						
CCI	400	.020"	.1753"	.109"		
	450	.025"	.1750"	.113"		
	BR4	.025"	.1755"	.109"		
Federal	200	.019"	.1757"	.111"		
	205M	.0225"	.1744"	.1075"		
Remington	6 1/2	.020"	.1753"	.109"		
	7 1/2	.025"	.1752"	.110"		
Winchester	SR	.021"	.1750"	.109"		
<b>Large Rifle</b>						
CCI	200	.027"	.2112"	.118"		
	250	.027"	.2113"	.118"		
Federal	210	.027"	.2120"	.117"		
	215	--	--	--		
Remington	9 1/2	.027"	.2100"	.119"		
Winchester	LR	.027"	.2114"	.121"		
	Mag	.027"	.2114"	.121"		

By studying the numbers (Cup "A" thickness), one can see which primers in the small rifle sections should be more resistant to primer cratering and/or piercing. Primer cup diameters are all similar and appear to follow a specification, but check out the **cup thickness** in the small rifle primers (Dimension "A"). Some cups are quite a bit thicker than others: .025" for CCI 450 vs. .0019" for Fed 200. Large rifle primers all appear to have the same cup thickness, no matter what the type. (As a note of interest, small pistol primers are .017" thick and large pistol primers are .020" thick.)

If you are shooting a 22 Cooper, Hornet, or a Bee, the .020" cup will perform admirably. But try using the .020" cup in a 17 Remington and you will pierce primers, even with moderate loads.

Considering that cup thickness varies in the small rifle primers, it is obvious that **primer "flatness" cannot solely be used as a pressure indicator.**