

Advanced Case Forming Operations

It has become increasingly popular to form new wildcat cartridges by shortening the parent case and moving the shoulder position back. There are potential problems to consider when performing this type of case forming operation to ensure that the cartridges you produce are safe and reliable.

Neck Wall Thickness

The first consideration is the thickness of the newly formed case necks. When a case neck is reduced in diameter, or moved during case forming, the wall thickness increases. Brass cartridge cases are progressively thicker as you approach the base. This means that when a new case neck is formed from what was previously the parent case's shoulder or body, the neck wall thickness will increase. This can create a dangerous condition if there is not adequate clearance between the neck of the loaded cartridge and the chamber. This clearance can be determined by comparing the neck diameter measurement of a dummy round or loaded cartridge and the neck diameter of your chamber. We recommend a minimum clearance of 0.003". If you do not know the neck diameter of your chamber, you should enlist the help of a competent gunsmith to assist.



The "Donut"

The second consideration is the formation of a "donut". This is a ring of thicker brass inside the neck of the newly formed case (above the shoulder/ neck junction). This donut must be removed, or dangerous pressures will result due to the lack of clearance for the case neck to release the bullet when fired. Again, we recommend a minimum clearance of 0.003".

Neck Reaming and Neck Turning

There are two common methods used to reduce the neck wall thickness of brass cases. The simplest is neck reaming- this process involves using a reamer to remove material from the inside of the case neck. Neck reaming is a very effective way to remove the aforementioned "donut" from the inside of the case neck and reduce the neck wall thickness. Reaming, however, does not usually improve the neck wall thickness uniformity.

The Neck Turning Process involves removing material from the outside of the case neck. Neck Turning Tools are often piloted and designed to fit the inside of the case very precisely so that the resultant case neck thickness is more uniform in addition to being made thinner.

Please refer to the neck reamer / neck turning tool's instructions for proper case preparation procedures and proper use of the tool.

Some cartridges may require fireforming to produce their final dimensions before neck reaming / neck turning can be performed properly. The only safe method we can recommend for this operation is fireforming cases with an inert filler. For detailed instructions on this method of fireforming cases, see Ken Howell's book titled, "Designing and Forming Custom Cartridges for Rifles and Handguns".

If you have any questions regarding the above procedures, do not hesitate to contact our tech support members.

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