

David Tubb's Competition 6XC fire-forming

Engineered
by 11-time
National NRA
High-Power
Champion,
6-time National
NRA High Power
Long Range Rifle
Champion
David Tubb

from **Superior Shooting Systems Inc.**

[the leader in high-performance accessories for the competitive shooter]

Information & Instructions

[SAFETY NOTE: Reloading ammunition is a potentially dangerous activity. Please take time to familiarize yourself both with this product as well as accepted safety practices. If you do not fully understand something, please call us for help at 1-806-323-9488. Play it safe!]

This document contains instructions, suggestions, and tips for those who wish to form 6XC cases from parent .22-.250 brass, or adapt 6mmX cases for use in a 6XC chamber. There is excellent quality Norma and Tubb headstamp 6XC brass available at DavidTubb.com

Sizing and Preparation for Fire-Forming

To prepare a .22-.250 case for use in the 6XC chamber, adjust the sizing die body to fully engage the shellholder to ensure that the cases get maximum run up into the sizing die. Run the press ram to its fully “up” position and thread the die body downward until it is touching the shellholder. Thread the die body lock ring down until it stops against the top of the press.

The threaded portion of the die that retains the neck/shoulder bushing should be tightened down snugly against the bushing; thread down the lock nut to secure it. These die settings may need to be adjusted after this initial use but it is imperative to **fully size** these cases prior to fire-forming. Adjustment instructions are included later in this material.

When forming (running through the sizing die) the 6XC you will be setting and reforming the shoulder radically enough that you will get some “mushrooming” at the shoulder/case body junction [see photo]. This is nothing to be concerned about. The case body will blow out circumferentially to the chamber dimensions upon fire-forming, as will the case shoulder area.

Forming Tips

When initially working the cases I use a cotton swab and some powdered moly (graphite will work) to lubricate the inside of the .22-.250 case neck. This eases the tapered expander into and through the neck with less resistance. I also use Imperial Sizing Die Wax on the case neck and shoulder. Don't wipe it off after sizing! I leave the lubricant on the case neck and shoulder for fire-forming as I feel this will help the case fully expand to the chamber with as little resistance as possible.

Note for 6mmX Users

If you changed barrels on your rifle and went from the 20-degree shoulder 6mmX to the 6XC, you can reuse all your old 6mmX cases. Just run them through this new sizing die as was instructed for .22-.250 use and fire them in the new 6XC chamber. The overall length on all 6mmX cases (20- and 30-degree shoulders) is 1.911 inches (suggested trim length is 1.900). Since the 6XC sizing die will be reforming the shoulder somewhat on the old 6mmX cases, you will very likely have to do some case length trimming on the sized 6mmX cases to get them to the correct length.

Fire-Forming Load

Keep in mind that in order to properly fire-form the case with the first firing, the charge must be stiffer than what you would use for your short range load (200 and 300 yards). For fire-forming I use a load which is between my short range and long range load. This is because I am usually shooting this through a new barrel and know that my short range load is reasonably mild, while my long range load is definitely hotter. Since I don't know exactly what my 600 yard load will be for a new barrel, I back off of my normal 600 yard load 1 grain. This just happens to be about 1 grain more than my short range load.

[Load suggestions are included later in this material.]

I would recommend that you seat your bullets (whichever bullet you might use) so that the bullet is just touching the lands (rifling) for fire-forming. This does a couple of positive things: it puts the un-fire-formed head of the case directly against the bolt face. It also assures a little more firing pressure, which enhances the fire-forming.

What you are actually doing in fire-forming a .22-.250 case into a 6XC is really no different than shooting a new piece of brass in any chamber. When a .308 Winchester case is fired in a .308 Winchester chamber, the case is fire-forming (though slightly) to the chamber of your particular rifle. Some rifles (particularly rear locking lug designs) shoot their best groups when fire-forming.

As said earlier, I leave residual case sizing lubricant on the case neck and shoulder during fire-forming as I feel this will help the case fully expand to the chamber with as little resistance as possible.

I would not be hesitant to shoot my fire-forming load in a match, even for a Rapid Fire event. The mushrooming of the case shoulder actually helps the case feed with more consistency (larger shoulder diameter) than the normal .22-.250 body taper. Even with the stiffer fire-forming charge, the bolt will still open very easily for Rapid Fire use.

After your cases are formed, refer to the 6XC Die Instructions publication ("[6XC_die_instructions_2012.pdf](#)") to correctly set up and adjust your Superior Shooting Systems Inc. Competition Die Set.



LOAD SUGGESTIONS

Note: After your 6XC cases are fire-formed using one of the fire-forming loads listed below, I suggest starting at that listed fire-forming load when working up your 600 or 1000 yard load. Chronograph and watch for pressure signs.

PLEASE NOTE the loads listed below are with boron-nitride (BN) coated bullets! Use of bare (uncoated) bullets will raise pressures!

Fire-Forming Loads

with Sierra 107gr. BN-coated MatchKing

VihtaVouri N150: **34.0 gr.** [approx. 2900 fps]

Hodgdon VARGET: **34.0 gr.** [approx. 2900 fps]

Hodgdon 4350: **38.0 gr.** [approx. 3000 fps]

VihtaVouri N160: **38.0 gr.** [approx. 3000 fps]

www.DavidTubb.com

If you'd like to learn more about all topics addressed in these instructions (fire forming, sizing, etc.) I suggest getting a copy of **Handloading for Competition** by Zediker Publishing. The web site is www.ZedikerPublishing.com or call 662/473-6107.