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Hints For Using Cerrosafe

by: Mike Watkins

Recently, we've fielded a lot of questions on the Tech Help Lines about casting chambers using Cerrosafe casting metal. The following is some information about Cerrosafe that Cerro Metal Products has provided us with.



1 lb. Cerrosafe Ingot

“The basic ingredient of Cerrosafe is bismuth. Bismuth is a heavy, coarse, crystalline metal which expands when it solidifies, up to 3.3% of its volume. When bismuth is alloyed with other metals, such as lead, tin, cadmium and indium, this expansion is modified according to the relative percentages of bismuth and other components present. As a general rule, bismuth alloys of approximately 50% bismuth exhibit little change of volume during solidification.

Alloys containing more than this tend to expand during solidification and those containing less tend to shrink during solidification.”

What all this means for the gunsmith is that you can make chamber castings using only Cerrosafe and a few, simple hand tools. To make a chamber casting, first clean and degrease the chamber. Use a tight-fitting, cotton patch that's wrapped around a bore mop or brush to plug the bore just ahead of the throat. I usually leave the cleaning rod attached to the plug until it's time to remove the plug. Melt the entire bar of Cerrosafe in a heatproof container that you can easily pour the hot Cerrosafe out of. You can use a propane torch or heat over a hot plate or the burner of a stove. Cerrosafe melts easily at 158°-195° F. While the casting metal is still liquid, stir very well, skim off the dross and pour your chamber. The real trick with Cerrosafe is not to overheat it. If you heat the solid slowly, and keep it within the required temperature range, you shouldn't get any dross.

Note the time the casting was poured. The casting will take only a very short time to solidify, usually within a minute. Wait 30 minutes and then remove the plug from the bore. Turn the muzzle upward and the casting will fall from the chamber. At 30 minutes after initial solidification, Cerrosafe shrinks slightly, so removal is very easy. Allow the new casting to cool thoroughly then measure the casting exactly one hour from the time it was cast. The casting will give you an exact measurement of the chamber. Cerrosafe casting metal can be used over and over. Remelt the entire amount back together and pour the Cerrosafe into a small mold of the appropriate size. Always melt the entire Cerrosafe ingot to make a chamber casting. For best results, never cut off, or use, just a part of the ingot.