

A Tutorial for Molding Short Reed Goose Guts

By

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I've been asked a few times to do a quick tutorial on making molds for short reed guts, and thanks to Jack Chaney and Fred Wills from Coos Custom I was able to get it completed this weekend. I'll try hard to keep things in order and make them as simple as I can.

First off, let's talk about preparing the parts you want to mold. They should be clean and free of grease and grime. Take a nice sharp single edge razor blade and carefully clean up and flashing or casting stuff that is still on the gut and wedge. If the gut or wedge has holes, or depressions that you would rather your new guts not have, use a small bit of modeling clay to fill them and very carefully scrape them flush with a razor blade. Remember that anything on the gut when you mold it will show up on every poured part, so make sure it's as perfect as you can get it! These are the two we are going to cast today.



Casting plastics are 2 part liquids that form a hard plastic when mixed together. When the hardening occurs, there is a slight bit of shrinkage that happens in both the X and Y axis of the part that will cause us great concern in the finished product if we don't think ahead a bit to try to prevent it. The length of the goose gut isn't a critical factor, but the diameter of the gut can and will make a huge difference in how it fits in the insert of your calls.

Nobody wants to mold a set of guts and then find out that they have to layer tape on them to get them to work in their calls. For this reason, I'm going to add a layer of electrical tape on the back of the guts to try to slightly increase the size of my molded parts to keep the size right so they will drop right into the call and fit correctly. Remember that neatness counts, so try to lay tape straight and flat, and trim all edges nice and clean. Even if these fit too tight, it's always easier to sand a wedge down to fit right than to try to take up space with tape. Here's our 2 guts with a bit of tape on them and ready to begin the molding process.



The molding material that I prefer to use is the High Strength 2 product from Alumilite. There are LOTS of other types of casting materials that could be used, but I find that the High Strength 2 has good strength and rip resistance, and is easy to use. Here is the box I bought for this tutorial. There is enough material in here to build a dozen molds if a guy is smart about his sizing.

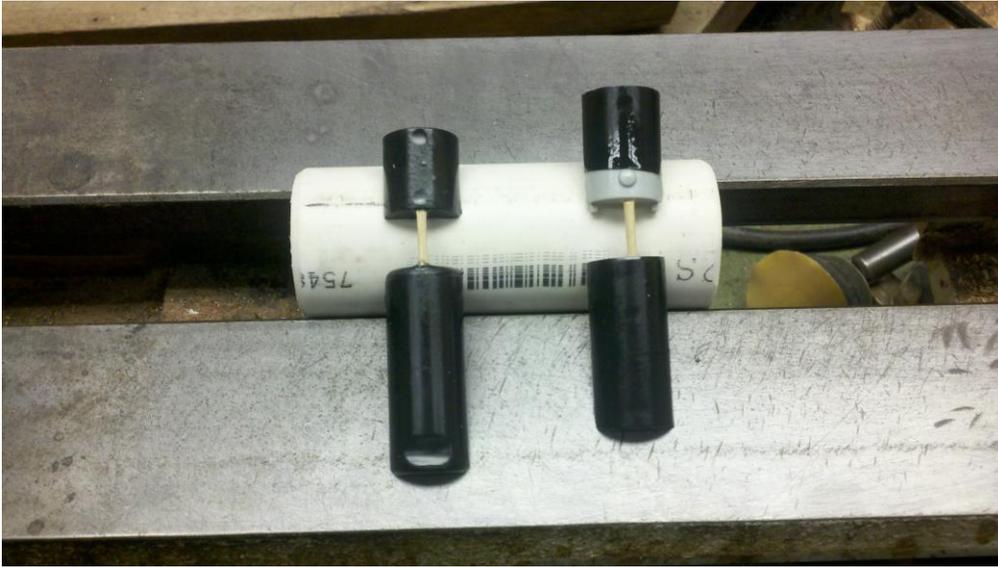


Now we need a mold container. Alumilite suggests a mold thickness of at least 3/8" to keep the wall rigid enough to cast accurate parts. As these guts are close to 5/16" laid flat, I found that 1" PVC pipe is perfect for getting these molds nice and solid without using more RTV material than you need. First off, I want to lay my parts out and figure how I want them to sit in the mold. I like to cast my guts and wedges in the same mold, so I'll lay out my guts with the wedges end to end with a gap of 3/8".



Here I've cut a chunk of PVC long enough to leave me 3/8" on each end of each mold. Now it's time to address how we want the parts to set in the mold. There is a factor we have to consider here before we go too far, and that is the gas bubbles that are created by mixing the 2 parts of the RTV. We want to add a slight vacuum (about 5 – 7 lbs) after we mix and pour the RTV into the mold to allow these gas bubbles to come to the surface and escape the mold rather than getting trapped next to our parts and causing voids that will mess up our parts. For this reason it's very important to remember that all cavities in your parts must face up when you pour. I prefer to use chunks of toothpicks and superglue to hold the parts together.





With my toothpicks attached, I'm ready to get my molds together and prepare them to pour. I cover one end of my PVC mold with duct tape, and put a small hole in the very center.



This is the bottom hole of my mold, and will keep the parts centered in the mold as we pour in our RTV. Now I want to tear off a strip of duct tape about $\frac{1}{4}$ " wide and 3" long. In the center of this I'll add another hole to keep the top centered in the mold. We want to keep in mind the gas bubbles that are going to form in the RTV, so I'm going to mount these with the tone channel up to keep the bubbles from getting trapped in my mold. I slide the gut set into the mold, threading the toothpick into the hole in the bottom, then sliding the strip over the top toothpick and securing it to hold the parts centered.

Here's a picture of my mold ready to pour:



I like to pinch the edges together to help hold things in place and make it easier to pour in the RTV.



Now I want to make sure that both my molds are ready to pour, and I need to find a way to securely hold both tubes upright so I can degas my mold after pouring. I have used pint jars with a small vacuum pump for bleeding brakes with good success, but because the Coos Custom guys had a vacuum chamber, we used that instead. We drilled a couple of holes that fit the toothpicks in a chunk of scrap and we are ready. Notice the sharpie lines on the toothpicks. This denotes the back side of the guts so I know where to cut down after the mold is finished.



Before we mix our material, we need to know how much we need to fill the mold. I cut another chunk of PVC the same length as the molds, and taped the end off with duct tape. I filled this with water and poured it into a small plastic cup, marking the line with a sharpie to show the level. This will give me more than enough to fill the mold without having too much extra.



Now we are ready. We set up the vacuum chamber to make sure we were ready to degas the molds after pouring. The High Strength 2 mixes at a 10 to 1 ratio. We weighed the cup empty, filled the container to the mark with RTV and weighed it again. The weight of the RTV was 51 grams.

51 grams of RTV x 10% = 5.1 grams of catalyst

We mixed the RTV and catalyst well for several minutes until it was a uniform shade of pink and proceeded to fill our molds. When pouring the RTV, pour slowly into one corner of the mold, letting the old fill slowly from the bottom up. This will reduce the amount of trapped air in the molds that we will have to deal with during degassing. We laid a sheet of wax paper in the bottom of the chamber to catch any drips from the mold and we were ready to roll.



Both molds are put into the vacuum chamber. You only need to degas for about 15 minutes, and anything over about 7 pounds of pressure will likely cause your molds to puke.



High Strength 2 is not a fast cure product, so once your molds are done degassing you need to set your molds in a warm place at least over night. Once the RTV is cured, I cut the PCV off of the mold using my band saw. The lines I drew on the toothpicks show me the back side of the guts. I take a good razor blade and cut straight down to the parts and across the back, leaving 3/8" on each end for stability. Carefully remove your originals and your mold is done. Stand by for the molding tutorial coming next!

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