Report : Cuttlebone Casting

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Jewelry 2040
Cuttlebone casting is one of the casting methods that helps people create jewelry parts that they could not do with standard fabrication, or other jewelry making techniques. Different from lost wax casting, it requires less tools and space. However, it only suitable for making small parts or small pieces like pendants.

So, what is cuttlebone? “Cuttlebone is a calcium back plate that forms as the cuttlefish gets older” (Lavafalls, P3), therefore, it’s not actually the bone of cuttlefish. It’s a white shell like thing, but is much softer than actual shells. Inside of the cuttlebone, there are naturalized lines which looked like designs. Sometimes, people will take advantage of it, and other times, they will just remove the lines, and carve their own design on it.

When did people start to use cuttlebones for casting? Research found that it can be traced back to 7th century by Chinese and Greeks. And it was widely spread and used by many European countries for mass jewelry production. However, it didn’t last too long with the fast development of newer technologies, and the increased demand, cuttlebone was no longer to be used in industrialized jewelry making as it takes too much time to create good molds. Nowadays, cuttlebone casting are mostly used by artists.

So, what techniques do artists use in cuttlebone casting? There are three ways to create molds, and our teacher Mr. T showed us two of them: one-side mold, and carved designed two-sided mold. These two methods both requires us to saw one solid piece of cuttlebone into two half pieces, and then use sandpaper to file a flat surface. For one-sided mold, what we need to do is to draw the design on the inside of one half piece cuttlebone and carve the design into the cuttlebone. While we are drawing the design, It’s important to keep one thing in mind that we should at least 30% of cuttlebone around the design. Next
step is to use a half round file to carve a “v” at the top edge of wer design as wer sprue. and carve another half of the sprue on a piece of charcoal block. After carving the sprue is completed, we need to carve a few air vents for the air to escape when we pour the metal into the cuttlebone. Then tie the cuttlebone pieces together with the charcoal block tightly enough that there are no other gaps other than the sprue holes. Using two bricks to hold it straight up, so that we can pour the melted metal into the mold through the sprue hole. The final step is taking the metal out after the mold has cooled down. Carved designed two-sided mold is very similar to one-side mold. However, instead of only drawing and carving the design on one piece cuttlebone, two-side mold need we to draw design on both piece of cuttlebones.

Different from the carved design one-sided and two-side mold, it requires hand-carving the design on the cuttlebones, impressed designed two-side mold requires we to put four pegs on the four sides of one piece of cuttlebone, and then use “a hand object with no undercuts that can withstand being pressed between two pieces of cuttlebone” (Pennington). And then carve a “V” shaped sprue on both-side of the cuttlebone like what we do for the one-side mold. And the put the two pieces cuttlebones together by line-up the four pegs (Make sure there is no gap between cuttlebones, file until them are totally match if there is gap). Then tie the two pieces with metal strings and follow the same steps as we do for the one-side mold as well. During the process, we have to be very careful and gentle when we are pressing the design on the cuttlebone or trying to separate the two-pieces cuttlebone after we are done pressing it. If the cuttlebone accidently breaks, we will have to start over from the very beginning. Once the metal is casted and cooled, we
can use saw or tweezer to cut off the top part, and put it into pickle bath. Afterwards, we will need to file the piece to smooth the edges.

The reason why artists like to use cuttlebone for casting is because the cuttlebone provides unique naturalized texture, but the texture also creates a weakness for cuttlebone casting. As the cuttlebone mold can only be used one time, we have to create a new mold after we used the old one. This made it almost impossible to create exact replica pieces. However, some artists who do not want to give up on the unique texture, have found new ways of using cuttlebones:

There are two ways of doing it. First ways is to cast complete pieces by casting their desired shapes directly out of the cuttlebone, Then, make a rubber mould for the casted pieces. Second way is to make small parts out of cuttlebones, such as metal sheet, and wires that has cuttlebone textures, and then use fabrication to combine the small piece together. In detail, this way can be separated into two methods: 1. Directly copy the texture from the cuttlebone by using pliable sheet wax. “Using disposable think latex gloves to avoid leaving fingerprints, press the wax into cuttlefish bone design. Press firmly and in small areas with your thumbs to get a good impression on the wax”(Matens, P9). After they get a good piece of designed a wax, they would shape it into the size they want and cast the actual piece of of it. Then make a rubber mould for it. 2. It's simple just make designed shapes, cast them directly by using cuttlebone, then used the casted pieces to make rubber mould. With rubber mould and injected wax, it’s possible for people to create the exact same texture and designed jewelry pieces.
Cuttlebone casting is a great and wonderful technique. While it provides a naturalized unique texture, and gives jewelry pieces an organic shape that is impossible to create by hand, it also inspires people to explore our nature, and increases the number of possibilities we can create and mold. It’s a great technique to learn.
Work Cited


