

Central Dakota Gem & Mineral Society

Catlinite Pipestone & Pipe Carving

By Michael Simonson

There are many things to consider when carving pipestone. First we will look at finding good quality carving material. We will then cover basic steps in the carving process. We will also address problems that often occur and how to avoid them. We will consider possible fixes to errors that occur despite our efforts to avoid them. We will close with some general thoughts on carving and treatment of pipestone. The photos in this article are of Catlinite and black pipestone.

My carving experience is mainly with Catlinite pipestone from Pipestone, MN. This material is expensive and very hard to acquire for a variety of reasons I have addressed in previous articles available on the Central Dakota Gem and Mineral Society website. Red pipestone is readily available for purchase on the internet. Although often labeled “Catlinite” it almost never is actual Catlinite from Pipestone, MN. The buyer can ask themselves this simple question – Would you spend weeks of back-breaking hard work with hand tools in the hot summer sun to sell your results for \$50 or \$100? That would not make any sense financially. Also, the tribe whose area you were working would not approve of selling it. Suffice it to say there is virtually no chance of buying true Catlinite on the internet unless it was very old stock. My Catlinite was acquired 50 years ago at Pipestone, and was difficult and expensive to obtain even then.

That being said, nice red and black pipestones are found and mined in various locations. They are much more common than true Catlinite and are very affordable. They are excellent for personal-use pipes or other items. The guidelines in this article are applicable to Catlinite and other pipestones.

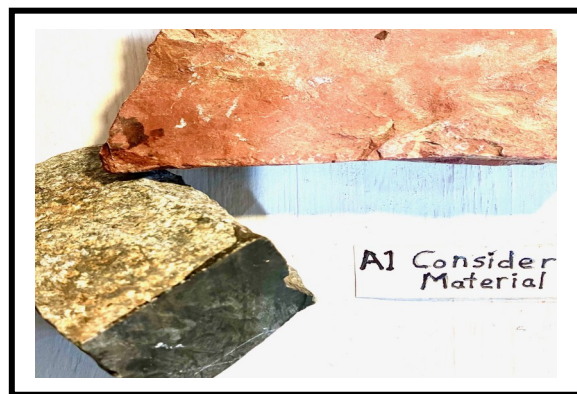
First, we must consider our safety when carving stone. Using any tool has some inherent risks involved. Power tool dangers can be much greater. Follow safety instructions associated with those types of tools and the specific instructions that came with your power tool. Very serious injuries can occur in an instant – don’t risk it.

An injury I suffered came from holding a piece that I was drilling. I was pushing hard because it was a very hard material. It unexpectedly pushed through the bottom of the piece and into my hand. It made a very nasty hole that was hard to heal. Puncture wounds can occur from any pointed tool. Bladed tools cuts can be quite severe. Grinders can create wounds that although typically shallow are hard to control because the wounds are hard to close. Power saws are extremely dangerous! Simply put, use care with any tools, especially power tools.

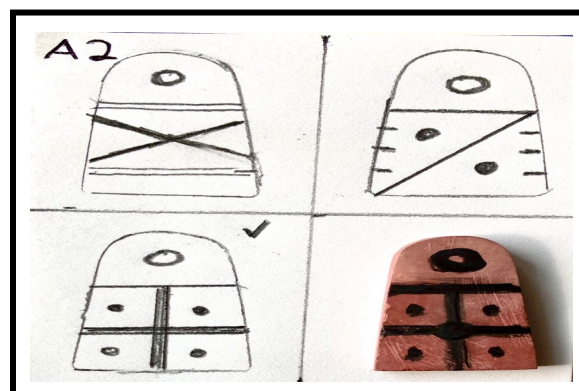
Catlinite pipestone & Pipes - (cont.)

Following are some basic steps to consider when carving pipestone:

A1. Take your time. Consider the size, shape, color and texture of your pipestone. Often such characteristics will give you an idea to use. For instance, the shape may suggest a certain type of effigy pipe – does a lump on the stone look somewhat like a bison or eagle? Is the piece long enough for a Calumet pipe's forward projection? Don't hurry – let your mind ponder it for however long it takes. You may be making something you will have for a lifetime, so a few weeks or months is not unreasonable. It is far better to take the time to create a piece that will give you a lifetime of satisfaction than it is to hurry to create something that you are not proud of.

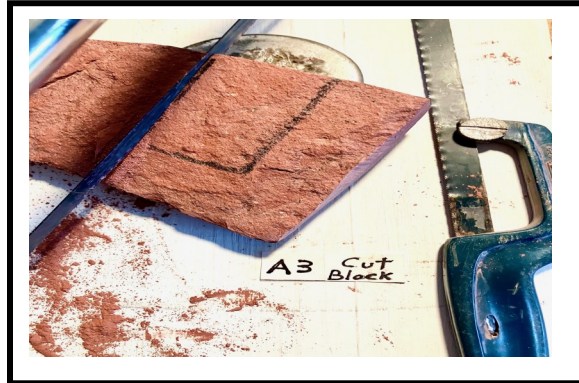


A2. Draw your ideas. Once you have chosen a basic idea, take the time to draw out variations on that theme on paper. Get creative. Some ideas maybe won't work out, so find out on paper and pencil before you start carving. If nothing looks or feels right, go back to step 1. When you have chosen a design, draw it directly onto the pipestone piece to see how it looks. This will guide you when you cut your block and general shape. You can lightly sand off any design you wish to change. I use speckled dots showing areas to remove.



Catlinite Pipestone & Pipes - (cont.)

A3. Cut out a rough shaped block using a grinder or hacksaw. The block will be the length, width and depth of your desired piece, plus a little extra to provide for slight variations.



A4. Create the basic outline. Use your hacksaw to cut out the basic pipe stem, bowl, and make room for decorative elements. Be generous and leave plenty of room for working the piece. You can always thin something down later, but it is difficult to add to material.



A5. Carve your piece to the general shape desired. This step uses rasps, files, blades, awls and other tools to remove unwanted material. By the end of this step you should clearly see basic shape and design of the piece. You will also drill your holes. Be careful as it is easy to make a costly mistake in this step. See Steps B1, B2, B3, B4 and related photos.



Catlinite pipestone & Pipes - (cont.)

A6. Make the finished carving with fine tools like small diamond files and dentist picks. Add the finest details of the finished piece. This is also where you would etch in any designs elements.

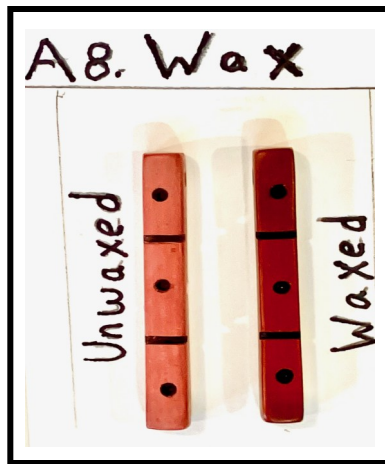


A7. Sand and polish your piece. Use at least 250, 320, and 400 grit papers to give your piece a finished look. Higher grits provide a more polished look. Use a polish if you like. Any grade polish will give a nice finished look.



Catlinite pipestone & Pipes (cont.)

A8. Wax your piece (optional). Native Americans used bee's wax. Have a board or other surface not damaged by heat. Use bee's wax, a *black candle*, or *candle the color of the stone you using*. *Heat the stone to a very high temperature*. Use a metal rod or something else to hold the piece with. Do not let it fall – you can get a nasty burn or damage furniture or flooring. Let generous amounts of melted wax drip onto the heated piece. Wipe off the excess while still hot. Reheat and wipe as needed. Use a toothpick to remove wax from crevices.

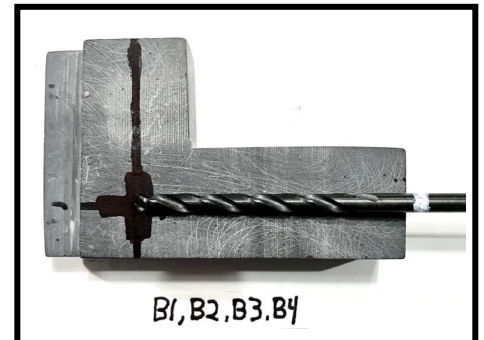


A9. Examine the finished piece. Is it exactly what you want? If necessary, make any final touches by repeating the steps above as required.

Catlinite pipestone & Pipes (cont.)

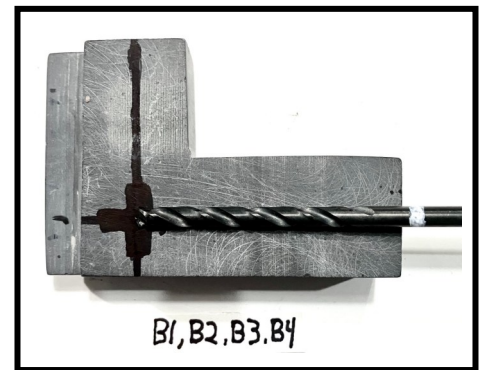
Following are some common errors that can occur in the stone carving process, how to avoid them and possible repairs.

B1. Side blowout. This is the worst type of error and can ruin the piece. It occurs when a hole is not aligned with the center of the area being drilled. It usually happens with long holes as a slight deviation from straight may not be obvious. The drill bit unexpectedly pushes through the side. There is also a section of weak thin wall extending back from the hole. There is no easy fix for this error. It sounds obvious, but avoid this error from occurring. Draw a line down the middle of the top and side of the section being drilled. With the drill bit fully inserted, look from the top and side as you go. This helps to visually confirm that the hole is properly aligned, thus avoiding a blowout error. If you start going off-center, use gentle side pressure to slowly re-align the hole. A complicated blowout fix is to add a layer to the damaged side (if possible). The pieces must fit perfectly together so this only works with smooth flat surfaces. Join them with a powerful, heat-sensitive glue/epoxy. If symmetry is desired because the two pieces have a color variation, you need to repeat on the opposite side as well.

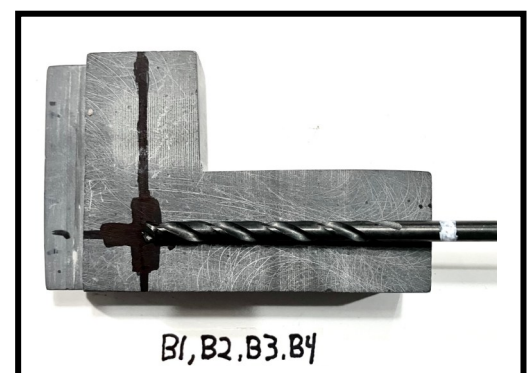


Catlinite pipestone & Pipes (cont.)

B2. Bottom hole/push-through. Like a side blowout, this results in an unintended hole. The drilled hole may be straight, but goes too deep and accidentally pushes through the far side. A good tip to avoid this is to draw a cross-hatch line on the outside of piece at the desired end of the hole. Place the drill bit along the outside so the tip reaches the desired depth as marked by the cross-hatch, and mark the drill bit with a marker where it exits the piece. Stop drilling when the bit reaches that mark. In a pipe, use this technique for both the bowl and stem. It is often more common to push through the end on the shorter bowl hole because it doesn't seem like you have drilled very far. To repair, a small, snug plug can be cut to fit. Use a heat resistant glue/epoxy.

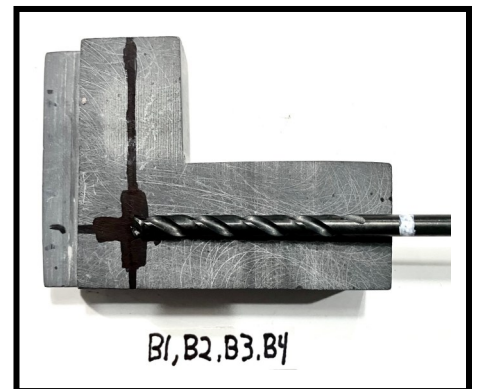


B3. Broken drill bit. This happens when too much side pressure is put on the bit and it breaks off in the hole. Although the broken bit may be very tightly gripped in the hole, this is usually an easy error to fix. Avoid the error by keeping pressure directly behind the drill bit, pushing straight on, and do not push too hard. To repair, file off enough stone to grab the broken bit with a vice-grips. Remove it and resume drilling with a new bit.



Catlinite pipestone & Pipes (cont.)

B4. Broken lip edge. It is common for the edge to chip or partially break where a hole is started. Avoid this by starting at the exact center of the desired hole and by drilling straight. A good tip is to draw an "X" over the end where starting the hole. Make a small circle at the center of the X and stay within it as you start your hole. Don't let the drill bit slide across the surface as you start. Once started, the drill bit will stay in the hole. To fix a chip or small break, grind away enough to have a smooth end. Simply rounding the edges a little may also eliminate the chip.



B5. Etching error. This happens easily when starting to etch into a flat surface as there is little to stop the tool from sliding further than desired. A tip to avoid this is to carefully draw your design on the piece. Be very slow and careful to stay in the drawn lines when you start. As you go over it, the lines become deeper and it is easier to keep your tool in place. Don't push too hard so that accidental grooves are shallow and easy to fix. Fix by gently sanding away the accidental scratches/grooves. Re-etch if necessary.

Catlinite is expensive and is sacred to many Native American tribes. It is not appropriate to indiscriminately waste Catlinite stone. Smaller pieces are useful in making pendants, beads, gaming pieces, effigies and even repair plugs. The dust can be used with glues/epoxies for fixes or creative designs.

Pipestone, whether Catlinite or other types, is a wonderful material to work with. Over time, the carver will develop a sense for how it responds to different techniques. The smooth texture feels wonderful to the touch. It makes beautiful jewelry that feels good against the skin and absorbs body oils to create a deep rich color. As a pipe, it is special to share with others in a sweat lodge or other social setting. Its versatility allows carvers to create meaningful artistic sculptures. Regardless of what you create, it is a joy to work with and the finished results can provide years of appreciation.