

Cutting Chips To Cabs

By Dennis Chapman

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I was once told that we miss out on quite an opportunity just getting big rocks to slab, cut & polish, and ignoring smaller rock chips. You know he was right, with chips you can see just about what you are getting, they are cheap or easily found, and very few bad surprises.

Tools



- Grinder: I like flat disk grinder because you can do all of it on one machine.
- Old toothbrush to clean wheels.
- Dop Sticks: several different width dowel sticks.
- Dop Pot Or Alcohol Lamp
- Dop Wax Stick
- Jug Of Water & Spray Bottle of Water

Pick Some Rock Chips



Here I have some varisite & rutiled quartz.

Find The Top Of Stone



Find what you want to be the top, mark it if you like. Look at the sides and see what you will have to cut off for the bottom.

Now Lets Start Cutting

I like to use diamond wheels & they aren't very expensive on flat disk grinders. Most stones you can start with 100 grit, but I have had to use a light touch at 180 then do most my cutting at 325 on softer stones.

- 100 Grit rough cut (metal wheel with diamond)
- 180 Grit medium cut (metal wheel with diamond)
- 325 Grit light cut to smoothing out (diamond in resin disk)
- 600 Grit (diamond in resin disk)
- 1200 Grit (diamond in resin disk)
- 40,000 Grit diamond paste on felt wheel
- Raybright A or other oxide polish on felt wheel



Start with the 100 grit wheel (180 for softer stones. Ones with a hardness of 5 use a light touch to rough it out, then move to 325). Make sure water is dripping near the center of the wheel.



By hand cut the bottom flat, small flat spot on top, and rough spots on the sides. Make sure you cut

around 1/8" on the sides, this will be for the bezel when you set the stone.



Now your shape will start to appear. (bottom of stone)

Tip: If you are cutting different types of stones, start with the softest and move to the harder. This will avoid scratching the softer stones.

Clean Disk



It is always best to clean your wheels when done. This will make cutting easier and avoid scratches if you start with a soft stone next time. Wet wheel, scrub with toothbrush, then spin dry.

Time To Dop



If you use a dop pot, turn it on and let the dop wax melt. When the wax is ready place the stone (top

down) on the flat area of pot and put a drop of water on the stone. When the water evaporates it is hot enough to take the wax. With one hand, put the one end of the dowel in the wax. Next **WET YOUR FINGERS** (you will get a good burn if they aren't wet) on the other hand. When you pull the dowel out the wax, it will want to drip, so quickly move the stick on to the stone and press wax down to with **WET FINGERS**.



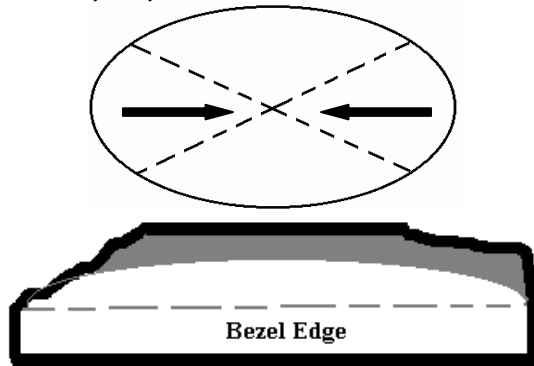
If you don't have a dop pot, you will need an alcohol lamp and a way to heat your stone. I use an old iron held upside down in a vise. Place a piece of foil over the flat side. Heat one end of the dop stick with the alcohol and wipe on dowel. Heat your stone with a drop of water on the stone. When the drop of water starts to evaporate, heat stick over lamp. When then wax wants to drip off, wet fingers and apply stick to stone.

Rough Cut On Stick

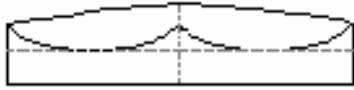


With the 100 or 180 grit disk slightly cut the sides in for the bezel.

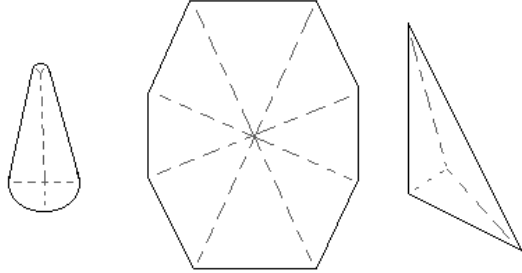
Now come the confusing part. You will be cutting the dome as if it was a square stone. Once you have done it, it is a very easy method.



Imagine a line going around your stone from your lowest bezel cut on the side. Now you want to make 4 curved cuts from edge to center. Looking down on the stone you will see an X on the top. From the side view, keep checking the curve of the dome is what you want.



Now just cut the high areas above the bezel edge, working from edge to center. Removing the lines you just made until you get a nice round dome.



On odd shaped pieces, you might not have the X, just remember where the lines meet is the high spot. Cut from edge to center.

Tip: Use a bright light or sunlight to check your progress. Rough stage, moisten stone and see how the reflective light dances over stone. The light should move evenly across the stone.

Smoothing & Polishing



This is just a matter of making little scratches out of big ones, until you don't see them anymore. You may have to keep working the bezel edge & the dome until you get to the shape you want. After the 325 grit it's just a matter of checking for flat spots with light & taking out scratches. Eventually you will actually feel the flat spots in the stone through your wrist. I think of it like peeling a potato, at first it will grab & release, but soon it will cut the layer nice and smooth. At 600

grit you can start doing a little rocking & rolling, smoothly rock the stone back & forth and side to side.

The Diamond Paste: Squeeze 1/4" line of paste on your finger and smear it on the felt pad, 1-3 times (not necessary each time), add just 3-5 drops of water around the wheel. And cut the same way as above. If the paste sticks to the stone like toothpaste it needs a light mist of water to thin it up. If comes up like specks in water it is too thin, just keep working the stone and it will thicken.

Oxide Polish: Polishing the stone helps seal & preserve the stone. Spray a mist of water on the felt wheel until damp. Work in a small pinch of polish (not necessary each time). You work the stone just like the diamond paste, if the paste sticks to the stone like toothpaste it needs a light mist of water to thin it up. If comes up like specks in water it is too thin, just keep working the stone and it will thicken.

Taking The Stone Off The Stick

Just pop it in the freezer for 10-20 minutes & you can just add pressure to the bottom and it will pop off. While the stone is still cold you can pick off any dop wax that is left.

Happy Cutting!!!



References:

- Gene Chapman (cutting technique of my father)
- Phil Salm
- And many others