

MAKING A CABOCHON by John White

If you have ever looked in a jeweler's window or looked at some of the cabochons displayed on eBay or Etzy you may have wondered how they were shaped and polished.

You may have thought it was difficult. It is not.

The machinery for making a cabochon need not be complicated, after all early man managed to shape stones with not much more than a flat stone and sand.

It must however have taken them a long time to produce a satisfactory result.

Today we have access to off the shelf combination machines which can be expensive, or with a modicum of practical ability a simple flat lap can be constructed powered by an ex washing machine motor.

Even without machinery it is possible to shape and polish stones using diamond pads, but it can take a long time to produce a satisfactory result.

FLAT LAP MACHINE



COMBINATION MACHINE



Having access to your chosen way of producing a cabochon your next step is to choose the stone you wish to cut.



SUNDRY MATERIALS

It might be a found stone, a flint, an agate or a bought stone. Stones are not always flaw free and if there are cracks or cavities you may suddenly and unexpectedly find a piece falling off as you cut or polish. Careful inspection will reveal any cracks or other imperfections which will need to be avoided.

I must also warn that some stones do not readily take a polish but you can usually only tell with experience. Decide on the shape and size of the cabochon you want to make. Cut the stone so that you have a slice, or slab, that is slightly thicker than required for the finished stone.

If you intend to set the cabochon in an existing or bought mount the size will need to be accurately measured and marked on the stone using an aluminium pencil and a stencil. If the slice is too large it will need to be reduced before finally grinding it down to the marked outline.

Much excess can often be cut off using a diamond saw, but on other occasions simply grinding away the surplus will be easier. Off cuts can sometimes be turned into ear rings. Some material is both expensive and rare so small pieces can be worth saving.

TEMPLATE & SCRIBE

MARKED SLAB



Do make sure that the face that is to become the dome is the most attractive before you start to cut. Patterns often do not travel through a stone and making the wrong choice can lead to disappointment. Having made your decision, and cut the stone to the desired shape the back should be ground flat and polished.

It is common practice to make a slight chamfer to the edge of the stone to aid setting. The flat surface will aid adherence to the dop stick. A dop may be a piece of dowel or even a flat head nail if the size of the stone is small. The purpose of dopping is to ease the formation of the dome, whether a high dome or a low one. I do not recommend holding the stone in your fingers as you are shaping it.

Laps and wheels can quickly cut fingernails.

Dopping is usually achieved by heating dopping wax and creating a base around the dop to which the stone is to be attached. An alternative method I use is Gorilla super glue. It is quicker and more reliable, but releasing the stone when finished can be difficult.

Assuming you are going to use wax, once the wax is on the dop and still pliable press it onto a cold flat metallic surface. This will give maximum contact with the base of the stone. It is important to give the stone as much support as possible by making good wax shoulders.

Before dopping the stone needs to be gently heated to avoid cracking. This can be done on the top of the heater as it is turned on, but do check beforehand whether the stone is heat sensitive. If it is use super glue. The stone must be fully supported by the dop wax shoulders.

With the stone attached let it cool slowly. When set the stone will take quite a lot of pressure, but be aware that stones can come unstuck and be damaged if they get too hot during the grinding process. Ensure the stone is kept cool by having water dripping onto the grinding wheel or lap.

Take the stone away from the lap or wheel periodically to check progress, to cool, and to determine any corrective action required. Remember if you grind too much off you cannot put it back!

ELECTRIC HEATER AND METHYLATED SPIRIT HEATER



WAX DOPPED STONES



There are several ways to shape a stone. One is to use a flat lap with silicon carbide grit or, if affordable, a diamond sintered flat lap. You should start by using a coarse grit on the plain flat lap.

You could also use a coarse grit grinding wheel, or a diamond sintered wheel. Whilst quite expensive a diamond wheel will last a long time.

Shaping the dome is best done using a circular motion of the dop stick. You will need to check frequently that the stone is being cut to the required shape. As you near the desired shape you should change the lap or wheel to a finer grade. You must make sure that the cabochon is free of any of the coarse grit to avoid contamination of the new lap or wheel.

As the dome is ground to shape keep a look out for flat spots. A preliminary light polish will highlight imperfections. Once any imperfections have been removed final polishing can start.

It is very important that laps or wheels are not cross contaminated; otherwise subsequent stones may be cut or scratched and not polished properly.

Sometimes a stone will have varying densities within it and this can lead to undercutting. You will have to decide whether to persist in trying to achieve a smooth finish or simply accept that no further improvement is possible.

Polishing can be done using a leather faced lap or a felt lap. Where a felt or leather lap is to be used cerium oxide or tin oxide can be usually be used as polishing agents.

You will need to experiment to find which is best for particular stones. Quite a lot of heat can be generated during polishing so care is needed to prevent the wax softening and the stone detaching, or sometimes cracking. Soft stones like opal crack very easily if they get too hot.

I normally have water dripping onto the lap to help keep the stone and wax cool. Having polished the stone, remove it from the dop and you have finished.

It does however make good practice to keep your equipment clean after use.



**FINISHED
CABOCHONS**

Suggested Reading: Cabochon Cutting by Jack R. Frost

The Lapidary Manual by Herbert Scarfe

Videos: Several videos are available on YouTube.