

Making Calibrated Round Cabs

by John Pesch



Occasionally I have the need to cut an accurately sized round cabochon. Whether for a factory made jewelry setting, calibrated hand-made settings (i.e., tube), or inlay for trumpet valve buttons I always found this to be one of the more difficult and frustrating lapidary tasks. During my search to find a better way I found a method that makes the job easy. The following is a culmination of a discussion with Daniel Lopacki, tips from his website, and trial and error.

Equipment

- Slab/Trim saw
- Bench Grinder/Polisher
- Flexshaft Unit or Dremel Tool (preferably with flexible shaft attachment)
- Various sized nails for dop sticks
- Calibrated circle templates
- Adhesive for dopping (super glue, epoxy, dop wax)
- Acetone (if cold dopping)

Procedure

Mark and trim slab.

Attach nail to trimmed piece as close to the center as possible.

Mount in flexshaft/dremel tool. Lightly and slowly touch the dopped piece to the grinding/sanding wheel while rotating it in the opposite direction to that of the grinding wheel. Check the size against your template often and continue to shape until desired size is achieved. Leave a little room for finer grit wheels and repeat process until your stone fits the template.

Remove the dopped stone from the handpiece and, if desired, dome it as normal.

Remove nail from the cabochon (if cold dopped) by soaking in the acetone.

Tips

Having your stone come un-dopped during the process is probably the most critical problem. This is most often caused by a poor bond during dopping, excessive vibration during grinding, or a combination of both. Following are a few tips to help prevent this:

Tips (cont.)

Make sure you have a good bond during dopping. I usually use super glue because I'm lazy and impatient. I will glue the stone to the nail and then add more glue after 30 minutes or so and then let it cure for an hour or two. Whatever adhesive you use make sure everything is clean and well cured.

Make sure your nails are straight. If not, they will beat the piece to death against the grinding wheel and possibly come off.

Make the trimmed piece as smooth as possible before dopping. You can do this with multiple cuts on the trim saw or by grinding off sharp corners and high spots. Jagged edges can cause tons of vibration causing the stone to pop off.

Start spinning the stone slowly with light pressure. You can increase pressure and speed as the profile of the cab smooths out.

Lastly,

Trim your stone a little larger than you need. It will require a little more grinding, but if it pops off early in the process you may have enough to re-dop and still get the size you need.

Notes: