

Laser Use in Making Segmented Bowls

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Introduction

I have posted two segmented bowls for which I have used lasers to make some of the bowl's elements. This article provides a brief overview of the processes involved in using the laser. I used a CNC to make some of the bowl elements – this use is described in another article “CNC Use in Making Segmented Bowls.”

Because file size restrictions, “Another 50th Anniversary Bowl” images are shown in Attachment A to this article.

A year or so ago I made two wooden clocks. For the first clock I used the laser to engrave numerals on the wheels and for the second, photo at the end of the article, I used the laser to cut the veneer for the clock dial.

Lasers provide a very easy and fast way to engrave a variety of materials, including wood. I initially used a laser to engrave a medallion glued inside the 60th Anniversary Bowl. For “Another 50th Anniversary Bowl”, shown below, I wanted fairly complex figures on the accent rings that couldn't be done with gluing pieces of wood together. It is the engraving implementation that I describe below.



Laser Implementation

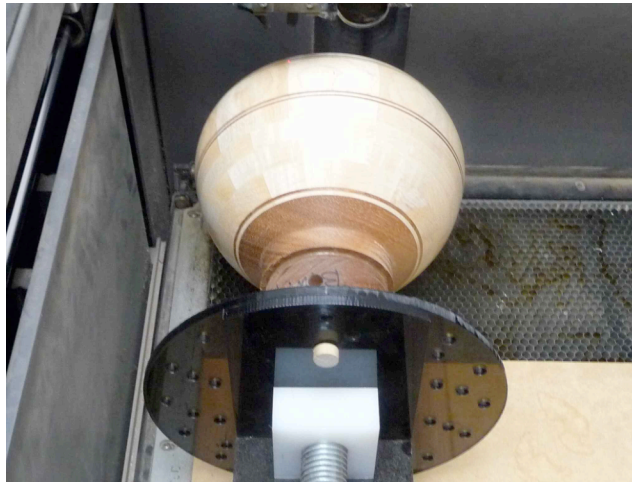
I use VectorWorks on an old MAC for bowl designs. The accent ring figures were from clip art found on the web, imported to VectorWorks, and modified. The segment outline, oval, and each figure were saved to individual PDF files. The center medallion was also designed in VectorWorks and saved to a PDF file.

I make segmented bowls in two pieces, top and bottom, and then glue them together after the insides are finished. Then I finish the outside shape and do final sanding. I decided to do the engraving on the bottom before the top and bottom were glued together. If there was an engraving problem, I could cut the accent ring down and try again or in worst case cut it off and glue a new one on.

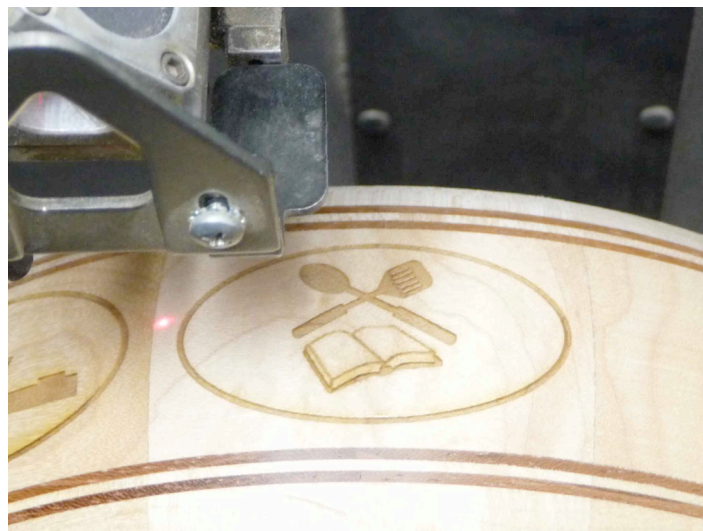
The engraving is very shallow; therefore, I couldn't do any accent ring shaping or sanding after the engraving. To make sure the top and bottom stayed aligned before engraving, I glued additional ring on the top and made it a tenon fitting into the bottom.

With the top and bottom held together with the tenon and double-sided tape, the outside was final shaped and sanded. I had to do only minor shaping and sanding, not on the accent ring, after the top and bottom were glued together.

I made a jig to hold the bowl during engraving. It has a shaft with the same threads as the lathe arbor and an index wheel with holes for 10, 12, and 16 segments.



The laser is aligned to the bowl via a pointer that was placed in the upper left-hand corner of each segment.



The laser acts just like a computer printer with laser unique parameters set in printer setup. For engraving the laser power and speed are specified which vary according to wood and desired engraving dept. For each segment, the laser pointer was set to the

upper left segment corner and the appropriate PDF file was sent to the laser and segment was engraved.

Conclusion

Certainly lasers are not readily available to everyone. Although, I'm surprised by the number people who do marquetry and have personal lasers. I have access to an Epilog Laser through my membership in the Sawdust Shop in Sunnyvale, CA. The Sawdust Shop is a complete woodworking shop with excellent support staff. At least in the San Francisco Bay area, membership shops are becoming popular.

Lasers are a great way to add engraving to a project. It is simple and straightforward. The learning curve is minimal. Availability is certainly an issue, but I believe in the future they will more available and affordable.

