

Make Your Own: Agate Stripping Guides

By Eric Ryan

I finished my first bamboo fly rod—a Nunley 504a. I remembered seeing an image somewhere on the Internet of a professional rod maker's tools for making his own agate stripping guides. Although I could not find this image again, it stuck in my head and I decided to tackle the problem myself. This article will show you how to make your own agate stripping guides with some basic supplies and a drill press.

The processes that I am about to describe come from the lapidary arts. Lapidary is a fancy word for jewelry making which includes stone cutting and metallurgy.

To make the polished agate ring, I started collecting polished agate slabs from the rock and mineral stores in my area—Consolidated Rock and Mineral in Vacaville CA (707-448-5525) and Pearson's U.S. Lapidary and Jewelers Supply Inc. in Sacramento CA (916-331-2086 or on the Internet, www.pearson-uslj.com). These pre-cut and polished slabs ranged from two to four inches in diameter, and were about one eighth inch thick. They were between one and eight dollars each, and many rings can be made from each slab.

It is a good idea to cut out a paper template of the agate ring, and mark the area of the agate slab on both sides with a thin black Sharpie. Use back light through the transparent slab for alignment. I found that it was best to bore down half way through the slab and then finish the cut from the other side. The boring is done at low speeds (475 rpm) on the vertical drill press. I used K&S stainless steel tubing from our local Ace hardware—one half inch for the outside, and three sixteenth for the inside hole, both two inches long. I run the tubing in a 220-graded silicon carbide grit and water slurry. The raw grit is available from either of the above suppliers.

Starting with the center hole, chuck up your three sixteenth inch tubing with about half an inch sticking out of the chuck. Position your agate slab on a piece of wood and align the center ring mark about one half inch below the tubing. Hold the agate slab and wood in position with your left hand, and turn on the drill press. Throw a pinch of your silicon carbide grit on the spot and add a couple of drops of water with an eyedropper. Starting the hole is the most difficult part of the process because the tubing can walk on the polished surface. Slowly bring the tube in contact with the agate surface with many light taps. Once a well is created, more pressure and longer intervals between taps can be maintained. Use your sense of feel and hearing to guide you. You can add another pinch of grit if you feel that the first batch is losing its edge. Moving the slurry around with a Popsicle stick helps too. The bit must never be allowed to run dry, or you will surely crack the stone. Tap, tap, tap, tap—practice and patience will prevail. When you feel you have made it half way through, turn the agate slab over, and bore through the other side to finish the hole. This is where careful alignment of sides is important.

It is best to radius and polish the inside of the hole at this time. Make a three-inch long mandrel from a



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piece of five sixteenth stainless steel rod by grinding or turning the desired shape into one of the ends. Chuck up the mandrel and place the agate hole directly below it. Fill the hole and surrounding area with the 220 grit and water and agate the radius slowly. This process seems easier than boring the hole. When you get close to half radius, flip the agate over and grind the other side. Stop the drill press, and remove all grit from the agate, wood, and mandrel. Repeat the process with 500 or 600 grit silicon carbide to remove the coarse grit marks. To obtain a glass like polish, run an eighth inch-shank hard felt tip with aluminum oxide powder polish on either a Dremel Tool or the drill press. The felt Dremel tip is available from most hardware stores and Pearson's.

Chuck up the half-inch tubing and cut out the ring. Work one side of the slab and then the other. Starting very slowly with the same technique as you used before. Alignment is critical so as not to get the hole of the ring off-centered. When you get the ring separated from the slab. With a sanding block, run 220 grit wet and dry (silicon carbide) sandpaper over the sharp outer edges to form a slight forty five-degree chamfer. The ring is strong, but will shatter if dropped. Be careful.

I used traditional nickel silver for the metal work—30-gauge sheet for the bezel ring, and 0.040" hard pinning wire for the frame. I got the sheet from Pearson's and the wire from The Golden Witch. Cut a strip of the sheet with sheers. This strip should be slightly wider than the agate slab was thick. Form a ring by bending the strip around the half-inch stainless tubing. Cut and do the final sizing around the agate ring. Create a butt joint that just touches when pulled tight around the ring. Do not solder around the stone, any heat will shatter or craze it. To silver-solder, I used a standard propane torch, "medium" silver solder, and Batterns self-pickling flux. I use a hemostat mounted in a vise for a third hand. Bend the framework with round nose pliers and solder each piece making sure not to heat up the last joint. Griffith nickel pickle is useful to remove stubborn oxidation. Finish grinding, buff and polish the frame with a rag with Semichrome or rouge on a buffing wheel. Pearson's has all your silver-soldering needs.

The agate ring should press into the bezel ring just snug. I epoxy the ring just in case with Devcon Two-Ton epoxy. I also burnish the bezel onto the chamfered edge of the agate ring and wipe the remainder of the glue off with MEK or Alcohol. When the epoxy is cured, scrape off any stray glue, and give the piece its final buff.

This is a long process, but proficiency comes with practice. I now make the complete agate-stripping guide in about three hours. I think that if I were to make five at a time, I might be able to get it down to two hours each. Be creative, look around for local supplies, and good luck fishing.

Basic bill of materials:

- ◆ Drill Press
- ◆ 12"x 0.500" OD x 0.025" wall stainless steel tubing (other size to suit need)
- ◆ 12"x 0.200" OD x 0.025" wall stainless steel tubing (other size to suit need)
- ◆ 12"x 0.375" stainless steel bar stock (All SS is K&S brand—hobby shop music wire suppliers)
- ◆ 1 lb. each 220 and 600 graded grit silicon carbide powder.
- ◆ 1 lb. aluminum oxide polish.
- ◆ 0.150" to 0.200" Agate slab
- ◆ 30 gauge nickel silver sheet or bezel
- ◆ 0.040" hard nickel silver "pinning" wire
- ◆ Propane torch from hardware store
- ◆ Batterns self-pickling flux
- ◆ Griffith nickel pickle
- ◆ "Medium" silver solder (any grade will do)
- ◆ Bullet shaped hard felt Dremel bit
- ◆ Fine tipped Sharpie pen
- ◆ Some form of metal polish (Semichrome, rouge, etc.)