

Bubble Free Casting of Snake Skin Blanks

Vacuum and Pressure. Pressure and Vacuum. Ultrasonics, Vacuum, and Pressure. Ultrasonics, Vacuum, and Pressure....Yikes! I've been casting snake skin blanks for several years now. I started off casting in blocks and cutting them into individual blanks. But I was having problems from what I think was the heat generated by the chemical reaction of curing polyresin. After researching I started using vacuum to help degass the resin prior to casting. Then I discovered the use of pressure vessels and I suppose Harbor Freight has sold more of them in the last 2 or 3 years than the did in the entire decade prior. The casting process I once used can be seen by reading my tutorial on snake skin casting. It is on all of the pen forums or on my website: <http://www.RedRiverPens.com/articles> I still prep the blanks the same way. All that has changed is the actual casting process. No more vacuum and no more pressure!! Wow, how much simpler it now is. How much more fun I now have. How much quicker they are finished. But most importantly is the improved success rate. I'll not go into details of the failures...but there were many.

Here are the changes I've recently made:

(1) Molds: I use silicone rubber molds.

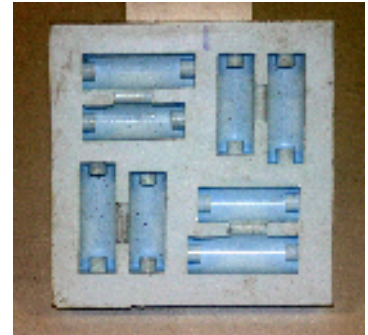
(a) One style has slots for individual blanks. I no longer use BB's to fill the tube. I now use clay...or at least I was. I've stopped using clay and I no longer glue the corks. I still use the wooden standoffs (as I call them in my article) and cut them just a little large and they work well to hold the blanks in place and keep them from floating.

(b) Another style, called the resin saver mold, has slots for each blank and built in stoppers. The actual mold slots are round and just bigger than the finished pen blank. Hence the name: resin savers. I've also stopped using the resin savers

stuffing the tubes with clay also.



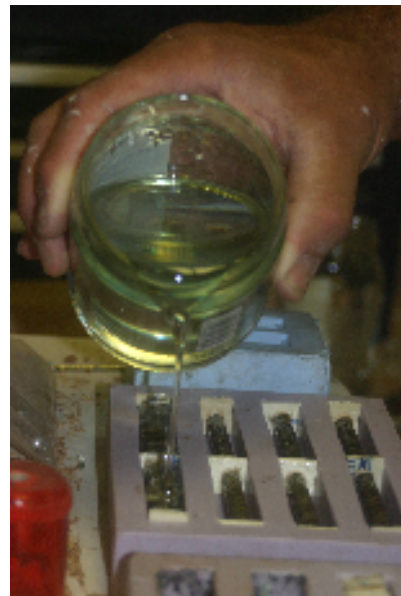
The mold on the left has the individual slots as described in (a) above. The mold on the right is the resin saver mold as described in (b). I recently made 4 jr statesman blanks, 10 sierra blanks, once cigar set, and two slimline sets using just 14 ounces of resin. All but the slimlines were using the resin saver molds.



- (2)** No vacuum and no pressure making casting more fun and quicker. Thanks Barry! It was Barry Gross who encouraged me to stop using both of these and cast sans vacuum and pressure. He has an excellent casting article in the current edition of Woodturning Design.
- (3)** Ultrasonics: I now use an ultrasonic jewelry cleaner to help remove air from the polyresin. I use hot tap water in the cleaner and turn on the heat function on my cleaner. I have found that some brands of resin will start to jell quicker than others when heated. So you may want to be quick the first time to see how your brand of polyresin behaves. The cleaner I have came from Harbor Freight. Here is a link to the one I have: <http://www.harborfreight.com/cpi/ctaf/displayitem.taf?Itemnumber=95563> It sells for \$79.95 and as I type this article it is on sale for \$59.95. It is item number 95563

- (4) No more packing the tubes with anything. I had once used BB to keep the tubes from floating casting in tub type molds. Using mold (a) from above and the wooden standoffs cut a little bitty bit larger than needed made them stay in the slots and not float. I did start packing the tubes with clay to get air out but I no longer use the clay for either mold type. I also do not glue the corks when using them.
- (5) I paint the skins with polyresin after the skin is glued and as I place them in the molds. I let the resin soaked skins sit in the molds while the polyresin is zapping in the cleaner. I think the resin soaks into the skins and expells any air that may be in the skin. The scales on the snake skin are also removed.

The resin is zapping in the cleaner. The skinned tubes are soaking up the polyresin in the molds awaiting their fate: to be forever encpsulated in clear polyester resin and live the good life as pen barrels. What a life! The catalyst (MEKP) is now added and gently stirred to mix. No time to waste. Pouring into the molds should start immediately or a jar of jelled resin may miss it calling. Slowly pour the resin into the molds. I pour directly onto the skins and slowly fill each mold cavity



Any air bubbles introduced while stirring or pouring the polyresin into the molds will quickly start to rise to the top. Now comes what I call bubble manipulation. I use a dental pick to poke around in the resin to move bubbles away from the skins. They do not need to be moved totally to the top or sides and they will end up on the floor with the rest of the resin. They just need to be moved away from the skin. I also used the curved dental pick to make sure no bubbles are trapped or lodged under the tubes. Move quickly to patrol all of the slots in the mold. I usually only cast one mold at a time which contains 8 slots for 4 sets of blanks.

Notice the blank at the bottom of the next picture...the one on the left. It is a shredded money blank and I use the same techniue on it. I often prepare more resin than I will need for the snake skins and cast a block of shredded money or coffee beans at the same time.

I also make label blanks the same way as I do snake skins. After painting the tubes and attaching the label with the printed art work I treat them as I do snake skins...except I don;t apply resin to the labels to soak as I do the skins. I just don't think this step is needed for labels...but labels will be another

coming article soon. I have several to make in October and I'll take pictures and add comments. So, stay tuned...



Bubble manipulation using dental picks. Work quickly and move any bubbles away from the skins. Get them far enough away that they will be turned off when the blanks are turned. Having bubbles in the blank is OK...just not next to the skin.



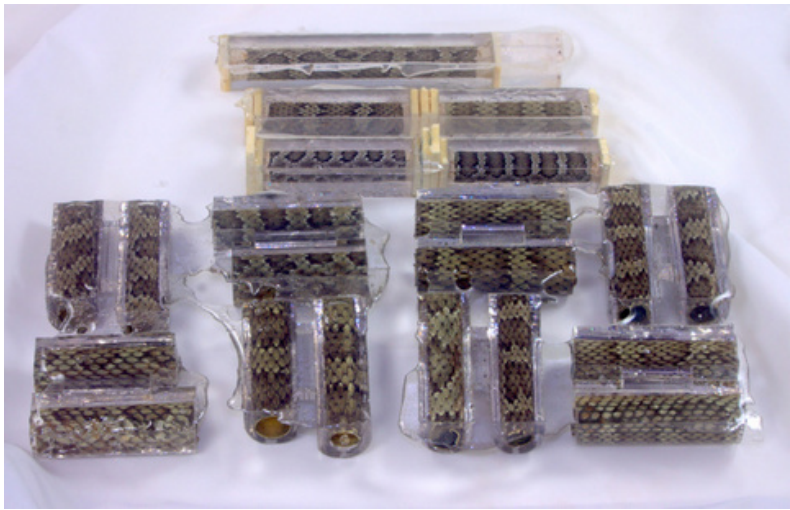
Now the next thing to do is wait...wait for the resin to cure. The surface exposed to the air will be sticky but will cure after a day or so. I often take the blanks out of the mold and sit them in the Texas sun all day and they are ready to turn. I do not post cure by placing the blanks in an oven. I tried that but the skins did not like that...they came out totally worthless and unuseable. Post curing in an oven may be satisfactory for solid blanks but I would not suggest it with skins or labels.

The finished blanks still in the mold are shown in the picture at the right.

Harbor Freight Ultrasonic Jewellery cleaner with a jar of resin being "cleaned".

Blanks ready to be separated, have their ends squared (be careful) and meet their destiny.





One pitfall is squaring the ends of the blanks. There must be no slop in the pen mill shaft. If so, the cutter head can tilt and chipping off a chunk from the end can happen. DAMHIKGT I still use a pen mill but I also use a disk sander. Care must be taken to keep sanding dust from getting between the resin and skin on the ends. A CA seal using thin CA on the ends has worked for me. Dust can contaminate the ends during turning and sanding also. I seal the ends when I square with a pen mill also.

I hope I've not omitted any importan info.

Now it's your turn. Good luck and happy casting.

Do a good turn daily!

Don

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The molds are sold my two members on IAP. NewLondon88 sells the resin saver molds for several kits. Gadget and modlemaker sell the molds with the slots...or they once did. Check the classiffieds on IAP or contact them via the PM feature there: <http://www.penturners.org>

Barry Gross sells a casting kit containing the needed supplies for casting pen blanks. The kit can be seen at http://bgartforms.com/pen_kits_&_accessories.htm

Gallons of polyester resin are available from <http://www.uscomposites.com> They also sell starter kits of dyes., Five gallons are also available. If you live in a larger city you may find a source locally. You need to ask for clear casting polyester resin. Silmar 41 is an excellent one to use.

Composites One at <http://www.compositesone.com> also sells polyresin.

I have purchased from Douglas and Sturgess Art Supply at <http://www.artstuf.com>

Other suppliers can be found by searching the net. Michaels and Hobby Lobby have quarts and occassionally gallons, but it is expensive there. Look for a 50% off coupon in the Sunday paper or online and a quart or gallon can be purchased quite reasonably and this is good source for the first can or two to see if casting is something you want to pursue.