







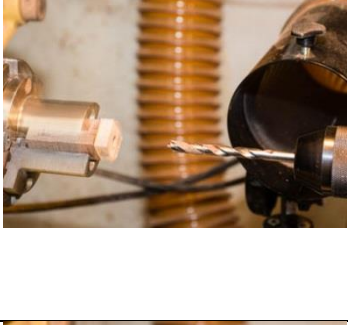


Turning an Acrylic Pen



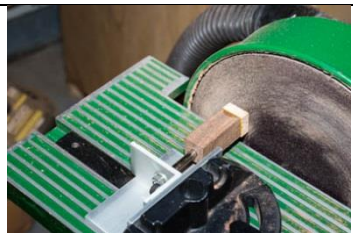

Cut Blank

1. I prefer cutting my blanks on the Bandsaw since there is much less waste due to the size of the kerf on the blade.
2. For 7mm pens (e.g. Slimline, Designer/Euro etc.) blanks should be $5/8" \times 5/8" \times 5"$ – going larger is generally a waste of material
3. **Take a moment and inspect the blank and plan out how you are going to place the top and bottom of the pen to best show off the blank.**
4. Use the jig to cut the top and point sections of the blank.

<p>Mark the Top of the Pen (T) and the Witness Marks overlapping the cut to facilitate future grain alignment</p>	
<p>Top of Pen is a fixed length ($2 \frac{1}{8}"$). <i>This gives $1/8"$ extra in case of damage during drilling.</i></p>	
<p>Flip the remaining portion of the blank so the Witness Marks align to the mark for the Point length ($2 \frac{1}{2}"$). Mark this piece with a (P). <i>This gives $1/8"$ extra in case of damage during drilling.</i></p>	
<p>Leftover section can be saved and used to support drilling out the blank to avoid blow-out.</p>	

Drill, Paint, and Glue in Tubes:

<p>Drill blanks at about 500 RPM (wood) or 200 RPM for Acrylics (if possible).</p>	
<p>Make sure you use a 7mm. drill bit. I recommend Pen Jaws (Nova, Vicmarc etc.) or the Penn State Penn Blank Drilling Chuck.</p>	
<p>Use the leftover piece of the blank to prevent blow-out by putting it below the section to be drilled.</p> <p>Drill the Top-Blank of the Pen. Always start with the end with the witness marks. Drill slowly and frequently back out to clear the drill bit. Blanks should not too hot.</p> <p><i>Don't drill all the way through the leftover piece—keep an eye on your overall drill depth.</i></p>	
<p>Flip the leftover piece to provide a fresh drilling surface. Drill the Point-Blank of the Pen.</p>	
<p>Top-Blank should be 2 1/8" long and will take a 2" brass tube that has been roughed up with sandpaper to give the glue a bite.</p> <p>Point-Blank should be 2 1/2" long and will take a 2 3/8" brass tube that has been roughed up with sandpaper to give the glue a bite.</p>	
<p>Decide if you are going to paint the inside of the tubes using an acrylic or model makers paint. Most of the blanks we are casting are somewhat translucent and painting the inside of the blank will affect the overall look of the pen</p> <p><i>Test fit the brass tubes to make sure they slide in smoothly before painting.</i></p> <p>If you are going to paint the tube, do several thin light coats rather than 1 heavy one. Let dry 20-30m between coats. If the</p>	

<p>coat is too heavy, the tube may not insert properly. Sand the paint back with a rolled up piece of sandpaper if necessary.</p>	
<ul style="list-style-type: none"> • Use Medium-Thin CA Glue • Top-Blank – Insert starting at the wooden band • Point-Blank – Insert starting at the witness mark. • Put glue on the end of the tube that is first inserted, twirl the tube, move it in-and-out to insure glue coverage. • Tube should end up flush (or just below the wood). • Spritz with Accelerator and let dry for at least 5m 	
<p>Use a 7mm Barrel trimmer <i>on a drill press if possible</i>. Be careful to keep the drill speed around 500-800RPM to avoid generating too much heat and loosening the tube.</p> <p>Alternatively, you can sand blanks using disc-sander and miter gauge just until you can see the outline of the brass tube (<i>only if you are sure your setup is aligned and squared and your blanks are squared as well</i>).</p>	
<p>Alternatively, you can also use the Penn State Universal Pen Blank Squaring Jig and your disc-sander (<i>only if you are sure your setup is aligned and squared</i>).</p>	
<p>After the blanks are trimmed they should look something like this. The ends should be flat and square to the tubes and the tube brass should be visible.</p>	

CA/BLO Finish for Fine Pens

Mount bushings and blanks according to the pen kit directions.

- [Designer/Euro Twist Ball Point Instructions](#)
- [Bushings](#)

Shape Pen as desired work carefully and cleanly leaving a good starting surface. Make sure to match the critical diameters on the bushings.

Air Pockets, chips etc.

In acrylic pens these can easily be dealt with via CA glue. Small bubbles will simply disappear with a CA finish.

Larger pockets or chips can be deal with by:

- Quick shot of accelerator to the area.
- Drop of Medium or Medium-Thick glue
- Quick shot of accelerator
- Let dry 2-3m
- Repeat as needed.

Sand with 150 grit

- a. Sand with lathe on (500-750 rpm)
- b. With lathe off, sand horizontally (along grain) to remove swirl marks

Continue Sand thru the grits (220, 320, 400, 600)

Make sure you stop lathe and sand horizontally (along grain) to remove any swirl marks before moving to next grit.

- a. Inspect blanks – make sure they are smooth, polished and perfect.
- b. Clean with compressed air and De-natured alcohol.

Apply CA Finish – Coats 1-4

- a. Folded Blue Shop paper towel works well
- b. Lathe Speed:

<ul style="list-style-type: none"> i. Variable Speed Lathes – start applying finish at slow speed (about 300 rpm) and then gradual ramp-up speed while moving the towel (to about 2500 rpm). I find the increased speed makes it easier to evenly dry the CA finish. ii. Fixed Speed Lathes – use 500 rpm
<p>Apply to each blank separately</p> <ul style="list-style-type: none"> a. 1 drop BLO and 1-3 drops Med-Thin CA glue –don't use too much. b. Lightly apply shop towel with CA/BLO to Point to the pen. Don't grip too hard—this is not a friction polish. c. Keep towel moving rapidly back and forth across wood, entire surface of blank should be lightly coated. d. Keep moving until glue has dried
<p>Coats 5-6</p> <ul style="list-style-type: none"> a. Before Coat 5 sand lightly with 0000 Steel wool to make sure surface is smooth. Some of the shine will be lost, but will be regained in the following steps. b. 1 drop BLO and 1 drops Med-Thin CA glue –final coats (5 & 6) should be thin and smoothly applied.
<p>Let CA Finish Fully Dry – 24 hours if possible</p>
<p>Final Sanding using Micro-Mesh (1500-12000, 9 pads) then Meguiars 205 Polish.</p> <ul style="list-style-type: none"> a. Wet Sand using each pad at 500 RPM – <i>protect your lathe bed from the water.</i> b. Final step use Meguiars 205 Polish to remove any remaining swirl marks.
<p>Inspect Pen Blanks prior to assembly</p> <ul style="list-style-type: none"> a. Finish should be perfect! If it isn't now is the time to sand it back and fix it. b. Assemble according to kit instructions.

Links:

- [Sanding Grit Comparison Guide](#)
- [Bill Mellberg/Greg Ketell Resin Casting Class Presentation](#)
- [Calore Acrylic Paint Set](#)