

# Pen Making

Building On The Basics



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# Getting Started



Lathe



Pen Mandrel



Drill Bit



Tools



Drill Press

Pen Turning requires some basic tools to get you started.

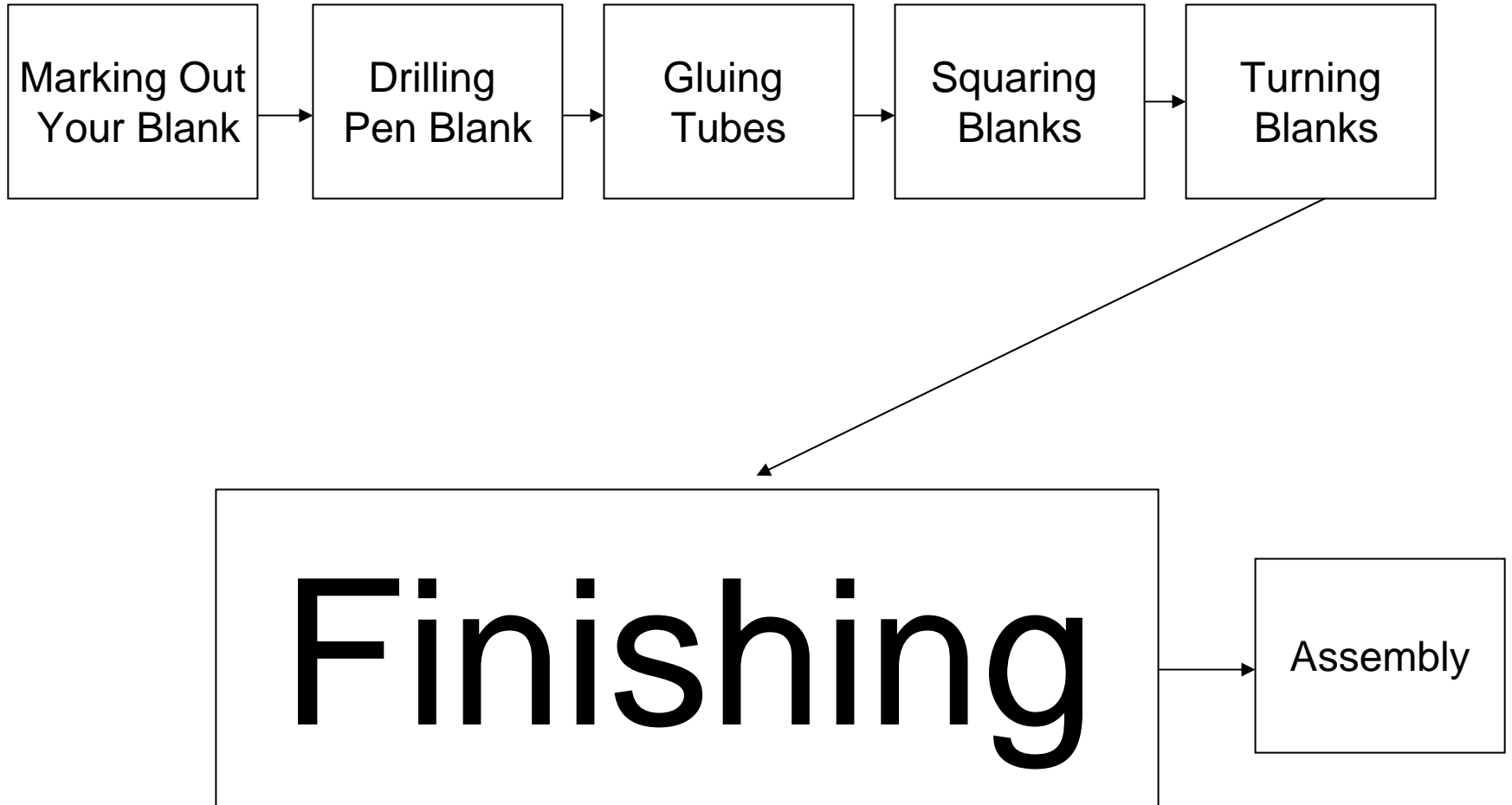
Some of these here are typical of those used by many pen turners, but not at all essential. There are always options!

You will quickly learn what works for you and what you need to make your style of pen!



Pen Mills

# 7 Basic Steps To Pen Making

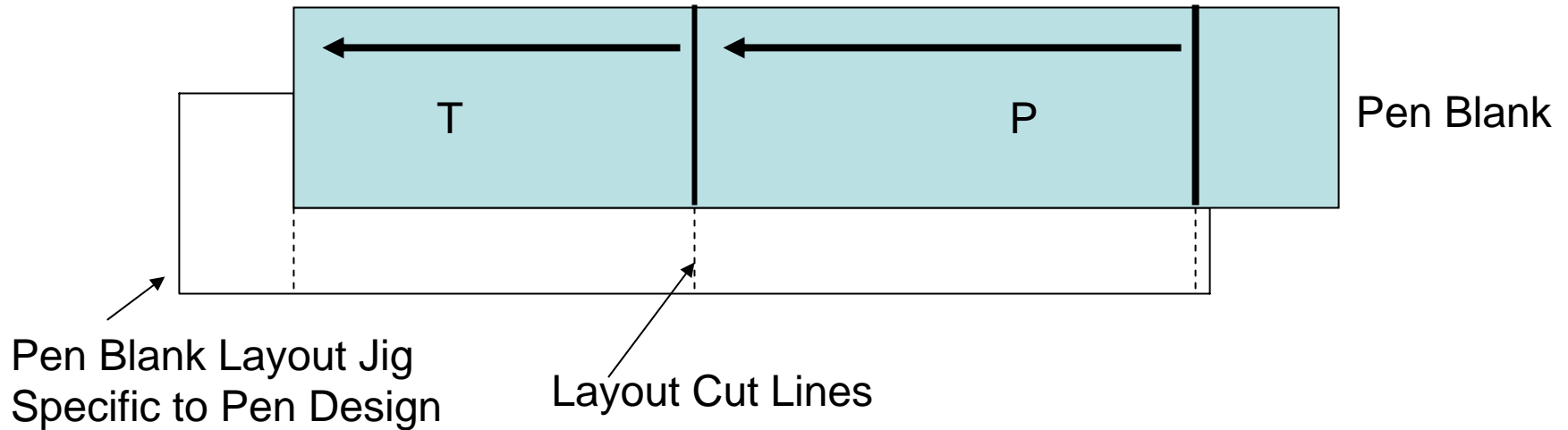


# **Layout of Pen Blank**

## **Considerations in Design**

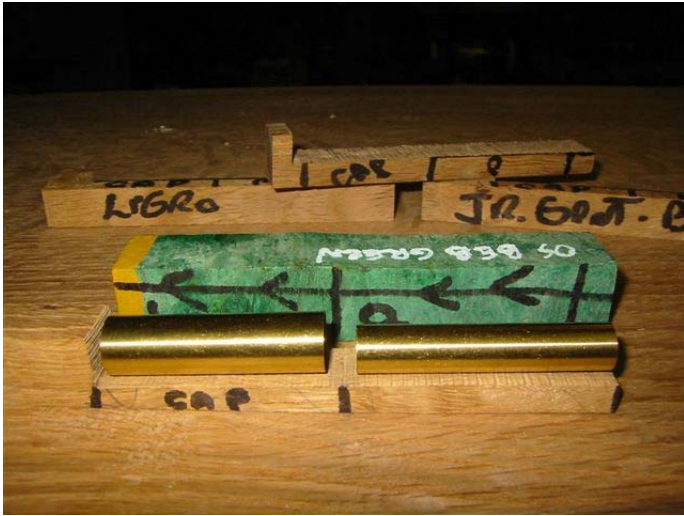
- Mark and identify the top and bottom of the pen
- Understand your hardware design (what looks good on the hardware you are using)
- Look for interesting grain or features
- Squareness of blank, ease of drilling
- Defects in the blank

# Layout Of Blank for Cut

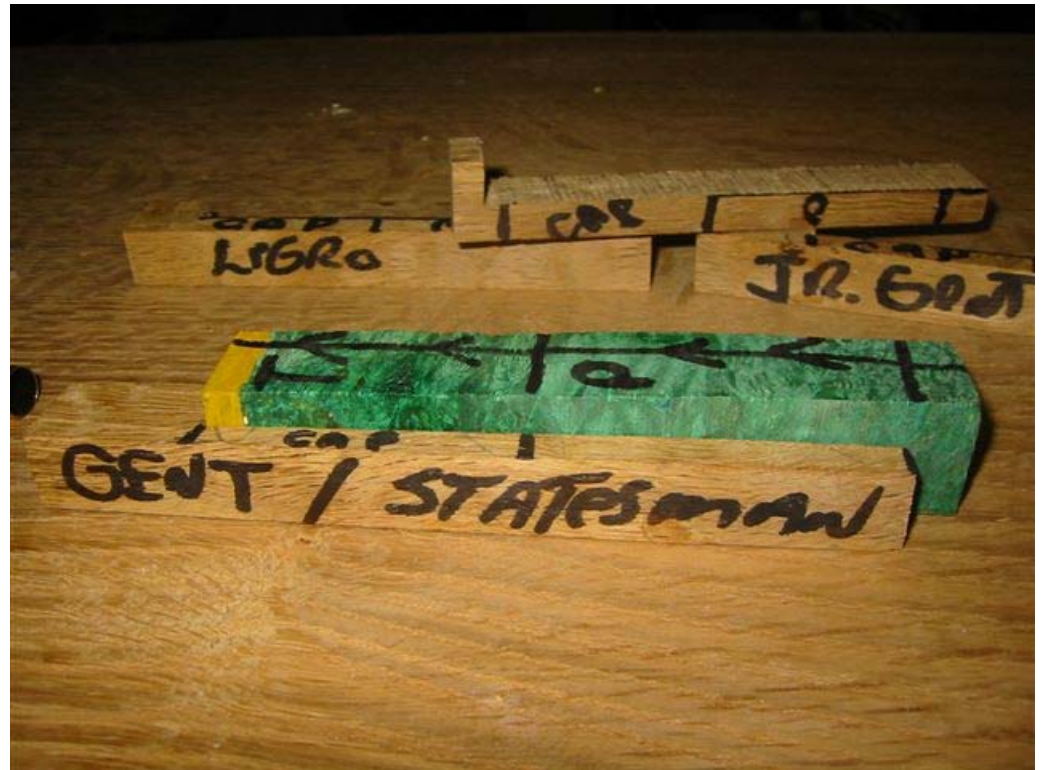


The drawn arrow on the blank helps to align the cut and drilled banks once they are on the mandrel, the arrow always points to the headstock

# Lay Out Template



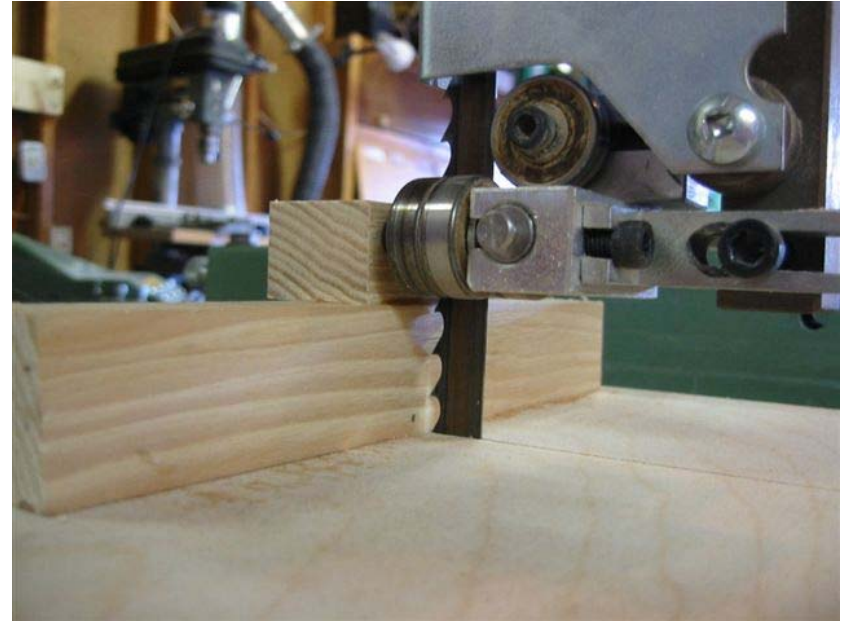
The layout of the blank should also include an extra 1/8" at either end for each piece. I allow this extra in case of drill blow out.



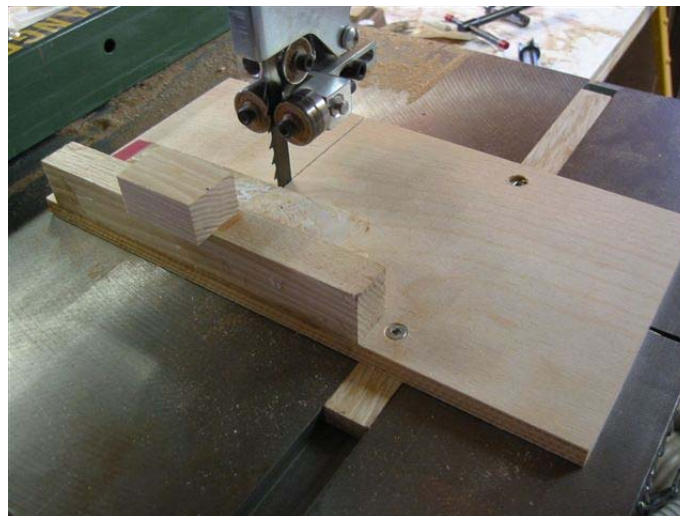


# Pen Sled

Adding a degree of control, accuracy and safety to your work

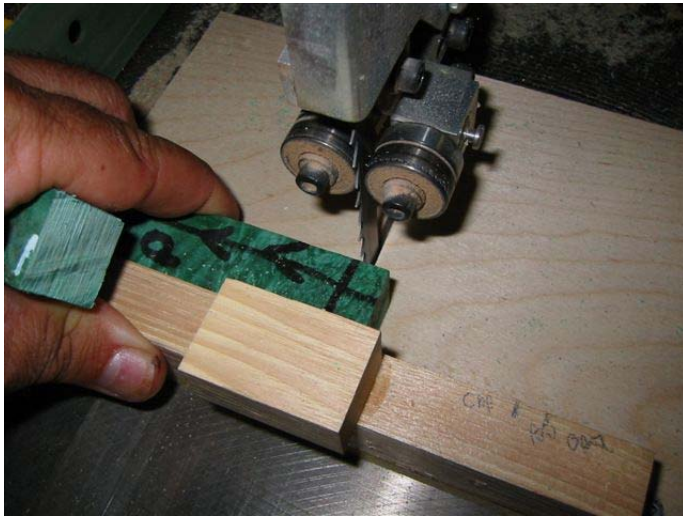
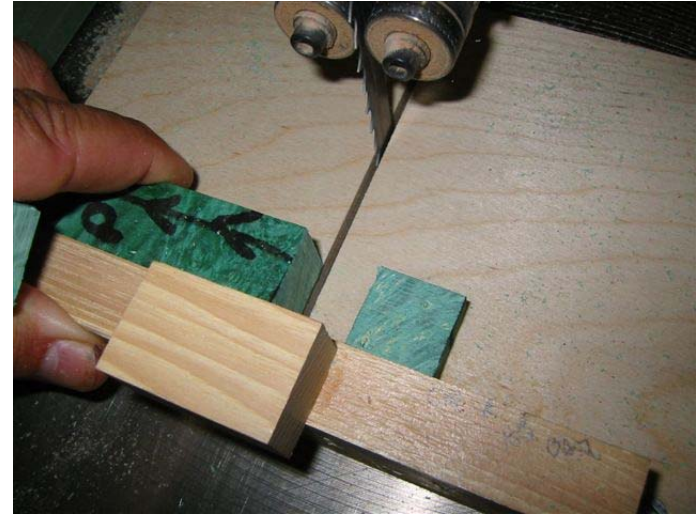


Simple to make, easily  
the safest way to cut and  
accurately trim your  
blanks, also after tube  
glue up.



Sled Design by Bob Swartzendruber

# Cutting the Blank





# Drilling Pen Blank



- Alignment of the blank with the drill bit
- Use an awl to indicate the centre of the blank
- Drill from the part line towards the end of the cap or bottom pen blank
- Feed rate is important
- Drill speeds usually about 500 Rpm
- Back out and clear your drill every  $\frac{1}{4}$  to  $\frac{1}{2}$  inch
- Heat is your enemy
- Go slowly near the end of the blank to avoid blow out

## Gluing Tubes

- Score with sand paper each brass tube, 120- 150 grit
- Apply your glue of choice to the leading edge of the brass tube (I use CA glue or 5 Minute epoxy)
- Insert the tube from the cut part line face of the blank, keeping the brass edge close to the face of the part line, this helps keep a tight grain alignment from top to bottom of the finished pen
- Set aside to cure for about 20 minutes

# Squaring Pen Blanks



Use Pen Mill to square blank ends. Slower drill speeds are easier to control. A squared end is critical in ensuring a tight and professional fit with the hardware.



A polished surface and a bright brass ring tell you that the blank is squared and ready for the lathe.

# Ready to Turn



I align my blanks with my layout lines pointing towards the head stock, I use this process to help me visualize the pen form. This allows me to keep my grain match and my pen form in the same orientation as it will appear in my final pen.



# Turning Pen Blank



First round the ends of the blank to near the bushing diameter. This will control the possibility of chip out of the blank when first being rounded. Once the diameter is reduced nearer the bushing sizes then I work from the centre to the edges or in long continuous single passes. Use light cuts as you approach your final shape, clean cuts on your final pass with your turning tool will leave a surface free of tool marks and one that is easily finished. I always re-hone the tool edge prior to my last turning pass .

# Turning Pen Blank



Turn the blanks to round before you think about refining a final shape. Once you have a spindle shape with no flat spots, make a light skim cut to see what features your blank has to offer.

# Turning your Blank To Shape

- Cut from the edges into the centre of the blank to give it a rough shape. If required, make repairs as you go using CA Glue or epoxy with shavings or wood from the same blank.
- Final shaping and fine cut should be made with a freshly ground sharp edge. You can refine your shape moving the entire length of the blank.
- Consider your hardware in the form you are creating, will there be a smooth flow of shape from the turned pen blank to the hardware....what design considerations should I keep in mind with the hardware you have chosen..these are important questions to consider!

# Finishing

- **Sanding**

- Your finishing process is about refining the surface to a final finish using a progressive series of fine abrasives and polishes. I wet sand when ever possible
- Sanding should not be about changing the form, that should be controlled by your tool work
- Keep in mind that different materials can benefit from different finishing processes

- **Tip:**

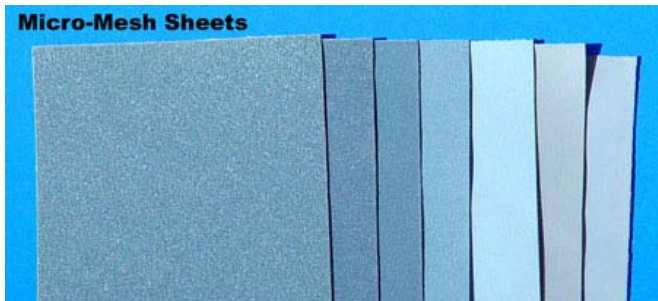
- Your process will be improved by cleaning the pen blank surface between sanding grades.
- Use paper towels



# Finishing Materials

Choosing a finishing process requires an understanding of how your materials and finishing products work best together.

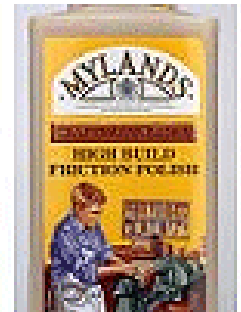
## Sanding



## Micro Polish



## Friction Polish



## Micro-crystalline Wax



# Sanding Process



Wet Sanding through the grits. Clean the surface with a cloth between grits. Wet sanding helps to keep the abrasive surface clean and avoid build up of sanding dust and also keeps the pen blank cool



To avoid marks on the work keep the sanding material moving and to avoid scaring make sure the edge of the sanding pad does not touch the work.

# Micro Polish

## Scratch Removal



Apply polishing paste to the pen blank with a clean cloth, with the lathe running. Keep the cloth moving back and forth across the blank. Back lighting while finishing will help you to see the surface and where it needs attention.



# Friction Polish



Sometimes I will use a friction polish, it helps to add a gloss look to the blank, it looks nice and is durable, but can wear down in time. I will often also use a microcrystalline wax as a final buff.

Apply friction polish to the pen blank with a clean cloth, with the lathe running. Move the cloth back and forth till the surface appears to have a high sheen, use a back light for verification of your finish.



# Assembly



Mark the part line from the cutting process of the cap and pen section prior to assembly. This ensures alignment of grain in the finished pen. I mark the cut ends so they mate back together during assembly for grain matching.



Lay out your parts and your turned blanks prior to pressing. Visualizing the pen with the hardware can help in making sure you get the right parts in the right places...take your time.

## The Completed Pen



*All your efforts should be rewarded in a sense of accomplishment. A beautiful pen speaks for it self!*

*A pleasure to make and worth the attention to detail!*

# **Suppliers and Sources of Information That I Use**

## **•Pen Kits, Blanks and Supplies**

- Craft Supply USA [www.woodturnerscatalog.com](http://www.woodturnerscatalog.com)
- Lee Valley [www.leevalley.com](http://www.leevalley.com)
- Woodturningz [www.woodturningz.com](http://www.woodturningz.com)
- Arizona Silhouette [www.arizonasilhouette.com](http://www.arizonasilhouette.com)
- Pens Of Color [www.pensofcolor.com](http://www.pensofcolor.com)

## **•Pen Forum**

International Association of Pen Turners, (IAP)

- [www.penturners.org](http://www.penturners.org)