

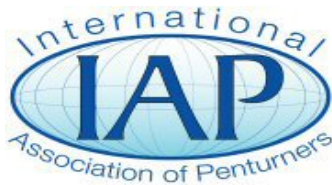
# Getting started In Penturning

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**This tutorial was downloaded from.**

**The International Association of Penturners**



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## Getting started in pen turning

**Beginners - Getting started:** "What Do I need to get started?" A common question. Beyond that, many other questions come up. Below is a summary of each topic. Each boldface topic could have whole pages dedicated to it, but again, this is an overview to help you get familiar and get started. I hope this helps to answer a few questions and point you in the right direction.

### **I. LATHES, CHISELS and SHARPENERS:**

Most any size lathe will do, but beware of a few "mini" pen lathes. Midi lathes are OK. "Mini" can get the job done but most people who have them don't like them. One exception is the Taig group of "mini" but it requires its own special set of tools.

### **PURCHASING A LATHE suggestions:**

1. Look for a lathe with **MT2 shanks**. (MT2=Morse Taper #2) These have the most common accessories for pen turning and common bowl turnings.
2. **Electronic Variable Speed or non-VS**. To some this doesn't matter. To others who love to vary the speed for turning, fast for turning down, slow for sanding or applying finish, - VS is a real time saver. You can change the belt on the pulleys but this is an inconvenience to some. To others, the cost difference is not worth it. Beware that if you invest \$200 - \$350 for a lathe, it is doubtful that you will spend \$400+ a year later for a new lathe just to get VS. Get the right one the first time.

### **Chisels - A divide here:**

- Cheap lathe sets from Harbor Freight or other cheap tool shop - Some people recommend starting with cheaper tools to see if you like turning. Some people use these tools continually without the need for the more expensive tools.
- Get HSS (quality) tools from the beginning - nothing makes good turning like having good tools that you can depend on to hold an edge!

Your choice.

- **Skews, Scrapers and Gauges**. A suggestion is to look for someone near you to help you get started - if you are a little afraid to learn on your own. There are online videos that are helpful too, just ask. In pen turning, the most popular two chisels are the Skew and Scraper. Scrapers seem to be easier for the beginner but the skew seems to allow finer control for most that use both proficiently. Lately there has been a few custom made chisels "called skogger" (on this forum) that uses small replaceable carbide blades. This acts more like a scraper and stays sharp longer. AND some argue that the nature of Carbide prevents it from being sharpened as fine as HSS or even normal steel.

Your choice.

### **Sharpeners come in many forms:**

- Diamond hones;
  - Fine Pressure Sensitive Adhesive sandpaper up to 2000 grit and more on a flat piece of glass for sharpening the tools;
  - Specialty grinders and tool holding jigs;
- Many choices and some of these sharpening devices are more expensive than some of the lathes used in turning pens.

A RAZOR SHARP tool is a necessity, and keeping the tools that way is prudent.

## **II. OTHER TOOLS - DRILL PRESS, PEN MILL, PEN VISE, PEN PRESS, PUNCH SET, CALIPERS and OTHERS:**

- **1. A pen mill or sander** is needed to make sure the pen blank and tube are square before adding the bushings and also assembling the pen. Some use a special jig to square up the ends on a disk sander, but it is necessary that the glued up blank is SQUARE for turning and assembly.
- **2. Pen vise** is necessary to hold the blank to drill an aligned hole into the blank. IF you don't use a vise, you will find that blanks will have off centered holes and you will also find that some blanks will burst/blow out! The clamping force of the pen vise will help prevent blowouts but not all.
- **3. Pen press** is a tool that presses the pens together. Some use the Drill Press, some make their own and some buy pen presses.
- **4. Disassembly Tools / Punch Sets.** Harbor Freight makes a good punch set that is used for disassembly of pens when they need to be disassembled. This does happen on occasion. Helpful also for when the transmission assembly is installed too far. PSI and others have disassembly tools also.
- **5. Calipers:** Many people learn from the beginning to measure the size of the turned blank with calipers. While it is OK turn to size based on the bushing, beware that the bushings will wear down and you will have to "guess" the size - so it is good to learn to use the calipers to measure size than the bushings themselves.  
Caliper HOW TO: The Nib end (where the ball point comes out) the center band and the clip end - measure each with a calipers, mark them down on a piece of paper and then turn the blank to that size and apply finish.  
Caliper Why: Many people turn the blank down to the bushings for size and often hit the bushing with the chisel. Dulls the chisel a little, - and in making 20 pens or so, the size of the bushing will be reduced by .01 inch, at least. BUT if you determine the size by using calipers, it doesn't matter what happens to the bushings. Also, as you sand the blank down to final size, you WILL sand the bushings a little and eventually the bushings will be .01 or .02 inch smaller than the nib, center band and clip end and it WILL be noticeable.  
MOST people consider bushings as "consumables" and the average is 1 set of bushings per 20 to 40 pens. BUT, if you use calipers, you can extend the use of bushings even longer. AND if you use "mandrel-less/turning between centers" and remove the bushings for "finishing" the bushings will last a lifetime.
- **6. Other tools and items:**
  - Small diameter **wire brush or rat tail file** for cleaning glue out of tubes.
  - **Insertion tool** for inserting the glued tube into the glued blank.
  - **Face Mask and Face shield,** - Your health and safety is everything! Dusk Collector Optional but helpful. IF using a DC system, consider **ear protection.**
  - **Rubber or other gloves** to keep glue off of hands.
- **7. DRILL PRESS** - the most used big tool after the lathe! Almost a necessity! 2 1/2 inch quill travel would be minimum. If purchasing a DP, then a 3 inch plus travel would be very beneficial. (Almost left this tool out of this.)

### **ADDITIONAL TOOLS for Expanding the creative pen base:**

**Table Saws** and **Band Saws** help in cutting blanks, squaring blanks, and segmenting. Expands the creativity!

**Pressure Pot:** For stabilizing soft woods and corn cob type of blanks; For casting your own blanks with Resins, pressure keeps bubbles down.  
(Vacuum and pressure are used for stabilizing. Pressure is used for casting resin.)

### **III. FINISHES:**

First of all, don't just purchase Store finish items just because they advertise them well and sell them! Wax finishes don't finish. Wax wipes off or wears off in a week or so. Some people like a natural finished pen and the feel of the wood, but the pens get dirty in a few months like the edges of well used kitchen cabinets near the handles. If you like the natural feel of wood and a waxed finish (or of your customer does) be sure to be aware that it requires special care to keep it clean.

There are several great ways to finish pens and each has its advantages and drawbacks.

#### **CA (cyanoacrylate/super glue) and BLO:**

Advantages - quick finish, strongest, most durable, HIGH shine; Hardens soft woods (often referred to as stabilizing), protects well. It is generally the most requested finish by the vast majority of those who sell to the public. CA is often applied with paper towel as are some of the other finishes. It is also applied in different forms for different people with Boiled Linseed Oil (Called BLO for short).

Disadvantages: For some, it has a high learning curve; the fumes burn eyes, Sticks to fingers, Burns fingers; A few turners view it as "plasticky" looking; Some people are HIGHLY allergic or become allergic after a time - causes severe flu like symptoms.

**Lacquer (Deft) and others:** Advantage - Less plasticky looking and more natural.

Disadvantage: takes 2 hours to set and 12 - 48 hours to cure for final sanding.

**Polyurethane** (hard floor type) Similar to Lacquer. On medium and dark woods gives a good sheen and warm feel.

Disadvantage: tend to yellow white/holly (one of my favorites); 2 to 4 hours to set, 24 to 48 to finish to a fine sheen or shine.

**Acrylic and acetone:** Plexiglass strips placed in a glass jar filled with acetone will dissolve. Some people use this instead of CA. Less smell and fumes, less burning of the eyes, less allergenic. Similar properties to CA in finishing. Quick setup quick finish. High shine.

Disadvantage: high learning curve for application; must make your own; Some turners say it looks plasticky.

People with considerable experience in making, finishing and selling pens will tell you that "people and pens" are MUCH harder on "finishes" than the finish of fine furniture or floors or walls. Sweaty palms and humid shirt pockets are very caustic to finishes, plus the heat in a closed car in the summer or cold winter, along with humidity changes - play more havoc on pen finishes than finishes in an ordinary house. Finishes will degrade faster on pens as a result. Therefore, the most durable of paints and finishes are recommended. Use waxes over the finishes above but not under them.

• **Sandpaper and polishes:** Many kinds of sandpaper. One thing is clear, quality sandpaper is a necessity for those that turn a lot. There are debates on whether to sand beyond 400 or 600 grit and that is up to you. Some sand up to 1000 and beyond to bring the blank to final size and prepare it for accepting the finish. One VERY popular product called "MicroMesh" can be purchased in sets that can be used many times and washed and used again. Some people use automotive rubbing compounds to polish the finish.

**IV. PENS:** Most people start with "Slimlines" because they are the cheapest. However, some consider the slimlines harder to make than other pens because of the smaller diameter and tubes. One piece pens are easy to start with such as Sierras, Aeros, Carbara, Elegant beauties. Be sure to order bushings for each model. Cigars are popular pens that many people move up to after slimlines, because they are moderately priced and offer a more advanced look over slimlines. Beware that the cigar has 4 separate bushings and they have to be done in the right order. Still, the cigar is a great pen and easy to make as long as you make VERY sure the bushings are in the right order. I am sure that others would recommend a different pen to start or use as the second pen turing stage. If you decide you want to try another, go for it.

**BUSHINGS and tubes:** When you purchase pen kits, be sure to order a set of bushings for each KIND of pen you wish to make. ALWAYS order at least one set of extra tubes for each kind of pen you order. Two sets are better and tubes are cheap, so it helps to have a set on hand.

**GLUEING THE TUBES:** Most people use super glue (CA) to glue the tubes in. IF you go this route, use Thick CA as it allows a few seconds before setting up and allows more time to insert the tube BEFORE it sticks.

Some people use Gorilla Glue but it is very messy. Must allow overnight to use. Still it is a good glue and there are advantages in that it expands and does not allow air spaces between the tube and blank - a big contributor to blowouts.

Epoxy: Use 5 minute Epoxy if doing one or two pens/ Use 30 minute epoxy if you are gluing up 4 or more pens blanks at once.

-> HINT: Find some old playdough or find some plumber's putty. Stop up one end of the tubes so that glue does not get inside the tube. Insert the puttied end into the blank. Hardened Glue inside the tube can cause big problems during assembly.

#### **Pen BLANKS:**

Too many to mention here but will note that one common question from beginners: "What is a 'Stabilized Blank'?" Stabilized blanks are blanks of wood or other natural material that have been soaked in, or pressurized with a plasticized material to make it harder so that it turns without falling apart. One other common question is "What is BOW"? BOW is Bethlehem Olive Wood.

#### **MANDRELS - TWO Sizes "A" and "B":**

"A" is for 7mm pen kits and the most common.

"B" is larger in diameter was made because of the "flex" that was somewhat common in "A" mandrels, which in turn caused wobbles and Out Of Round (OOR) turned blanks.

- **A THIRD VARIABLE: Adjustable mandrels.** The length of the mandrels have some bearing on the flex that happens and also longer ones increase the possibility of the mandrel becoming bent. Adjustable mandrels allow for the length to be exactly as needed. Some people use this to eliminate the wobbles and flexing that comes with longer mandrels. Short mandrels mean turning one blank at a time. Longer mandrels allow you to turn both blanks at the same time, which often comes at the price of OOR. Flexing is not generally a problem with "B" mandrels.
- **A FOURTH - an Alternative: Mandrel-less** (Turning Between Centers) which will be noted later.

**LIVE CENTERS: IF YOU USE A MANDREL, you will need a 60° live center:** Most wood working lathes come with a "live center" on the tail stock for use on wood. "Mandrels" are metal, not wood. Therefore the little dimples in the end of the mandrel require a tail stock point that fits it - called a 60° (60 degree) live center - which are more common on metal turning lathes. If you don't use a 60 degree live center on the mandrel, you will very quickly find that the pen blanks are out of round on the tail stock end. You need a 60° live center to use with a mandrel.

**DEAD DRIVE CENTER** Use a "Dead Drive Center" if you are going "Mandrel-less", a.k.a "No-Mandrel", a.k.a. "Turning Between Centers". A dead drive is the opposite of Live Center. Dead Drive Centers are used in the head stock; Live Centers are used in the Tail Stock. Live Centers have a bearing in them and allow free spinning of the point that touches the turning blank or mandrel. Dead drives are just solid pieces of steel that fit the MT shank/spindle of the head stock of the lathe. (I know, redundant explanations but often necessary for beginners.)

**Mandrels? Or go Mandrel-less?** - Another topic for another post! Too much for here. One of the problems in turning pens is that pens often come out OOR - "out of round" and the majority of the reasons for this is associated with a mandrel. For this reason, Many people are forgoing (eliminating) the mandrel for turning pens. It is referred to as Mandrel-less, No Mandrel or Turning Between Centers. Please do a search for "Mandrel-less" for more details on this.