



International Association of Penturners

GET STARTED WITH PENTURNING

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THE MINIMUM BASICS YOU NEED TO GET STARTED WITH PENTURNING

Pen turning is a fun, addictive hobby. This article describes the MINIMUM basic tools and supplies that you will need to turn your own pens.

GENERAL WOODTURNING TOOLS:

Lathe -

Any woodturning lathe is good for making pens. To choose a lathe, think about what other things you may want to make with it.

- I strongly recommend an **electronic variable speed knob** as a must-have feature.

AN IMPORTANT NOTE ABOUT LATHES:

When you look at lathes, pay attention to the lathe's taper size and headstock thread size. They are used for attachments and accessories that you will need. You must know your lathe's taper and headstock thread sizes when you buy a pen mandrel, a chuck, etc.

- **RECOMMENDED TAPER:** I recommend a lathe with the very common *Morse Taper 2 (MT2)*. Some older lathes have MT1. You can find pen making accessories for MT1, but selection is limited.
- **RECOMMENDED HEADSTOCK THREAD SIZE:** Get a headstock thread size of *1 inch x 8 TPI*, the most common size. Larger lathes may come with *1.25-inch x 8 TPI*, which is fine.
 - Avoid 3/4 inch or any other unusual headstock thread size.

Turning Tools -

Turning tools come in *carbide tipped* or *high-speed steel (HSS)*. They are different in how they are used, but either type is suitable for turning pens. Many penturners use both types.

- **Carbide tipped** turning tools come with very hard, pre-sharpened, replaceable carbide tips.
- **High Speed Steel (HSS)** turning tools are preferred by professionals and many experienced woodturners, but not all. They require more frequent sharpening; experienced woodturners often pause to give their tools a quick sharpening touch-up.

RECOMMENDED TURNING TOOLS FOR BEGINNERS:

A *three-piece carbide turning tool set* would be a good start. Carbide tipped turning tools are generally considered easier for beginners to learn and use.

Turning tools and sets come in full, mini, and “pen” sizes. You can use any size turning tools for pens. Most penturners prefer mini size or pen size turning tools. Their lighter weight and smaller tips offer better control and precision for fine details. Full size tools can turn larger projects. (I use full size tools for pens, but most penturners do not.)

Turning Tool Sharpening - Turning tools must be kept sharp.

- **Carbide tips** are rotated to expose a fresh sharp edge as needed.
 - When all the edge(s) are dull, you replace a carbide tip with a sharp new carbide tip.
 - You can sharpen most carbide tips on small diamond stones. It is easy, though many people don't bother.
 - Some carbide turning tool sets come with a HSS parting tool instead of a carbide diamond tool. The HSS parting tool is sharpened on a grinding stone or grinding wheel. See HSS turning tools, next.
- **HSS turning tools** require a grinder setup. It can be elaborate or simple.
 - **CAUTION:** Avoid common bench grinders, which run too fast. They will overheat and damage your HSS turning tools.
 - It takes time and practice to learn how to sharpen HSS turning tools.

Additional Basic Tools for Penturning

- **Saw** - To cut pen blanks. A small handsaw is fine.
- **Drilling Method** - You need a way to clamp, center, and drill your pen blanks. Most penturners use either a *drill press* or *the lathe* to drill a long straight hole through the center of the pen blank.
 - **Drill Press:** There are a variety of ways to clamp your pen blanks for using a drill press. In the past, I used two wood hand screw clamps crossed at 90 degrees as an easy, budget solution until I switched to the lathe.
 - **Drill on the Lathe:** I prefer to drill on the lathe, but it requires a four-jaw chuck and a Jacobs chuck (see "OPTIONAL EXTRAS, MORE COSTLY, BUT RECOMMENDED", below).

SAFETY:

Lathes are very dangerous power tools. Some beginners do not understand or appreciate the many dangers. Learn lathe and woodturning safety skills before you start.

You **MUST** have:

- **Eye Protection** - For most woodturning, you must wear a face shield. Because pen blanks are very small, it is reasonably safe to wear typical safety glasses ... but **ONLY** for turning pens and the smallest handles (e.g., kitchen tools). If you turn anything else – wear a face shield!

- **Dust Mask** - To get started, a disposable N95 mask is readily available and appropriate for woodworking. I use a more comfortable fabric equivalent with replaceable N95 filters. There are many choices of masks and respirators available.
- **Hearing Protection** - Some lathes can squeal or make other loud sounds. You should wear hearing protection with most tools. Some lathes can be quiet enough that it is not a serious issue, but don't count on that. Better safe than sorry.

PEN MAKING SUPPLIES:

- **Pen Kit** - One per pen.
- **Pen Blank** - One per pen. Start with wood. Look at the ends for grain. Whatever you see on the sides will be gone after you turn it.
- **Drill to match the pen kit** - There are several common sizes. The pen kit instructions will tell you the drill size you need for that pen.
- **Bushings to match the pen kit** - Pen kits in the same "family" can share bushings, but each kit "family" has its own bushings. Keep your bushing sets separate! Sizes are similar and they are challenging to sort out later.
- **Slimline Bushings** - You use them as bushings for making Slimline pens, but you also use them as spacers. You will want at least one set, but they are easily lost in the sawdust, so two sets of slimline bushings are convenient.
- **Pen Mill** - A pen mill works with a drill to mill/grind the ends of the pen blanks. It performs three functions:
 - Mills the end of the pen blank flush with the brass tube inside.
 - Makes the end of the pen blank perfectly square (perpendicular) to the tube, so there are no gaps when you assemble the pen.
 - Cleans out any dried glue that may be inside the tube.
- **Pen Mandrel** - Used to hold the pen blank and bushings on the lathe as you turn the pen. Make sure the taper matches the taper on your lathe (usually MT2).
- **Pen Press or other assembly tool** - Most pen turners use one of the standalone pen press assembly tools, many of which can also be used for disassembly. I like and recommend the plastic SawDust Bros. Lathe Pen Press Adapters. They use the lathe for assembly, but only fit MT2 lathes. (They are available from Woodcraft, Amazon, eBay, etc.)

GENERAL SUPPLIES:

- **Sandpaper** - You will need sandpaper strips in assorted grits. Any sandpaper will do. You can cut off strips from larger sandpaper sheets if you wish. A dispenser box of 1-inch assorted sandpaper strips in 150, 240, 320, 400 and 600 grit is a convenient choice for woodturners, although these tend to be stiffer than sheets.
- **CA Glue** - CA glue (superglue) can be used to glue pen tubes inside the pen blanks, and also makes a great finish for the turned pen blank. Start with medium CA glue, which lets you start turning without much waiting. (*CA glue is not ideal for gluing tubes.*) **Most penturners prefer epoxy**, but this article is about the minimum items that you need.

- **Applicator for CA finish** - Paper towels are commonly used. (Bounty is a popular brand.) Others use the tiny plastic bags that come in pen kits or the fingertips from disposable gloves. I prefer a thin sheet of craft foam, cut into small squares.
- **Micro-mesh Pads** (9 pad set) - They last nearly forever. I am still on my first set, and I have made over 100 pens. Hint: Buy 3x4 inch pads and cut them into multiple sets for a better cost value.
- **Rags** - For wiping off sandpaper grit and micro-mesh grit on a stopped lathe between sanding/polish steps, plus tiny bits of fabric from applying friction polish. I use cut up T-shirts.
- **"Cover"** - Use rags, plastic bags, scrap wood, or cardboard to cover and protect the lathe bed when you apply finish. Weigh it down with something to prevent it from getting sucked into the spinning pen blank.

The above recommendations assume that you will use the CA glue for gluing tubes inside the pen blanks and also as a pen finish. CA glue is fast, but far from ideal for gluing pen tubes. Most penturners prefer epoxy for gluing the pen tubes inside the blanks, but still finish their pens with CA glue. Use the sandpaper, apply the CA, then use wet micro-mesh pads in sequence to polish your CA-finished pen blanks to a bright, durable high-gloss shine.

(Some beginners prefer a friction polish rather than a CA finish because it is easier to apply. I like the natural look of the friction polishes better than the "plastic" CA finish, but the friction polishes are not as durable as a CA finish. Look for "Hut Crystal Coat" (low cost, okay, not great), Myland's, Shellawax, etc. Pens Plus is a similar, popular finish. Read the threads in the Finishing forum to learn more.)

OPTIONAL EXTRAS, HIGHLY RECOMMENDED:

- **Plastic Bushings** - Keeps CA finishes from sticking to your metal bushings. They are definitely worth the low cost. I put them on before sanding to avoid sanding the bushing metal, where the metal dust can darken the wood ends. Take special care to avoid rounding over the edges of your turned blanks, especially after you so carefully matched them to your metal bushings!
- **Mandrel saver** - Keeps your mandrel from bending, reduces chances of off-center turning, better overall.
- **Spare brass pen tubes** - They take the stress out of making pens. If you mess up anywhere before final assembly, you don't stress over it. Get out another piece of wood and a spare tube, no hassle. Be sure the spare tubes match the ones from the pen kits that you like to make.
- **Epoxy** - Better than CA glue for gluing pen tubes inside pen blanks. Save the CA for finishes.

OPTIONAL EXTRAS, MORE COSTLY, BUT RECOMMENDED:

- **Calipers** - For measuring parts, measuring your pen turnings, and more. I like the digital calipers, but other people dislike them and prefer the dial type. Choose whichever caliper feels best for you.
- **Four Jaw Chuck** - For drilling on the lathe. It can do far more than that, and is used for many kinds of wood turning, especially bowls and platters. For drilling, the chuck holds your pen blank and rotates it.
 - The four-jaw chuck must match your headstock thread size (see "Lathe", above). Most come ready to screw onto the headstock. A few require a separately purchased "insert adapter", which is used to match your headstock thread size to the chuck.
- **Jacobs Chuck** - For drilling on the lathe. The Jacobs chuck holds the drill bit. You slowly crank in the drill bit with the tailstock as the pen blank is turned by the four-jaw chuck. It seems backwards, but it works very well.

SOURCES FOR WOOD PEN BLANKS:

- **Pen blanks** are typically $\frac{3}{4}$ " square (for thinner pens) up to 1" square (for thicker pens) x 5 inches or so. You can make a pen from nearly any wood, and many other materials as well. Start with softer, less dense wood. You don't have to buy ready-made pen blanks. You can take any board or branch or burl or scrap and cut a small piece of it for pen making. Before long, you will have more wood than you have time.

SOURCES FOR PENTURNING SUPPLIES:

Take the time to look at the *vendor forums*: <https://www.penturners.org/forums/vendor-forums.208/>

Many of the vendors have been longstanding, active members here at Penturners.org. They have contributed so much to the penturning community, sharing their knowledge and helping everyone "up their penturning game." They have earned and deserve your business. Start there.

Other sources include your *local woodworking stores*, which stock many penturning supplies. There are nationwide stores (USA) such as [Woodcraft](#) (individually owned!), [Rockler](#), and many other local woodworking stores. They deserve your business too. Most offer mail order. You can save shipping costs if you buy locally.

Tools and supplies are available from the "*big box stores*" and those *huge website retailers*. For me, they are a "last resort" because I believe it is important to support my community (both here at [Penturners.org](#) and where I live).

While editing this article, I was reluctant to post links to my favorite sources. Links change, and my favorites may be someone else's "turkeys." Wherever you go, penturning supplies can be just a web search away.

OTHER RESOURCES:

The people here at Penturners.org are warm and friendly, generous with their time, helpful beyond expectations, and plain ol' good folk. They are quick with praise and helpful suggestions. They won't criticize your mistakes or make you feel bad about them. Believe me, we have all made plenty of them.

Another great resource is your *local woodworking or woodturning club or guild*. They are also a good source for used tools. Club members selling tools want to see them in good hands, and they want to maintain their good reputation with the other members. They may have extra wood to give away – scraps from woodworking projects can become great pens. Some clubs have been holding online or "hybrid" live/online meetings. Beginners are always welcome; don't be shy. Some offer demos and mentors to help you with woodturning issues. Some clubs hire woodturning professionals and experts to teach new skills at meetings or for special sessions.

You can find *penturning classes* at *local woodworking stores* and a few *community colleges*. You can find generalized *woodturning classes* from skilled woodturning professionals. Many of them have gone online too, so you can watch and ask questions from your home.

I am not a "YouTube fan", but you can also find lots of video demonstrations there, too. Bear in mind that not everyone online is an expert, and some of them do very dangerous things. Paraphrasing a quote, I've seen, **"YouTube has thousands of penturning videos. Hundreds of them are good."**