



## Joinery Off the Grid *Tool List*

I would like to preface this tool list with some remarks and thoughts. *Joinery Off the Grid* is designed for those wishing to work largely, or completely, without electric tools. Of necessity, we will look at the historical aspects of woodworking, when it was done entirely without electricity. However, we will not tie ourselves to using only antique tools and methods when better modern tools are available. We enjoy better materials and manufacturing techniques than our ancestors ever dreamed of, giving us better tools that allow us to do better quality work. In fact, work of high quality is possible with hand tools or machine tools. It may just take a bit longer by hand methods. For those only wishing to do some home repairs and build furniture there is a cost savings as well. To take this course you will need the following items. Even if you choose at some point to go electric these tools will still be necessary to build top tier furniture.

**Planes:** We will use planes extensively to work up raw lumber and to bring our work to final shape and smoothness. At the beginning of my teaching career I advised students to buy a used Stanley Bailey (or even better a Stanley Bedrock) plane made before 1943. Planes of Post-World War Two manufacture were better as a canoe anchor than as a woodworking device. Happily, this situation has completely changed with ready availability of some wonderful planes that outperform antiques. While we encourage you to bring classic Baileys and Bedrocks that are in proper working order, our advice to those who are planning to purchase a plane for this course is to purchase a new one. If you bring an unusable plane we will not have time to make it work so if you are in doubt as to the serviceability of a plane, send us a photo and we will let you know. We have a few loaner planes which we make available on a first come first serve basis for those who would like to decide after the class if planes are in their woodworking future.

Three brands that we have found to be reliable are: [Wood River](#), [Lie-Nielsen](#) and [Veritas](#). The first will be the most reasonably priced and are basically copies of Lie-Nielsen's designs, which are in turn copies of classic Stanley Bedrocks. Veritas Planes (which are a division of Lee Valley Tools, a Canadian retailer) are very innovative, taking the best from history but readily using new materials and state of the art manufacturing methods. Their custom or their bevel up (low-angle) planes are as good as it gets but their standard Bench Plane line offers excellent planes at a reasonable price. Their blades are available in A2 which holds an edge much better or PM-V11 which is better yet.

You will need at least a #4 or #4½ plane for this course with also having a #5 or #5½ being useful. If you have a jointer and/or a scrub plane bring them. Half numbered planes are a bit wider than their whole number counterparts and are my preferred planes. Because the blades are wider, the half numbered planes are harder to push, so a whole numbered plane (4 or 5) may be a better choice if you have never planned before or are small in stature.

**Marking and Mortising Gauges:** You will only need a marking gauge for this class. A marking gauge is one of the most frequently used and most useful tools in woodworking. It allows you to scribe a precise line parallel to an edge and is used in laying out dovetails as well as laying out the height of mortise and tenon joints. The marking gauge's cousin is the mortising gauge which has two scribing points/knives to lay out the width of mortise and tenon joints. Traditionally they were separate tools but since the late nineteenth century they have been frequently merged into one. This is o.k. but it is much faster to layout mortise and tenons with separate marking and mortising gauges.

The best marking gauges are the metal type with a graduated rod and a round fence that lock anywhere on this rod. You simply set it to the measurement you desire with the scale on the rod and proceed. The very best is the Starrett, but it is also the most expensive. Veritas makes a great one at a much more reasonable price and there are many similar models of Asian manufacture that are reasonably priced and work just fine.

Historically, marking/mortising gauges were made from fine wood and bound with brass. Beautiful wood examples are still made but most are the aforementioned marking/mortising combination design with twin scribes on one side of the beam and a single scribe on the other. Of these you must be cautious. The best have a screw adjustment for the twin scribes but some will not adjust down to ¼" between the scribes, which is a very common mortise size. Those that have the second point that simply slides get very hard to set when the tool loosens up with some wear. Most wooden marking gauges have no scale on the beam so must be set with a ruler. This extra step is fiddley and time consuming. A few seconds does not sound alarming, but when multiplied by twenty or thirty times a day, it adds up. To review, a wooden marking/mortising gauge should have a screw adjustment for the two mortise layout points and must allow those two points to be set within ¼" of each other. A scale on the beam is a nice but is a seldom seen feature.

**Back Saws:** A good back saw is a joy to use and a bad one can leave you blaming yourself for its shortcomings. Like planes, there were no really good back saws at the beginning of my teaching career. In those days, many went to Japanese saws which are sharp from the box but difficult to re-sharpen. Like planes, there are now a number of really good Western style back saws being manufactured. The most reasonably priced is the Veritas, but Lie-Nielsen, Wenzloff, and Bad Ax offer extraordinary saws as well.

Your primary back saw should be rip filed with a point count between 10 and 15. The point count of a saw is the number of teeth points that lie within one inch.

Overly fine point count and very narrow kerf saws are for experienced woodworkers and the beginner will be hamstrung by them.

We will also use panel saws in this class, this is what we think of as a standard carpenter's hand saw. We have sufficient loaners in the workshop so that you do not have to buy this saw now. In fact, you are better off trying some of ours before buying your own. However, if you happen to have one, bring it!

**Bench Chisels:** It is hard to buy a bad bench chisel these days unless you go for really cheap examples. Sets offer a good value and having more sizes is a luxury. Buy the largest set you can afford! Narex is also a reasonably priced but good quality brand made in the Czech Republic. Check out their 10-piece set. Irwin (sometimes labeled Marples, which is an English company they purchased) are very reasonably priced and work fine. Stanley Sweetheart is another decent chisel offered in an 8 piece set. Even a decent set of carpenter's butt chisels (which are shorter than bench chisels) will do fine for this course.

Japanese chisels are of high quality and hold their edges for ages, but they are expensive. Veritas and Lie-Nielsen offer chisels made from exotic alloys such as A2 and PM-V11 at similar pricing to Japanese chisels.

### Tool List

\*Denotes Must Have

Need	Size/Grade	Item	Comment
*	10 to 18 point	Backsaw	Rip filing is o.k. Beginners should avoid very thin and very fine-tooth backsaws. <a href="#">Veritas</a> , <a href="#">Lie-Nielsen</a> , <a href="#">Wenzloff</a> , <a href="#">Bad Ax</a> .
	#5 or #5½	Bench Jack Plane	Veritas, Lie-Nielsen or Wood River
*	#4 or #4½	Bench Smooth Plane	Veritas, Lie-Nielsen or Wood River
	#7 or 8	Bench Jointer Plane	We have loaners but if you have one, bring it.
	Scrub	Bench Plane	We have loaners. If buying: Veritas, Lei-Nielsen A classic Stanley 40 is good too. (Not offered Wood River)
		Plow or Combination	We have loaners but if you have one, bring it.
		Rabbet Plane	WE have loaners but if you have one, bring it.
*		Bevel	A bevel is a simple tool that transfers angles. Wide variety available but plastic model is fine.
		Carver's Mallet	Round wooden type is best; the rubber headed types are too "bouncy. Japanese metal hammers for this purpose are great and what Ernie uses.

*	12"	Combination Square	The Starrett Combination square is a good investment.
*	6"	Dividers	Size refers to length of legs and a small pair (6" max) is better! Starrett is best but pricy.
	12 – 16 oz.	Hammer	Standard claw or Japanese is fine.
*		Marking or Mortising/Marking Gauge	Starrett is the very best with Veritas being second. Lots of similar gauges at reasonable prices. While many companies offer tools with marking and mortising functions we only need marking.
		Notepad	
	Chunk	Paraffin Wax	Canning wax is perfect and can be found at most grocery stores. Old candle will do. Used to lubricate your planes.
		Pencil	
*	6" or 12"	Steel Ruler	
*	5'	Wood Ruler	
*		Safety Glasses	
	8" to 10"	Screw Clamps (2)	Size refers to length of jaws. We have many but if you are driving and have a couple, throw them in.
	Straight and Phillips	Screw Driver	
*	Set	Bevel Edge Chisels	Buy an 8 (or even 10) piece set, rather than a 5, if you can afford it. It is most useful to have a 1/8" chisel for dovetails. Japanese chisels (Oire-Nomi) are excellent but expensive. The Japanese drive their chisels with a 570-gram barrel hammer and this is Ernie's practice.
		White Chalk	For Layout
*		Ear Protection	Ear muffs are best.
	Cross Cut and Rip	Hand Saws	We have loaners. Bring them if you have them but do not rush out and buy one.