

Kurt's clinic

Kurt Hertzog answers readers' questions

I have a demo that I will need to travel to. Any suggestions on the best way to travel with tools?

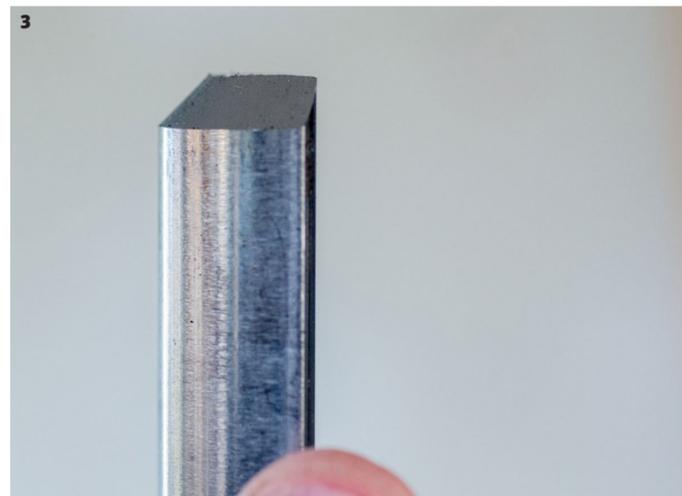
If you are driving, no problem. You can use your tools until the last minute and then pack them to travel along with you. Obviously, travelling by auto or bus just requires your tools to be packed carefully enough to arrive intact. Plane travel is the problem area. If you need to travel by air, you will have more hoops to jump through. You can always ship your tools and supplies ahead of time through a common carrier but that puts you at an availability disadvantage, added cost, and relying on timely/safe delivery. That puts those tools out of service for you once you pack them. With the restrictions on anything potentially a weapon, you certainly won't be able to bring tools on board as carry-on luggage. You will need to pack them safely for the luggage compartment – safely for both for the tools' sake and any potential inspectors. With the tools inside checked luggage, you are liable to get the attention of the metal detectors, scanners, and anti-terrorist folks. It is rare that my tools haven't been 'hand inspected' somewhere in the bowels of the airport before they are loaded on board. You know – the tell-tale little TSA greeting card left inside of your luggage. I wrap the sharp ends with painter's tape. It is very evident, covers well, and removes easily. I never wrap the tape tightly but rather make loops and folds. The blobby method of covering tends to provide safe wrapping with compliance and some cushion from cutting too easily. With the ends taped, I wrap all the tools together in clear stretch wrap with the points facing inward. There are large label warnings of 'sharp woodturning tools' written in magic marker. Being wrapped in clear stretch wrap, I've never had anything physically disturbed beyond that visual and perhaps a shake. BTW... Careful unwrapping provides the tape and stretch wrap to pack the tools for their return trip so you don't need to find it at your other end, or bring tape and stretch wrap along.



1 Whenever I'm carrying my tools, duffel bag, shipping in luggage, or carting around in a box, I tape the sharp tool ends for protection and safety. **2** Taped and pointed inward, the stretch wrap keeps things organised and lets me put a warning in for those who might handle them... Caution – sharp woodturning tools

My turning buddies criticise my tool grind angles. Each of them has a grind angle they swear by for each tool. What are the correct angles?

Your question and my answer will likely raise the hackles of many and certainly be the topic of much varying opinion. While I may be simplistic, I'll give you my outlook on tool grinding angles. Feel free to ignore it and call me foolish. The correct answer is 'it depends'. I don't measure my tool angles although there are turners who do. A tool needs to only cut wood or whatever you happen to be turning. A sharp tool, presented properly with a clearance angle, will cut your rotating workpiece. The larger the clearance angle, the more aggressive the cut will be. The actual grind angle can and does vary from tool type to tool type. Each can range between reasonable values based on the material and the need for a clean cut with a durable edge. Narrow grind angles produce a keen cutting edge that may not be too durable. Think of a razor blade. Larger grind angles produce a tough and durable edge that may not be too keen. Think splitting maul. Between these extremes, there is a good balance of toughness and keenness that is proper for your

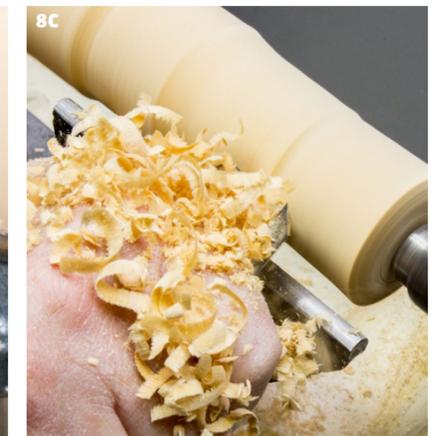
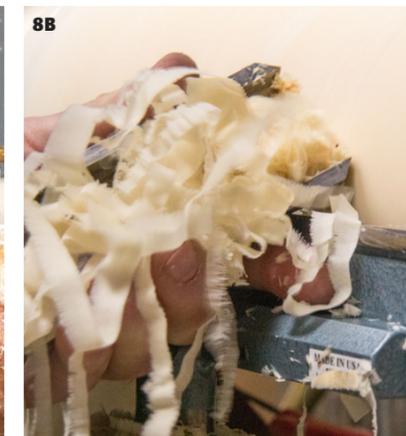


3 While I don't measure angles, I'm guessing most of my general use cutting tools are somewhere around 45° or so

PHOTOGRAPHS BY KURT HERTZOG



4 Based on my height, my lathe setup, my tool presentation and cutting technique, and keenness/durability, sharpening all but my special needs cutters is the same **5** Other than negative rake scrapers, my entire entourage of regular scrapers are just a hair under 90°. It minimises steel grinding lengths **6** When I need to fit into some place a standard 45° grind won't fit, I'll have a tool that will fit based on the thickness rather than the angle **7** Of course you could cut and detail your finials with a skew chisel, which I sometimes do. A far lower-risk tool is a spindle gouge ground to a shallow enough angle to fit. **8** As the saying goes: 'The only person you really have to please is yourself.' If it cuts well and you are happy with it, you've likely gotten it right



material at hand. Different species will cut differently, and some of the pros will have a grind preference based on the hardness, cutting characteristics of the material being cut, and sometimes the overall shape to be cut. For the most part, 40°-60° will be in the ballpark for many cutting edges. Special tools, detailing and precision types, aren't usually ground to a specific angle based on cutting ability but rather size. The tool is made 'small enough' to fit into the area needing to be cut. An example might be one of my small spindle gouges used to cut blackwood ornament finials. My gouge is ground so it will fit into the V grooves and small beads etc. As such, the grind is very shallow, in the order of 20° or less, to

provide an edge that is slender enough to fit and cut in the narrow spaces. Standard scrapers are slightly less than 90°. The shallower the grind angle, the more steel there is to grind away each time. I know this doesn't give you a number for each of your tool grinds, but it will be something you zero in on as you use your tools. You don't indicate how well your tools are performing since that really is the final arbiter. If you can repeatedly refresh your edge and get clean cuts with acceptable durability that you are pleased with, you really don't need to answer to your buddies whether your spindle gouge is ground at 40°, 45°, or 50°. Your results will be evidence of a properly sharpened and applied tool.

◀ **I've heard of people making turning tools from old files. Can this really be done? What do you think of it?**

Can you? Yep. Should you? Nope. To elaborate a bit, the file base metal can be processed into a tool. But why? If you know what you are doing, you could, but probably know better. For that amount of work to avoid \$5 worth of ground flat O1 tool steel? I'll take virgin stock that I know can be shaped, hardened, tempered, and ground into a safe cutting tool any day over some piece of unknown that needs plenty of work just to get to ground zero (and still may have

some unknowns). While making tools is fun, use it as a fun learning project. We use O1 in my tool-making classes. Normally, the students make a scraper or two, a skew chisel of desired size, and often a marking knife. They learn the fundamentals of tool steels, the tool-making process, heat treating, grinding, and appropriate handle creation. Again, a great learning exercise. Economically, it is not worth it if you figure in time, materials, heat treating, and any possible errors. Buy your tools that were factory made by a respected vendor. New or gently used are a once in a turning lifetime cost and should be amortised over that life.



9 A tool-making class doing rough shaping prior to hardening. Notice the pile of Starrett O1 tool steel in front of the grinder

10 One of the beauties of using O1 is you can get to the hardening temperatures using MAPP gas. Quenched in cooling oil with tempering easily done in a toaster oven

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